

# **Reciprocals and Reflexives: Theoretical and Typological Explorations**

*Edited by  
Ekkehard König  
Volker Gast*

**Mouton de Gruyter**

## Reciprocals and Reflexives



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Berlin, September 2008  
Ekkehard König, Volker Gast



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## Abbreviations and glosses

1, 2, 3	1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> person	DIM	diminutive
1/2/3:x	1 <sup>st</sup> /2 <sup>nd</sup> /3 <sup>rd</sup> person, class <i>x</i>	DIR	directional
A	Agent/transitive subject	DIST	distal
a.n.	authors' note	LVB	light verb
ABL	ablative	DS	different subject
ABS	absolutive	DU	dual number
ACC	accusative	DUR	durative
ACTL	actual	DYAD	kinship dyad
ACTV	Active	EMOT	emotional
AFF	affix	EMPH	emphatic
AGR	agreement	ERG	ergative
ANPH	anaphor	EXCL	exclusive of hearer
APP	appositive marker	F	feminine
APPL	applicative	FACT	factive
APRX	proximal to addressee	FIN	finite
APSV	antipassive	FML	formal
ART	article	FNOM	factive nominal
ASP	aspect	FOC	focus
ASS	asser(ta)tive	FUT	future
AUG	augmented (number)	FV	final vowel
CAUS	causative	G	Goal
CL	clitic	GER	gerund
CLSF	classifier	GO&	associated motion
COM	comitative	GRPW	groupwise
COMP	complementizer	HAB	habitual
CONJ	conjunction	IDPH	ideophone
CONT	continuous	ILL	illative
CTR	contrastive	IMM	immediate tense-aspect
COPART	co-participative	IMP	imperative
CSTR	construct state	IMPF	imperfect
CTG	contingent	INCH	inchoative
DAT	dative	INCL	inclusive of hearer
DEF	definite	IND	indicative
DEIC	deictic	INDEF	indefinite
DEM	demonstrative	INF	infinitive
DEP	dependent	INST	instrumental

INT	intensifier	PREV	preverb
INTR	intransitive/izer	PRF	perfect
IO	indirect object	PROG	progressive
IPFV	imperfective	PRON	(personal) pronoun
ITER	iterative	PRS	present tense
LIG	ligature	PST	past tense
LNK	linker	PSV	passive
LOC	locative	PTC	particle
LOG	logophor(ic)	PTCP	participle
LVB	light verb	R	Recipient
M	masculine gender	RDP	reduplicated
MID	middle voice	REP	repeated (action)
MONFOC	monofocal	RLS	realis
NARR	narrative	RECP	reciprocal
NEG	negation	REFL	reflexive
NFUT	Non-future	RESP	respectful
NMLZ	nominalizer	RPI	remote past irrealis
NOM	nominative	RSTR	restrictive
NPST	non-past	RR	reflexive/reciprocal
NSG	non-singular	RSUF	reduction suffix
NSPC	non-specific tense/ aspect marker	S	(intransitive) subject
NSPF	nasal prefix	SBJ	subject
O	undergoer/transitive object	SBJV	subjunctive
OBJ	object	SCAUS	sociative causation
OBL	oblique	SE	SE-anaphor
OM	object marker	SEQ	Sequential
ORG	originative (case)	SG	singular
ORT	ORIENTED	SM	subject marker
PERS	personal	SPEC	specific
PFV	perfective	SPON	spontaneous
p.k.	(author's) personal knowledge	SPRX	proximal to speaker
PL	plural	SUBORD	subordination marker
PNCT	punctual	SUF	suffix
POSS	possessive	TOP	topic
POST	postposition	TPST	today past
PRON	pronoun	TR	transitive/izer
PP	past participle	VBLZ	verbalizer
PRED	predicative marker	VCL	verbal classifier
PREF	prefix	VE	vegetable

# **Reciprocity and reflexivity – description, typology and theory**

*Ekkehard König and Volker Gast*

## **1. Introduction**

While there are some brilliant in-depth studies of reciprocity in individual languages and groups of languages (e.g. Dalrymple et al. 1998, Frajzyngier and Curl 2000, etc.), this topic has received relatively little attention from a cross-linguistic perspective. This situation is now changing, however. V. Nedjalkov's collective monographs with fine-grained analyses of reciprocal constructions in more than forty languages have now appeared (Nedjalkov 2007b), which combine individual studies of reciprocity in a wide variety of languages with typological surveys provided by the editor himself (Nedjalkov 2007a) and by M. Haspelmath (Haspelmath 2007). Nicholas Evans is writing a typological monograph on reciprocals, and the present book is yet another attempt to expand our knowledge of reciprocity and to integrate it into a coherent theory and typology. This attempt is undertaken against the background of insights gained in the closely related domain of reflexivity, which has been studied extensively for more than thirty years now both in individual languages and in its cross-linguistic manifestations.

In this introductory chapter we will first take a brief look at the concepts of “reciprocity” and “reflexivity” in fields other than linguistics (Sections 2 and 3). In Section 4 possible ways of delimiting the domains of investigation are discussed and Sections 5–9 present an overview of current issues in reciprocity and reflexivity, with reference to the papers compiled in this volume.

## **2. Reciprocity in biology, philosophy, the social sciences and linguistics**

Reciprocity is not only of interest for linguists. Since this phenomenon lies at the root of social organization, it has fascinated philosophers, social scientists and biologists for many decades and even centuries. Biologists have identified a behavioural pattern called “reciprocal altruism” among animals (cf. Trivers

1971). It may benefit an animal to behave altruistically towards another if there is an expectation of the favour being returned in the future. The cost of behaving altruistically is offset by the likelihood of this return benefit, permitting the behaviour to evolve by natural selection. For reciprocal altruism to work it is necessary that individuals should interact with each other more than once, and have the ability to recognize other individuals with whom they have interacted in the past. This behavioural pattern presupposes a certain cognitive development, the ability to recognize specific individuals of the same species and the expectation of future encounters. The biologist Frans de Waal (2005) distinguishes three basic reciprocity mechanisms among animals: (i) symmetry based mechanisms (“We’re buddies.”), (ii) attitudinal mechanisms (“If you are nice, I’ll be nice”) and (iii) calculated mechanisms (“What have you done for me lately?”).

While altruism among animals can ultimately be regarded as disguised self-interest, philosophers and sociologists have emphasized the role of reciprocity in the creation, strengthening and maintaining of social relations among humans, beyond the mere exchange of useful goods. In *Leviathan*, Hobbes (1651/1914: 67) sees reciprocity as a prerequisite for ending a “condition of Warre of every one against every one”. “Whensoever a man transferreth his right [of nature], or renounceth it; it is either in consideration of some right reciprocally transferred to himself; or for some other good he hopeth for thereby” (Hobbes 1651/1914: 68). Marcel Mauss’ *Essai sur le don* (1923/4) offers an anthropological account of rituals of exchange in a number of communities, illustrating the relationship between the gift and the exchange and their role in providing the foundation for a variety of religious, economic and legal phenomena in archaic societies. In the intricate systems of exchange described by Mauss, community is founded on a ritualized recognition of interdependence. Mauss shows that the gift is only one element in a system of a mutual bestowing of benefits, which is at the same time free and subject to constraints.

A number of famous responses to Mauss’ seminal work have used the social and ethical complexities of gift-giving to challenge the market rhetoric and exchange theory found in Mauss’ account and social theories based on his work. Derrida is particularly well-known for criticizing Mauss’ view that gifts combine generosity with self-interest and are thus essentially ambiguous (cf. Derrida 1992). According to Derrida there is a fundamental paradox in the nature of the gift: It must never appear as such. The gift is annulled as soon as there is some kind of reciprocity involved. Others, by contrast, have taken Mauss’ idea much further and emphasized the role of reciprocity as an essential element of human nature. As H. P. Becker once said, “[m]an becomes human in reciprocity” (Becker 1956: 94). Current work in anthropology and sociology distinguishes

different manifestations of reciprocity along the following dimensions: (i) direct (genuine) reciprocity, where the donor is also in the role of recipient at a later time, vs. generalized reciprocity, where the concept is transferred to a group and where the group as a whole returns a service obtained from another one at an earlier time (solidarity); (ii) reciprocity of roles, which involves an exchange of roles in the interaction between humans or animals (e.g. donor/receiver), vs. reciprocity of perspectives, which involves a dialectic “mutuality of recognition” in communication. Questions concerning admissible gifts and inadmissible gifts (holy objects, objects leading to corruption) also figure prominently in these discussions. In biology, a distinction frequently made is the one between direct and indirect reciprocity, depending on whether the donor receives the same type of service at a later time as well or whether his altruistic behaviour merely leads to an increase in reputation (“symbolic capital” in Bourdieu’s 1997 terminology), which may also lead to future rewards. Moreover, it has been shown that birth order may correlate with cooperative and altruistic behaviour. A firstborn child tends to be more altruistic than a secondborn (Staub 1971).

In discussions of ethical principles reciprocity may also be accorded a fundamental role. When Confucius was asked whether any single word could summarize all other ethical principles he suggested that *shù* ‘reciprocity’ might be such a word (Analects 15, §23; cf. Legge 1893/1963). Christian ethics, by contrast, see reciprocity as a manifestation of the more fundamental principle ‘love’ (cf. Hobbes’ “Law of the Gospel”, i.e. “Whatsoever you require that others should do to you that do ye to them”, cf. Hobbes 1651/1914: 67). The relationship between the concepts ‘love’ and ‘reciprocity’ is also the subject of Sartre’s well-known discussion in *L’Être et le Néant*. For Sartre there is a fundamental incompatibility between these two concepts. (“L’amour ainsi exigé de l’autre ne saurait rien demander: il est pur engagement sans réciprocité”; Sartre 1943: 424). Finally, we would like to mention that recent discussions of the evolution of social intelligence and of language itself also place reciprocity at centre stage (cf. Ellis and Bjorklund 2005).

Even though the concept of reciprocity has not always received the attention it deserves in the social sciences, there is now a rich literature on that concept as well as a fruitful interdisciplinary dialogue between fields as diverse as anthropology, sociology, economics, law, philosophy and literary theory. What is of primary interest to linguists is, of course, the variety of expressive devices used to encode reciprocity across languages. Of equal interest, however, is the question concerning the interpretations and ambiguities that languages allow for these expressions (cf. Dalrymple et al. 1998). In turning from biology, the social sciences and philosophy (ethics) to linguistics one is struck by the fact that the term “reciprocity” is used not only for positive interactions centering around

the prototypes ‘sharing’, ‘exchange’, ‘the gift’, ‘hospitality’, ‘cooperation’ or ‘mutual knowledge’, but for all kinds of symmetric or “mutual” relations and interactions. In other words, all of the following sentences are equally relevant to the study of reciprocity in natural languages:

- (1) *Inhabitants of this village help each other.* (positive, weak reciprocity)
- (2) *Paul and Mary hate/ruined each other.* (negative, simultaneous/sequential events)
- (3) *People in this house know each other.* (strong reciprocity)
- (4) *Inhabitants of these islands used to eat each other.* (generalized reciprocity)
- (5) *Many people at the party are married to each other.* (pairwise reciprocal)
- (6) *The boxes were stacked on top of each other.* (chaining of relations)

We will return to these linguistic aspects of reciprocity in Section 6.

### 3. Reflexivity in philosophy, psychology and cultural studies

If reciprocity is basically disguised self-interest then reflexivity (or “reflection” as it is also called) is the more fundamental concept. If such a reductionist view is rejected, as indeed it is in many of the discussions mentioned above, reflexivity and some of its manifestations (egotism, self-interest, selfishness, self-sufficiency, etc.) are in some kind of opposition to reciprocity. This concept, too, plays an important role in discussions of philosophy, psychology, religion, literature and cultural studies. These discussions are accompanied by interesting linguistic phenomena such as the development of compounds with the original intensifier *self* as first component (*self-respect*, *self-control*, *self-assurance*, *self-determination*, etc.). A recent, especially remarkable addition to the list of such formations is the compound *self-reflexivity*. A brief sketch of the historical development of such compounds in English is given in Ludwig (1963: 1–11). That the meaning of compounds like *self-awareness* or *self-determination* is not simply ‘the state such that  $\exists x [x \text{ is aware of } x]$ ’, or ‘the event such that  $\exists x [x \text{ determines } x]$ ’ is discussed in Tugendhat (1979). More often than not these compounds express highly complex philosophical concepts.

A further development connected with these discussions is the reanalysis of reflexive pronouns (anaphors) in English into their historical building blocks (*ourselves* > *our selves*), and the use of the abstract noun *the self* or even *selfhood*. Reflexive anaphors and a combination of their components can now be used with a different meaning, as in the following examples, which bring up the question of trans-temporal identity and the distinction between the body and the mind:

- (7) a. *This allowed them to travel back in time to their idyllic childhood and observe their young selves. . .* (D. Lodge, *Author, author*. London: Penguin Books, p. 142.)
- b. *Speaking for our selves: an assessment of multiple personality disorder* (title of Humphrey and Dennett 1989)

In all of the discussions where reflexivity or reflection played an important role the focus of interest was on what from a linguistic perspective could be called “remarkable reflexivity”, i.e. on such activities or processes that are normally other-directed. In philosophy it was thinking about (reflections on) thinking, rather than thinking directed on something else, that played an important role in different theories of self-awareness and self-consciousness. In biology and psychology the concept of the self figures prominently in treatises on the theory of mind, on personhood and personalities. In the article quoted in (7b) (Humphrey and Dennett 1989) the authors discuss Multiple Personality Disorder in terms of distinct personalities or selves as well as questions relating to the ontological status of such entities. In literature and cultural studies questions of reflexivity are especially discussed with regard to the self-referentiality (auto-reflexivity) of literary works and with regard to individual or cultural identity. A culture reflecting on itself typically engages in a process of “othering”, whereby all aspects not accepted or not acceptable are assigned to other cultures. All of these discussions are based on linguistic concepts and forms of reflexivity, but are also instrumental in creating new formal and conceptual differentiations.

#### 4. Delimiting the domain of inquiry

Language comparison is only possible for certain restricted domains, never for complete language systems. So how can we delimit the domains of reciprocity and reflexivity and in so doing establish the essential basis for the comparison, the *tertium comparationis*? Several answers have been given to this question, all of which provide important insights, even if they are wrong or partly inadequate.

(i) A naïve, though frequent, procedure is simply to take a sign in the sense of Saussure, i.e. a combination of *signifiant* and *signifié*, in a specific language as a point of departure, e.g. the reflexive pronoun *se* in French or the reciprocal expression *each other* in English. Given the arbitrariness of signs or linguistic categories, however, such a procedure may end up in opposing totally unrelated phenomena and can thus never establish the third of comparison. It is purely an accident that English *each other* would provide a reasonable starting point, since we know that this expression manifests little or even no polysemy. But despite the interesting attempt to establish a univocal meaning for *each other*

given in Dalrymple et al. (1998), it is far from clear whether we really can reduce the considerable variation in the interpretation of this expression to one basic meaning. Moreover, we also need to consider the question of whether there are other reciprocal markers in English or not. If we select other languages as a point of departure, as for instance an Austronesian language, a procedure of this kind is unthinkable, given that in many languages of this family reciprocal meanings ('They V each other') and sociative meanings ('They V together') are encoded by the same formal means (cf. Moysse-Faurie this volume).

The inadequacy of such a procedure is also clearly revealed by applying it to reflexivity. The "reflexive pronouns" of English (*myself*, *himself*, *ourselves*, etc., cf. [8]) also show up in a completely different use, viz. as intensifiers, where they do not occupy an argument position but are adjuncts to DPs (cf. [9]):

- (8) *John [hates himself].* (reflexive)  
 (9) *We must ask [the director himself].* (intensifier)

Reflexive pronouns in French, by contrast, are used in (non-canonical/preverbal) argument positions analogously to (8) (cf. [10]) and also for the so-called "middle domain", i.e. as markers of derived intransitivity (cf. [11]).

- (10) French  
*Jean se déteste.*  
 Jean REFL hates  
 'Jean hates himself.' (reflexive)
- (11) a. *Le vin blanc se boit frais.*  
 the wine white MID drinks cool  
 'White wine is drunk chilled.'
- b. *Cette chemise se lave facilement.*  
 this shirt MID washes easily  
 'This shirt washes easily.' (middle voice, facilitative)

As is shown by these examples, the domains of reflexivity identified by the relevant category in English and that in French overlap, but are far from being co-extensive.

(ii) An alternative procedure to the one just discussed is the choice of an extra-linguistic, notional, cognitive or conceptual basis for a typological comparison. This is at least what the terms used in some typological studies suggest (e.g. "possession", "time", "causation", "modality", "definiteness", etc.). Such cognitive categories can be represented by pictorial diagrams, by expressions of

predicate logic or simply by verbal paraphrases. For the domains under discussion the diagram for reflexivity would be an arrow proceeding from a source and returning to it ( $A \odot$ ), for reciprocity it would be a double arrow connecting at least two persons ( $A \leftrightarrow B$ ). The relevant formulae for reciprocity and reflexivity could roughly take the following shapes:

- (12) A binary predicate  $R$  is reciprocal on a set  $A$  iff:  
 $\forall x, y \in A [x \neq y \rightarrow R(x, y)]$  and  $|A| \geq 2$  (“strong reciprocity”)
- (13) A binary predicate  $R$  is reflexive on a set  $A$  iff:  
 $\forall x \in A [R(x, x)]$

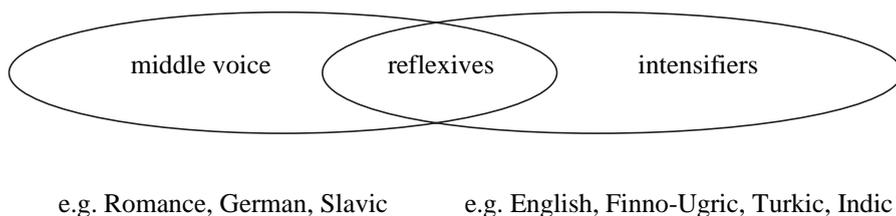
Contrary to appearances, however, linguists hardly ever use such a purely notional or cognitive basis for comparative work. After all it has never been established that there are cognitive categories totally independent from linguistic ones. As a consequence notional criteria always have to be combined with formal, linguistic ones.

(iii) If neither linguistic categories nor purely notional ones can provide an adequate basis for language comparison, what is it that provides such a solid foundation? G. Lazard, who has given much thought to such questions, speaks of intuitive, well-defined and explicitly formulated arbitrary conceptual frames (“*cadres conceptuels arbitraires*”) meeting the following requirements (Lazard 1999, 2001):

Ce qui est suggéré, c’est donc l’élaboration de bases conceptuelles explicites, fondées sur l’intuition, mais nourries de l’expérience des langues, limitées à des champs bien définis, et, naturellement, sujettes à révision à la lumière de la pratique. Il n’est pas interdit d’espérer que l’amélioration et l’extension progressives de ces constructions aboutiront à terme à établir le fondement solide d’une véritable science scientifique. (Lazard 1999: 97–98).

What does that mean for the two domains under discussion? We can take our notional characterizations as defining a prototype and we can include all examples with a similar meaning. As far as reciprocity is concerned, we could include all cases which meet the (weaker) condition of exhibiting symmetric relations between some members of a set  $A$  (i.e., rather than saying that each individual  $x$  stands in a relation  $R$  to every other individual  $y$ , it is merely required that if  $x$  stands in relation  $R$  to  $y$ , then  $y$  also stands in relation  $R$  to  $x$ ). Reflexivity can be extended to those cases of predicates with more than two arguments, two of which are instantiated by the same participant. As a next step the range of possible meanings of the forms thus identified can be assessed and patterns of polysemy can be identified. As already pointed out above, a very frequent pattern of polysemy is the use of the same form for reflexive pronouns and

intensifiers, on the one hand, and reflexives and middle markers, on the other. The intersection between these two sets in a representative sample of languages provides a solid approximation for a comparative study of reflexivity:

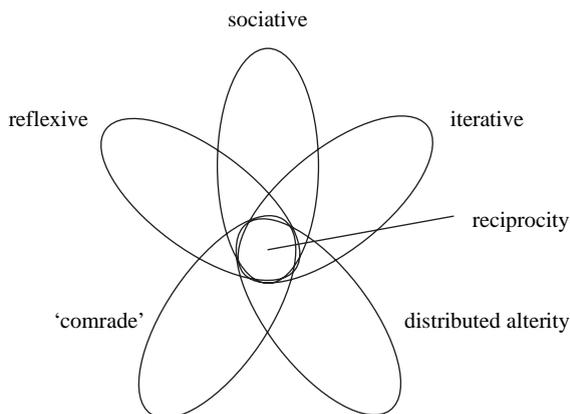


*Figure 1.* The Middle voice, reflexivity and intensifiers

This procedure of delimiting the domain of reflexivity and of developing a sound basis for comparison is confirmed by the fact that parallel patterns of polysemy and analogous intersections would be obtained for most Continental European languages, on the one hand, and for, say, Finno-Ugric, Turkic, Iranian and Indic languages, on the other (cf. König and Siemund 2005: 194 ff.). The labels used in Figure 1 for the non-reflexive uses of the relevant forms in the two groups of languages (“middle voice”, “intensifiers”) are, of course, not notional or cognitive categories either, but useful labels for a variety of uses. In the case of the “middle voice”, these uses are united by the fact that they all involve the intransitive use of a basically transitive verb. The number of such constructions may differ from language to language, but the category “middle voice” has clearly proven useful for language comparison (cf. Kemmer 1993). On the other side too, the dividing line between reflexive markers and intensifiers may be difficult to draw in some borderline cases, but it is easily possible in most cases on the basis of distribution: Intensifiers occur in adjunct positions, while reflexive markers occur in argument positions. That intersections are not completely parallel in languages illustrates Saussure’s point about the arbitrariness of the individual language system. The fact that there is a great deal of parallelism in the polysemy patterns and in the cut-off points between the different meanings points to some underlying unity in diversity.

In order to establish the foundations for a typology in the domain of reciprocity, we can also proceed by identifying recurrent patterns of polysemy associated with the forms encoding our prototype of a reciprocal construction in various languages. Such investigations have shown that three patterns of grammaticalized (mostly verbal) reciprocals are wide-spread across the globe: (i) reflexive–reciprocal, (ii) reciprocal–sociative and (iii) reciprocal–iterative (Nedjalkov 2007a: 17). Among the non-verbal strategies, there is a close relationship

between reciprocity on the one hand, and the lexical domains of “distributed alterity” (*one . . . another*) and the meanings ‘comrade, friend’ on the other (cf. Diagram 1; see also Heine and Miyashita this volume). Again, the intersection of such patterns will provide a sound basis for comparison, since it is based on widely attested patterns of polysemy.



*Diagram 1.* Patterns of polysemy in the domain of reciprocity

## 5. Questions addressed in this volume

The central objective of this volume is to offer a synopsis of the most central issues relating to the encoding of reciprocity and reflexivity across languages. In pursuing this goal the volume brings together in-depth studies of individual languages or small groups of languages and large-scale cross-linguistic studies. Given that much of the work done on reciprocals has been based on analogous phenomena from the domain of reflexivity, and given the tight synchronic as well as diachronic connection between reciprocals and reflexives, this is done from the perspective of research into reflexivity. Our volume is intended to both summarize the state of the art and suggest possible directions for future research. The questions the contributors were asked to address include the following:

- (i) How can we develop a simple and at the same time adequate typology for reciprocals – in analogy to the one developed by Faltz (1977/1985) for reflexives – that is based on morpho-syntactic types and allows for the formulation of implicational connections between those types and other variant properties?

- (ii) Can we develop a typology purely on the basis of historical processes of grammaticalization?
- (iii) How much overlap do we find between markers of reflexivity and markers of reciprocity in the languages of the world? Which direction of change do we find for the two uses, only “reflexive > reciprocal” or also “reciprocal > reflexive”?
- (iv) How can the argument structure of reciprocal predicates be analyzed, and how much cross-linguistic variation is there? Can a typology of reciprocals be based on aspects of argument structure?
- (v) To what extent are semantic properties of situations reflected in the argument structure of reciprocal predicates?
- (vi) How do situation types and structural properties of reciprocal constructions interact with verb meanings, and which role do inherently symmetric predicates such as *meet* or *marry* play in the encoding of reciprocity?
- (vii) To what extent can recent theories of binding be applied to reciprocal structures? Does recent work on reciprocity shed any light on research into reflexivity?

Given that all contributions necessarily address more than one of those questions, the following introductory survey is organized around four central dimensions of analysis, rather than simply presenting the contributions one by one: (i) ways of capturing the structural and semantic variation in the domain of reciprocity (Section 6), (ii) the relationship between reciprocity and reflexivity (Section 7), issues of argument structure and situation types (Section 8), and the treatment of reciprocity in Binding Theory (Section 9).

## 6. Typological approaches to reflexivity and reciprocity

### 6.1. Towards a structural typology

It is one of the most important and, at the same time, most challenging tasks of any theory of reciprocity or reflexivity to set up a formal typology. While a number of pertinent proposals have been made for the domain of reflexivity (starting with Faltz 1977/1985), little attention has been given so far to typologies of reciprocal markers. A first attempt at such a typology was made by E. König and S. Kokutani in a paper that was written in 2002, but not published until 2006. The typology proposed by König and Kokutani (2006) is modelled on the one provided by Faltz (1977/1985) for reflexive markers. Faltz distinguishes three basic types of reflexive markers: (a) “NP-reflexives”, (b) “pronominal reflexives” and (c) “verbal reflexives”. NP-reflexives are further sub-classified into

“head reflexives” and “adjunct reflexives”, and pronominal reflexives split up into “true pronominal reflexives” and “fused adjunct reflexives”. This typology is displayed in Diagram 2. Faltz’s typology of reflexive markers has been very influential and has proven a valuable reference point for both formal and typological research in the domain of reflexivity.

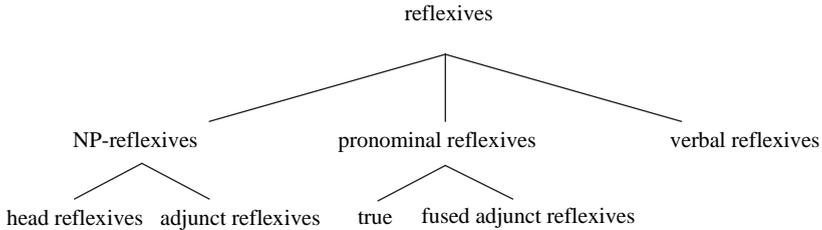


Diagram 2. Faltz’s typology of reflexive markers

In their typology of reciprocals, König and Kokutani (2006) distinguish two basic types of reciprocals: “nominal reciprocals” and “verbal reciprocals”. Among the verbal reciprocals, two sub-types are distinguished – “synthetic” and “compound reciprocals” – and nominal reciprocals are sub-classified into “pronominal” and “quantificational” strategies. This typology is shown in Diagram 3 on p. 12. Examples are given in (14)–(17) (from König and Kokutani 2006: 276):

(i) the PRONOMINAL strategy

(14) German

*Seitdem meiden sich die beiden Professoren.*  
 since.then avoid REFL/RECP the both professors  
 ‘The two professors have avoided each other ever since.’

(ii) the QUANTIFICATIONAL strategy

(15) English

*John and Pete hate each other.*

(iii) the SYNTHETIC strategy

(16) Swahili (König and Kokutani 2006: 276, referring to Ashton 1961)

*Ali na Fatuma wa-na-pend-an-a.*  
 Ali and Fatuma 3PL-PRS-love-RECP-FV  
 ‘Ali and Fatuma love each other.’

(iv) the COMPOUND strategy

(17) Mandarin (Liu 2000: 124)

*Tamen dǎ-lái-dǎ-qù.*  
 3PL beat-come-beat-go  
 ‘They beat each other.’

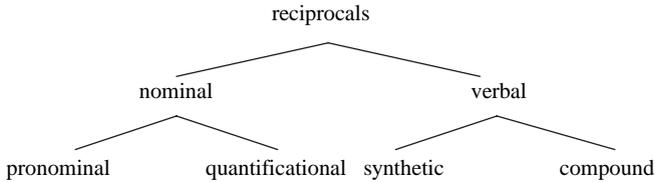


Diagram 3. The typology proposed by König and Kokutani (2006)

The typology proposed by E. König and S. Kokutani was intended as a first step towards systematizing our knowledge on the encoding of reciprocity. In the meantime, the examination of a broader range of languages has shown that the diversity of formal means used to encode reciprocity is much broader than is suggested by Diagram 3. This insight is, in itself, a first major result of typological research into reciprocity, since it shows that reciprocity and reflexivity cannot simply be treated on a par. One major difference between the two domains is that reciprocity, but not reflexivity, is often encoded by multiclausal structures. An example of such a “biclausal” strategy is given in (18):

(18) Yidiny (Dixon 1977: 380, quoted from Evans this volume: 81)

*bama:-l    ɲaɲaɲ    bun ɖa:-ɲ /    ɲayu    bama    ɖaybaɹ*  
 person-ERG    1SG.ACC    hit-PST                    1SG.ERG    man.ACC    in  
*bun    ɖa:-ɲ*  
 return    hit-PST

‘The person hit me and I hit him in return.’  
 (= ‘The person and I hit each other.’)

Consequently, more structural types need to be distinguished. Nedjalkov (2007a) makes a first distinction between “grammatical” (or “derived”, “explicit”) reciprocals on the one hand, and “lexical” reciprocals on the other (Nedjalkov 2007a: 9ff.). Grammatical reciprocals are sub-classified into three types – syntactic, morphological and clitic reciprocals – which in turn comprise seven further sub-types. The first type – syntactic reciprocals – subsumes multi-clause reciprocals and reciprocal strategies based on free markers, i.e. independent words.

Four sub-types of morphological reciprocals are distinguished, namely (i) periphrastic constructions (e.g. participle + auxiliary verb), (ii) compounds, (iii) verbal strategies (e.g. affixal ones) and (iv) verbs marked by means of reduplication. This typology is shown in Diagram 4:

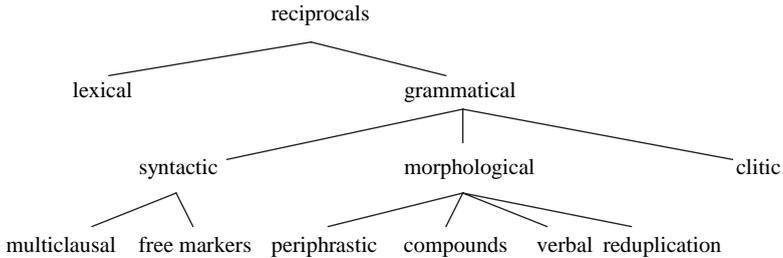


Diagram 4. Typology of Nedjalkov (2007a)

Basically the same types are classified differently by Haspelmath (2007: 2090), who proposes the typology shown in Diagram 4:

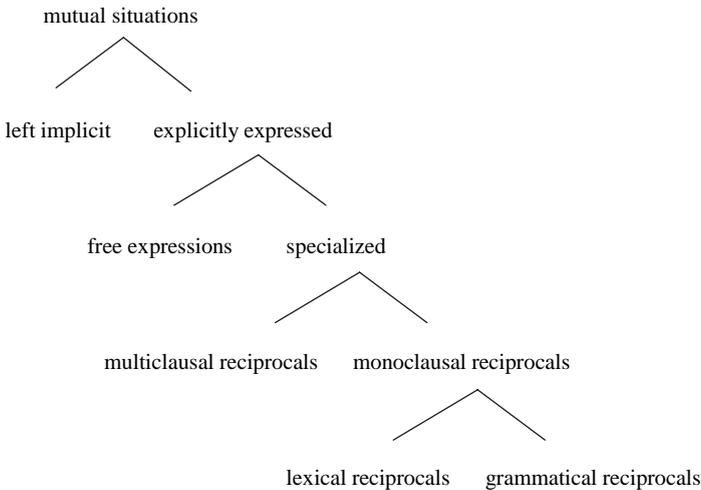


Diagram 5. Haspelmath's (2007) structural typology of reciprocal strategies

The lower levels of classification in such a structural typology of reciprocals are further elaborated by Evans (this volume). He makes a first distinction between two basic types of reciprocal strategies, viz. “single clause” strategies and “multiple clause” strategies. The group of “single clause” reciprocals contains strategies similar to those distinguished by König and Kokutani (2006),

two of the major types being identical (“NP-marking/nominal strategies” and “verb-marking/verbal strategies”). In addition to those types, Evans assumes two further major categories, which he calls the “conjunct strategy” and the “adverbial strategy”. In the conjunct strategy, the valency of a verb is simply reduced (e.g., *John and Mary kissed*), while in the “adverbial” or “modifier strategy” some adjunct like *reciprocally* or *mutually* is used to express reciprocity. Such “modifier” strategies (subsumed under the “free markers” in Nedjalkov’s typology) are used as primary strategy in Mandarin Chinese (cf. [19]):

- (19) Mandarin (Liu 2000: 124)

*Tāmen hùxiāng gōngjī.*  
 they RECP attack  
 ‘They attacked each other.’

The second major group of reciprocal markers distinguished by Evans is the one of “multiple clause” strategies. This class includes three major subtypes: (i) “conventionalized bi-clausal” reciprocals (cf. the Yidiny example given in [18] above), (ii) the “zigzag summative” construction, which involves switch-reference marking (cf. [20]), and (iii) “fused multiple predicates”, where predicates like *meet* are incorporated into a verbal stem (cf. [21]). The (higher-level) classification of Evans’ typology is summarized in Diagram 6 (Evans makes further differentiations within individual types).

- (20) Amele (Roberts 1987: 132)

*Age qet-u-do-co-b qet-u-do-co-b eig-a.*  
 3PL cut-PRED-3SG-DS-3SG cut-PRED-3SG-DS-3SG 3PL-TPST  
 ‘They cut each other.’

- (21) Japanese (Nishigauchi 1992: 157)

*John to Mary ga ai-si-au-te iru (koto).*  
 John and Mary NOM love-do-meet/RECP-DEP be that  
 ‘(that) John and Mary love each other.’

The structural variation in a specific group of languages (Oceanic) is explored by Moyse-Faurie (this volume). The various markers of reciprocity seem to derive from a common ancestor prefix of Proto-Oceanic, which has been reconstructed as *\*paRi-*, and which has a function basically corresponding to the core functions of the “middle voice”. This suffix has undergone different types of developments, thus giving rise to a wide variety of construction types, all of which are instances of the type “morphological modification of verb” in Evans’ typology (Diagram 3), though some of them combine verbal with non-verbal

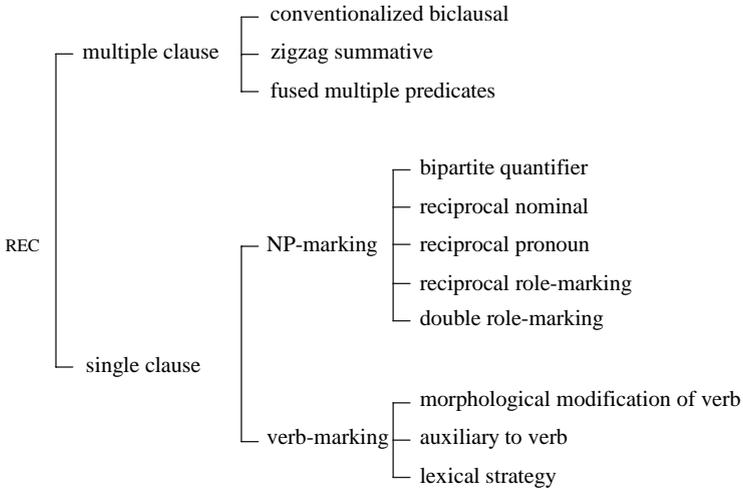


Diagram 6. Evans' typology of reciprocal markers

markers. The most important strategies of reciprocal marking can be grouped into four classes: (a) a prefix; (b) a prefix plus a suffix (or a circumfix); (c) a prefix in combination with some pronoun; and (d) a combination of (b) and (c). Particularly interesting are those constructions that combine verbal reciprocal marking with a pronominal argument. Such strategies provide two slots for the “reciprocants”, even though they are “single clause” strategies, in terms of Evans' typology, a situation which seems to be very rare among the languages of the world. A relevant example is given from Xârâgùrè in (22). The verb *pu-tia*, despite being reciprocal-marked, preserves its binary valency frame and thus takes two arguments, i.e. *pa-Mwâjoaru* (‘the Mwâjoaru’) and *nyärä* (‘they’):

- (22) Xârâgùrè (Moyses-Faurie this volume: 120)  
*pa-Mwâjoaru pu-tia nyärä nëëra*  
 COLL-Mwâjoaru RECP-separate 3PL today  
 ‘The Mwâjoaru are splitting up today.’

Strategy (d) – the “maximal” strategy of reciprocal marking, where two affixes are combined with a pronoun – can be found (with specific verbs) in Paicî (cf. [23]).

- (23) Paicî (Moyses-Faurie this volume: 121)  
*ru pi-ucâ-rî ru*  
 3DU RECP-look-TR 3DU  
 ‘They observe each other.’

Another interesting aspect of reciprocal marking in the languages of Oceania concerns the diachronic relationship between reflexives and reciprocals. Moyse-Faurie claims that the reciprocal markers of some Kanak languages have extended their territory into the reflexive domain, i.e. she posits a diachronic development of the form reciprocal > reflexive. This type of development seems to be very rare, and is even claimed to be excluded by some authors (e.g. Heine and Miyashita this volume). A relevant (unexpectedly ambiguous) example is given from Hmwaveke in (24):

(24) Hmwaveke (Moyse-Faurie this volume: 123)

*le ve-caina le*  
 3PL PREF-know 3PL  
 ‘They know each other/themselves.’

While the reciprocal markers of the languages described by Moyse-Faurie exhibit a high degree of grammaticalization, reflexives in Oceanic languages have advanced less on the scale of grammaticalization. Most of these markers also function as intensifiers, as is illustrated in the Nengone example given in (25):

(25) Nengone (Moyse-Faurie this volume: 132)

*Maria ci opodone ti bone ko*  
 Maria IMPF proud concerning 3SG INT/REFL  
 ‘Maria is proud of herself.’

## 6.2. Valency-based typologies of reciprocals

The examples from Oceanic languages provided in (22)–(24) show that distributional and morphosyntactic properties of the reciprocal markers involved (such as their syntactic category and locus of encoding) may not suffice to capture the whole range of variation in the languages of the world. For instance, given that verbal reciprocals may or may not lead to a decrease in valency, it seems necessary to consider the relationality of (derived) reciprocal predicates. Nedjalkov (2007a: 22) points out that the question of whether or not there is a change in the valency of a reciprocal-marked predicate often depends on the type of polysemy involved: markers that are used as both reflexive and reciprocal ones manifest valency reduction; markers showing reciprocal-sociative polysemy manifest valency increase (e.g. ‘*x* dances with *y*’); finally, iterative-reciprocal polysemy does not lead to any change in valency.

The criterion of valency also figures prominently in the classifications of reciprocal predicates used by Maslova (this volume) and Siloni (2001, this volume). Maslova makes a basic distinction between strategies that provide only

one morpho-syntactic slot for the “reciprocants” – the individuals participating in a reciprocal eventuality – as opposed to those strategies where two such slots are available. She terms the former strategies “unary” and the latter “binary”. The English reciprocal construction involving *each other*, for example, qualifies as “unary” in this typology, since only one morpho-syntactic slot – the subject slot – is available for the reciprocants. In the Cantonese construction in (26), by contrast, there are two argument slots, one for the speaker, and one for the referent of *kéuih* ‘he’.

(26) Cantonese (Matthews and Yip 1994: 87)

*Ngóh béi-min kéuih kéuih béi-min ngóh.*  
 I give-face him he give-face me

‘He and I respect each other.’ (lit.: ‘I give face him, he gives face me.’)

Such a valency-based typology is independent of, but not fully orthogonal to, the structural typologies of König and Kokutani (2006) and Evans (this volume). While “multiple clause strategies” are always binary (e.g., [26] above), verbal and nominal (single clause) strategies may be either unary or binary. An example of a verbal strategy that is also binary was given in (22) (from Xârâgùrè) above. (27) is another example:

(27) Tonga (Collins 1962: 74, quoted from Maslova this volume: 230)

*Joni ba-la-yand-ana amukaintu wakwe.*  
 Joni 3PL-PRS-love-RECP wife his

‘John and his wife love each other.’ (lit. ‘John mutually-loves his wife.’)

Just as in (22), two argument positions are available, even though the verb exhibits morphological reciprocal marking. This type of strategy may also be instantiated by a specific type of reciprocal which is rather widespread among European languages, i.e. the so-called “discontinuous” reciprocal constructions (described in the contributions by Dimitriadis, Rákosi and Siloni; cf. also Nedjalkov 2007a: 27ff.). The assumption that discontinuous reciprocals can be classified as “binary” is justified by the fact that the comitative phrase has the status of an argument rather than an adjunct, a point emphasized by Rákosi (this volume). A relevant (German) example is given in (28):

(28) German

*Hans schlägt sich mit Fritz.*  
 John beats REFL/RECP with Fred

‘John and Fred hit each other/fight.’

Maslova sub-classifies unary reciprocals further into (a) strategies where the valency of a verb is reduced, and (b) strategies preserving two argument slots, one of which is occupied by some fixed expression like English *each other*. Let us call strategies of the first type “verbal” and those of the second type “argumental”. Binary reciprocals are subdivided into “multiple clause” strategies and “single clause” strategies. The resulting typology can be summarized as shown in Diagram 7.

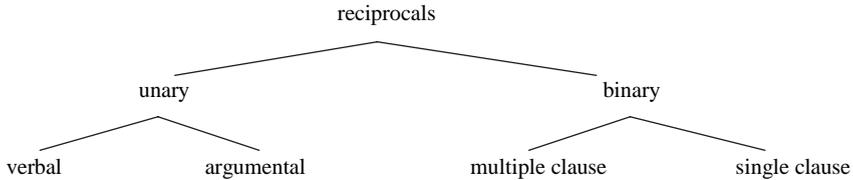


Diagram 7. Maslova’s typology of reciprocal markers

Similar parameters of classification are used by Siloni (this volume) in order to structure the domain of reciprocal marking from a cross-linguistic point of view, though under different theoretical premises. Within the larger framework of analyzing argument structure developed in joint work with Tanya Reinhart (cf. Reinhart and Siloni 2005), Siloni claims that there are two basic ways of expressing reciprocity (she does not take multiple clause strategies into account): First, languages may have quantifying strategies like Engl. *each other* or Russian *drug drug-*. A second possibility is to form “reciprocal verbs”. Siloni distinguishes two major types of reciprocal verbs, namely “inherent” ones (*mix, merge, etc.*) and “derived” ones. Derived reciprocals, in turn, may either be formed through derivation in the lexicon or in the syntactic component of grammar. The resulting typology is summarized in Diagram 8.

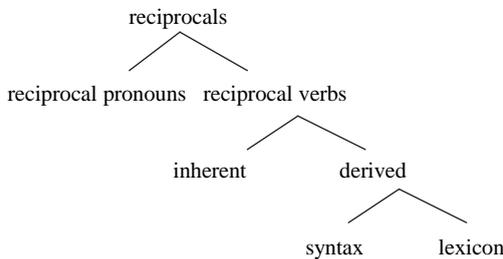


Diagram 8. Siloni’s typology of reciprocal strategies

The typology proposed by Siloni differs from the aforementioned ones in relying more on distributional, rather than morphological or morphosyntactic, properties of the relevant strategies. For instance, whether or not a given reciprocal verb qualifies as being derived in the syntax or in the lexicon can only be seen from distributional criteria such as productivity or the ability to occur in ECM-structures. As a consequence, both types of reciprocals are associated with specific clusters of distributional properties. We will return to these correlations in Section 8.

## 7. The relationship between reciprocals and reflexives

### 7.1. Reflexive-reciprocal polysemies

The typologies of reciprocals considered so far are basically independent of whether the markers involved are also used as markers of reflexivity or not. This does not mean, however, that such patterns of polysemy are irrelevant. In particular, if one takes a historical perspective it turns out that the majority of reciprocal strategies are historically related to reflexive-marking, a relationship which is also often observable synchronically. As Maslova (this volume) points out, there are three options: (a) reciprocal and reflexive markers are formally identical (“reflexive reciprocals”); (b) a reciprocal strategy contains a reflexive marker plus some additional, disambiguating, element (“reflexive-based reciprocals”); and (c) there is no formal overlap between both types of markers (“non-reflexive reciprocals”). Heine and Miyashita (this volume) distinguish five major types of reciprocals on the basis of their historical sources, which they identify by using the generic labels COMRADE, ONE ANOTHER, TOGETHER, REPETITION, and REFLEXIVE. They claim that reciprocal markers of the REFLEXIVE type (“REF-REC categories”) are invariably the result of a development from reflexives to reciprocals but not vice versa – a point which is challenged by Moysse-Faurie (this volume), cf. Section 6.1 – and estimate that about a third part of the world’s languages has markers of this type. The question arises as to why this type should be so pervasive cross-linguistically, given that reflexivity and reciprocity are two clearly different semantic domains and sometimes even contradictory (e.g. *They blamed themselves* vs. *They blamed each other*). Heine and Miyashita offer a functional explanation for the cross-linguistic pervasiveness of reflexive-reciprocal polysemies, which is based on the consideration of contextual and encyclopaedic knowledge: in interaction with specific predicate meanings ambiguities will only rarely arise. For instance, information on number and verb categorization often provides clues for the intended interpretation of a REF-REC category. The context-driven, near complementarity of reflexive and

reciprocal readings thus renders a formal distinction between the two categories redundant.

A different, though related, explanation for this widespread pattern of polysemy is offered by Maslova. Maslova points out that compositional strategies of reciprocal marking often have a very specific meaning and are thus unlikely to develop into semantically more general strategies of reciprocal marking. By contrast, a specific type of reflexive construction – “multi-participant reflexives” – which are associated with a systematic reflexive/reciprocal ambiguity, have a more general meaning and, therefore, a higher text frequency. This makes them good candidates for grammaticalization. Maslova suggests that the generality of the historical development from reflexives to reciprocals is responsible for the fact that most reciprocal strategies are unary, which is *prima facie* unexpected if one considers that reciprocal situation types are never one-participant events. She proposes an explanation based on the idea of violable constraint interaction (Optimality Theory), positing an “Obligatory Reflexive Marking” constraint (ORM). This constraint requires that unary predicates be marked reflexively. Given that it can be outranked by other constraint (e.g. ones relating to ambiguity avoidance), it is only one factor determining the variation found in the languages of the world.

## 7.2. Reciprocal and reflexive markers in German and other European languages

As has been shown, the similarity or distinctness of reciprocals and reflexives is a “genuine typological variable”, as Maslova (this volume) puts it. The variation observed cross-linguistically concerns not only the question of whether or not reciprocals and reflexives share morphological material, but also more subtle aspects of their distribution. In particular, specific forms that are used as both reciprocals and reflexives may be associated with one of the two functions in specific contexts, and with the other function in other contexts. Referring to Aikhenvald (2007), Maslova points out that the North Arawak language Baniwa of Içana has a suffix *-kawa* that indicates reciprocity in combination with plural subjects, and reflexivity when the subject is singular (cf. also Heine and Miyashita this volume on the relationship between number and the interpretation of REF-REC categories). In other words, the two readings of the marker are in complementary distribution. A similar, though less clear cut differentiation can be observed in German and is described by Gast and Haas (this volume). The anaphor *sich* exhibits reflexive-reciprocal polysemy, but this polysemy is restricted to certain contexts. In other words, there is overlapping distribution between the reflexive and reciprocal readings of this pronoun: it has reflexive

readings in all types of contexts and reciprocal ones only in a subset of the contexts licensing reflexive readings. In particular, *sich* has reciprocal interpretations in non-prepositional argument positions, but not in prepositional phrases. This is illustrated in (29) and (30).

(29) German

*Hans und Fritz vertrauen sich.*

Hans and Fritz trust ANPH

‘Hans and Fritz trust each other/\*themselves.’

(30) *Hans und Fritz vertrauen* [PP *auf sich*].

Hans and Fritz trust on ANPH

‘Hans and Fritz rely on themselves/\*each other.’

In prepositional phrases, the explicit reciprocal marker *einander* is most commonly used to express reciprocity:

(31) *Hans und Fritz vertrauen* [PP *auf-einander*].

Hans and Fritz trust ON-RECP

‘Hans and Fritz rely on each other/\*themselves.’

Gast and Haas (this volume) argue that the distributional contrast illustrated in (29) and (30) above is directly related to a corresponding phonological asymmetry: only unstressed occurrences of *sich* can have a reciprocal interpretation. Accordingly, they make a distinction between two types of *sich*, one of which may be stressed while the other is always unstressed. Drawing on parallel differentiations made in Romance and Scandinavian languages, they argue that there is (i) a “clitic *sich*” with the function of a (quasi-derivational) middle marker (reciprocity being one of the possible meanings), and (ii) a “pronominal *sich*”, i.e. an element of category NP which functions only as a reflexive anaphor. The distributional restriction of *sich* to non-prepositional argument positions consequently follows from intrinsic properties of the two types of *sich*: Clitic *sich* being restricted to (non-prepositional) argument positions, only pronominal *sich* can occur in prepositional phrases. Pronominal *sich* cannot express reciprocity, however. Gast and Haas also offer an explanation for the historical development that gave rise to this situation. The scenario they sketch differs from the one given by Heine and Miyashita and Maslova for reflexive/reciprocal polysemies in general. According to Gast and Haas, reciprocal readings of *sich* have not resulted from reanalysis of “collective reflexivity” but represent one sub-case of middle readings of *sich*. A development of the type assumed by Heine and Miyashita and Maslova is not ruled out, but it is argued that such developments

could only account for the distributional facts of languages whose anaphors can be used as markers of reciprocity irrespective of their syntactic position. This situation is found in Polish and some other Slavonic languages.

The distribution of reflexive and reciprocal markers in the Bavarian dialect of German differs from the situation in Standard German, according to Plank (this volume). Just as in Standard German, the pronominal *se* ( $\cong$  Standard German *sich*) can only occur in an argument position when it is used as a marker of reciprocity. However, unlike in Standard German, the reciprocal marker *ànand* is distributionally restricted to complement positions within a PP. In other words, the two expressions (reciprocal *se* and reciprocal *ànand*) are in complementary distribution. Plank points out that such a distributional restriction on pronominal elements to peripheral sentence positions is rather unexpected. He approaches this puzzle by considering the historical development of bipartite reciprocals such as *ànand*, arguing that such reciprocal markers are not primarily referential expressions. Rather, they focus on the “relational” aspects of reciprocity, i.e. the internal constituency of a situation, and the mapping from referents to thematic roles. As such “relational” elements they can be expected to exhibit an adverbial-like behaviour. Generalizing from the German facts, Plank even concludes that reciprocals of the bipartite type should generally be expected to have adverbial-like properties rather than being (quasi-)referential elements of category NP.

### 7.3. Reflexivity and reciprocity as epiphenomena of other voice categories

As the facts considered above show, languages cannot always be easily classified as exhibiting (i) formal identity, (ii) formal overlap or (iii) formal differentiation of reflexive and reciprocal markers. German *sich*, for instance, appears to be a classic instance of reflexive-reciprocal polysemy, but this polysemy can be observed only in non-prepositional argument positions. A different type of complication arises when we consider languages that not only fail to make a categorical distinction between reflexives and reciprocals, but even seem to have no dedicated strategy of either reciprocal or reflexive marking at all. This situation is described for Kuuk Thayorre by A. Gaby. In this Paman language there is no one-to-one correspondence between the semantic domains of reciprocity and reflexivity, on the one hand, and specific formal markers, on the other. At first glance, Kuuk Thayorre seems to make a formal distinction between one reciprocal suffix (*-rr*) and one reflexive suffix (*-e*). However, on closer inspection it turns out that this bi-partition is a simplification, since *-rr* is sometimes used in reflexive contexts as well, and that *-e* is also used as a marker of reflexivity. Gaby re-examines the function of these two affixes from the perspective of this (apparent) form-function mismatch and comes to the conclusion that neither of the

two markers is specialized for reciprocity or reflexivity. Rather, both markers are associated with a range of meanings that overlap considerably with either reciprocity (*-rr*) or reflexivity (*-e*), without, however, being fully co-extensive with those domains. Gaby isolates four sub-meanings for the suffix *-rr* (“core reciprocal”, “co-participation”, “asymmetric” and “pluractional”), and five uses of *-e* (“core reflexive”, “partitive object”, “collective reflexive”, “medio-passive” and “deagentive”). On the basis of these classifications, she concludes that the “reflexive suffix” *-e* correlates with low agentivity, actor backgrounding and one-participant events, while the “reciprocal suffix” *-rr* is associated with high agentivity, undergoer backgrounding and plurality of sub-events. According to this analysis, Kuuk Thayorre does not have specialized markers of either reflexivity or reciprocity, but encodes concepts that are closely related to these meanings in terms of their situation-semantic implications. Reflexive or reciprocal readings emerge as a result of the interaction between these concepts and contextual information.

The absence of a specialized reciprocal marker is also reported by Creissels and Nougier-Voisin (this volume) for Wolof. While Wolof has an unambiguous way of expressing reflexivity – a reflexive noun *-bopp* with the literal meaning ‘head’ – no single marker of reciprocity can easily be identified. Creissels and Nougier-Voisin present an overview of the functions displayed by a family of affixes, which they claim to be historically related. They show that some of the relevant functions, diverse though they are, can be related to a common denominator, namely the notion of “co-participation”, which embraces situations with a plurality of participants that are not assigned distinct semantic roles. Creissels and Nougier-Voisin distinguish three types of co-participation: “unspecific co-participation”, “parallel co-participation” (roughly equivalent to situations with a “comitative” or “sociative” argument), and “reciprocal co-participation”. More or less as in Kuuk Thayorre, reciprocity is not represented as a grammatical category in Wolof but emerges as a result of the interaction between verb meanings, on the one hand, and a rather general grammatical meaning (“co-participation”), on the other.

## 8. Reciprocity, argument structure and situation types

As is well known (e.g. Dalrymple et al. 1998, Dimitriadis this volume, Maslova this volume), reciprocal situation types vary with respect to several semantic parameters such as the number of participants, the numbers of relations instantiated, the presence or absence of symmetry, etc. Given that these parameters are partially orthogonal to each other, and given that the number of reciprocants

is theoretically infinite, the number of reciprocal situation types is likewise infinite. Obviously, however, not all differences between situation types are encoded in natural languages. Maslova (this volume) proposes to distinguish four types of reciprocity which seem to be reflected linguistically in some languages of the world (some of the labels assigned to the readings are our own): (i) “binary conjunctive reciprocity” (RECP<sup>&</sup>), where a symmetric relation *R* is instantiated twice between two participants *a* and *b* (*Masha and Vanya noticed each other*); (ii) “single-event symmetry” (RECP<sup>S</sup>), where two instantiations of a relation *R* are conceived of as a single event (*Masha and Vanya kissed*); (iii) “strong reciprocity”, where each member of a given set interacts symmetrically with every other member of that set (*Each of them knew all the others well*); (iv) “weak reciprocity”, which subsumes situations in which a given relation *R* is multiply (but non-exhaustively) instantiated within a given set without showing symmetry (RECP<sup>~</sup>). As noticed above, these semantic subtypes of reciprocity are relevant because they are often distinguished linguistically. For instance, “distributed strategies” of reciprocal marking are typically restricted to the expression of strong reciprocity (*Each of them knew the others well*), while reciprocals that are also used as markers of reflexivity usually also have “weakly reciprocal” readings.

The internal constituency of a reciprocal situation schema always depends on inherent semantic properties of the relevant predicate. This aspect of interpretation is addressed by A. Dimitriadis. Dimitriadis shows that a specific class of predicates, which he calls “irreducibly symmetric”, displays special properties in the context of reciprocity. Predicates are called “irreducibly symmetric” when they “can only describe individual events that are themselves symmetric for the two participants involved” (Dimitriadis this volume: 376), e.g. *meet* and *marry*. One of the most salient distributional characteristics of these predicates is that they allow certain strategies of reciprocal marking that are not allowed with the other types. For example, “null reciprocalization” in English applies to *meet*, *marry*, *divorce* etc., but not to *see* or *hate* (*\*They saw*, *\*They hated*). Similarly, verbal strategies like the middle voice in Greek (cf. [32]) or the related “discontinuous reciprocal construction” (cf. [33]) are possible only with irreducibly symmetric predicates:

## (32) Modern Greek

*O Giannis kje i Maria filithikan.*

the John and the Maria kissed.MID/RECP.PL

‘John and Mary kissed.’

- (33) *O Giannis filithike me ti Maria.*  
 the John kissed.MID/RECP.SG with the Maria  
 ‘John and Mary kissed each other.’

As the examples in (32) and (33) show, the same situation type (“one-event symmetry”) can be expressed in two different ways (note that the two constructions are not synonymous when more than two reciprocants are involved; cf. Dimitriadis this volume). This is also illustrated by the Hungarian examples in (34) and (35). Rákosi (this volume) compares the relationship between pairs like those in (32)/(33) and (34)/(35) to the one between inherent and non-inherent reflexives as illustrated in the English examples in (36) and (37):

- (34) Hungarian (Rákosi this volume: 412, 419)  
*Péter és Anna csókol-óz-t-ak.*  
 Peter and Anna kiss-RSUF-PST-3PL  
 ‘Peter and Anna were involved in a mutual kissing activity.’
- (35) *Péter csókol-óz-ott Anná-val.*  
 Peter kiss-RSUF-PST Anna-with  
 ‘Peter was involved in a mutual kissing activity with Anna.’
- (36) *Peter shaved.*
- (37) *Peter shaved himself.*

According to Rákosi, what inherent reciprocals and reflexives have in common is that both are systematically related to binary alternates. The main difference in terms of argument structure concerns the semantic role of the second argument: while binary reflexives take a Patient as their second argument (which is conceived of as a prototypical notion in the tradition of Dowty 1991), reciprocals subcategorize for a “Partner”-argument, i.e. a “secondary agent”. The Partner-role is instantiated by the comitative phrase in discontinuous reciprocals. This analysis, presented within the framework of Lexical Functional Grammar, is supported by tests for unaccusativity and unergativity: while inherent reflexives in Hungarian show features of both unaccusativity and unergativity, reciprocals behave more like unergatives, which points to an agent-like status of both underlying arguments.

This point is also addressed by Siloni (this volume), who presents a number of tests such as inversion and modification of possessed datives in Hebrew, *encliticization* in French, the genitive of negation in Russian, etc. to show that reciprocal verbs are unergative. According to Siloni, “reciprocalization is a universal operation that associates two roles with one – external – argument . . .” (Siloni

this volume: 461). Referring to earlier work by herself and Tanya Reinhart (Siloni 2001, Reinhart and Siloni 2005), Siloni argues that this operation may apply either in the lexicon, or in the syntactic component of the grammar (cf. Section 6.2. above). Depending on where reciprocalization applies (syntax vs. lexicon), the relevant reciprocal verbs are claimed to exhibit specific properties, in particular: (i) syntactic reciprocals are fully productive whereas lexical reciprocals have only limited productivity; (ii) only syntactic reciprocals can be formed with exceptional case marking structures (ECM); (iii) unlike syntactic reciprocals, lexical reciprocals sometimes do not have a non-reciprocal transitive counterpart; (iv) lexical, but not syntactic, reciprocals often undergo semantic specialization (“semantic drift”); (v) lexical reciprocals are often idiomatic; and (vi) with ditransitive predicates, only syntactic reciprocals allow the realization of an accusative if reciprocalization eliminates the indirect object. Moreover, Siloni shows that only lexical reciprocals can function as an input to nominalization.

## 9. Reflexivity, reciprocity and Binding Theory

In early generative grammar, reciprocals like *each other* were treated on a par with reflexive markers like *-self* insofar as both types of expressions were subsumed under the notion “anaphor” (e.g. Chomsky 1981, 1986). In the meantime, great progress has been made in our understanding of anaphors like *himself*, and the traditional Binding Theory has been subject to various types of revisions, most notably in the “modular approach” developed by Reinhart and Reuland (1993). Reciprocals on the other hand, were largely exempt from further consideration. After two decades of intensive research on reflexive binding, it is therefore certainly legitimate to raise the question to what extent the models and theories accounting for the grammar of reflexive anaphors can be transferred to markers of reciprocity.

In his contribution to this volume, Reuland addresses this question against the background of a comprehensive assessment of advances made in research on (syntactic and semantic) binding and reflexivity (Chomsky 1981, 1986; Reinhart and Reuland 1993; Reuland 2001). He considers two major approaches to a syntactic and semantic analysis of reciprocity: first, reciprocals may be regarded as two-place predicates (Dalrymple et al. 1998), and second, they may be analyzed as complex expressions that involve (overt or covert) movement (cf. Heim, Lasnik and May 1991). The analysis of Dalrymple et al. (1998), who regard reciprocals as operators that take a (binary) predicate and a set of entities (a plural subject) as their arguments, does not involve “binding” as defined by Reuland and should probably be treated as a derivation-like process. Heim,

Lasnik and May (1991), by contrast, take it that reciprocals such as *each other* undergo LF-movement, so the quantifier *each* binds a trace in a c-commanded syntactic position (at LF). As Reuland points out, this analysis does in fact involve binding in a both semantic and (covertly) syntactic sense. However, a movement analysis as advocated by Heim, Lasnik and May (1991) faces the problem that it is sometimes incompatible with the interpretation of reciprocal sentences. The problem is that *each other* allows for weaker interpretations than the “distributed strategy” (*each ... the other*), which is typically used to express strong reciprocity (cf. above for a similar point made by Maslova).

The analyses provided by Dalrymple et al. (1998), on the one hand, and Heim, Lasnik and May (1991), on the other, show that there are various ways of modelling the encoding of reciprocity semantically and syntactically. It is feasible, of course, that one of the two analyses is more appropriate for some markers while the other is applicable to others. In other words, rather than dealing with two alternative ways of analyzing a given construction, we may be dealing with different constructions. If formal aspects of analysis are regarded as (potentially) mirroring parameters of cross-linguistic variation, typologies of reflexives and reciprocals can thus be enriched further. Reuland proposes to include parameters like the following in a typology of reflexives: Is reflexivity encoded as an operation on argument structure or not? How is reflexive-marking licensed? Are the relevant elements referentially dependent or not? In what way does a reflexive marker enforce a reflexive interpretation of a predicate? Such questions are relevant to a typology of reciprocal markers as well.

The parameters of variation used in typologies of reciprocals, however, cannot be completely parallel to those used in a typology of reflexives. For instance, as was pointed out in Section 6.1, reciprocals display a wider range of formal types. A second difference concerns the “binding domain”: while reflexive anaphors exhibit different types of locality requirements, reciprocals are usually, and maybe universally, local. This point is addressed by Everaert (this volume). Everaert discusses some theoretical proposals accounting for this difference, while still maintaining a parallelism between reflexive and reciprocal anaphors. As a tentative explanation, he considers analyzing reciprocals similarly to complex reflexives such as English *himself* or Dutch *zichzelf*, which are also usually barred from being long-distance bound. However, Everaert also points out that it is far from clear whether reciprocals are really universally local in their binding domain. Both empirical and theoretical studies on the locality behaviour of reciprocals seem to be a major desideratum for future research.

Cole et al. (this volume) present an analysis of the locality behaviour displayed by the (reflexive) anaphor *awake dheen* from Peranakan Javanese. On the basis of a distributional analysis, they propose that *awake dheen* is not specified

in the lexicon as either an anaphor or a pronoun and that it is therefore insensitive to the binding conditions. Being unspecified, it can be bound by, or co-refer with, different types of antecedents, but it cannot itself bind an R-expression. As the authors point out, this analysis challenges the universality of the Binding Theory, but not the Binding Principles themselves. They can, in fact, be regarded as being operative in Perakan Javanese, but given that *awake dheen* is underspecified with regard to the features [ $\pm$  anaphor] and [ $\pm$  pronoun], they do not have an effect on the distribution of this item.

That binding principles à la Chomsky cannot be the only factor determining the distribution of pronominals is also shown by Zribi-Hertz (this volume). In a contrastive study on English *self*-forms and French *lui(-même)*, Zribi-Hertz relates the distributional properties of pronominals to their prosodic properties. While prosodically (relatively) weak pronouns such as English *him* or French clitics (*se*, *le*, etc.) tend to display strict non-local restrictions of the type of Chomsky's Condition B, such restrictions develop less easily with (relatively) strong pronouns such as French *lui*, which cannot be deaccented and may be locally bound when occurring within a PP. Zribi-Hertz thus shows that the consideration of aspects other than the "featural make-up" of pronouns is certainly an aspect of analysis that deserves more attention in future research.

## 10. Editorial Note

All contributions to this volume use the same set of glosses in examples (cf. the list of abbreviations on p. VII–X). The glosses do therefore not always correspond with the glosses given in the sources indicated for each example.

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# Reciprocal constructions: Towards a structural typology

*Nicholas Evans*

No doubt he would have said he divided the world into two parts:  
a public part,  
usually involving people and the things they do with – or, rather to – each  
other;  
and another part,  
in which the world was simply itself.  
Cees Nooteboom, *All Souls' Day*, p. 170<sup>1</sup>

## 1. Introduction<sup>2</sup>

Reciprocal constructions arguably denote the most complex event type to be expressed in most languages by regular grammatical means. A clause like *John and Mary love / chase each other* is generally said to represent at least two propositions – John loves Mary, and Mary loves John – and it is not unreasonable to argue that many reciprocal examples, at least, include a third one-place predicate with a conjoint subject, along the lines of *John and Mary do this together*. Even

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1. I cite the English translation here rather than the Dutch original, because for whatever reason it makes a clearer equation of the public part with reciprocity. The Dutch original (Nooteboom 1998: 207) is ‘Det hij de wereld scheidde in een openbare wereld, *die meestal met mensen te maken had en wat die deden, or beter gezegd, elkaar aandeden*, en een andere, waarin de wereld, zoals hij jet noemde, van zichzelf was’; a literal translation of the italicized part would be ‘which mostly had to do with people and what they did, or rather, did to each other’. The German translation follows this formulation: ‘Daß er die Welt in eine öffentliche Welt aufteilte, *die meist mit Menschen zu tun hatte und dem, was sie taten, oder, besser gesagt, was sie einander antaten*, und eine andere, in der die Welt, wie er es nannte, sich selbst gehört’ (Nooteboom 1999: 195–196).

2. I would like to thank Ekkehart König and Volker Gast, as organisers of the workshop *Reciprocity and Reflexivity – Description, Typology and Theory*, for their kind invitation (and subsequent comments on drafts), and to the participants at that workshop for their discussion and comments. I am also grateful to the participants in the following



of solutions to the encoding of mutual events by reciprocal constructions. These solutions are by no means equally common among the world's languages, and the four commonest construction types – quantificational, pronominal, affixal and “deverbal” – have recently been systematized in an important article by König and Kokutani (2006). However, there are in fact a range of other typological options not considered in that paper, creating the need for a more comprehensive survey. It is the goal of this chapter to develop a structural typology of reciprocal constructions that does justice to the full diversity found with reciprocal constructions cross-linguistically.<sup>4</sup>

In Section 2 I carry out some initial ground-clearing, in order to focus the inquiry more clearly. The main part of the paper is in Section 3 and Section 4, where I elaborate and exemplify the various types of reciprocal construction found across languages, discussing monoclausal strategies in Section 3 and multiclausal or multipredicate strategies in Section 4. In Section 5 I conclude by reviewing some widespread hypotheses regarding various typological correlations in the domain of reciprocals, and suggest future lines of investigation.

## 2. Some preliminaries

To qualify for inclusion in this survey, a construction must have a sense conventionalized for the expression of *mutual* situations. Following Haspelmath (2007: 2088) I define a mutual situation as one “with two or more participants (A, B, . . .) in which for at least two of the participants A and B, the relation between A and B is the same as the relation between B and A.” The term “reciprocal”, then, refers to a type of construction, not a type of meaning.

The units for which the typology is being developed are *constructions* – conventionalized triplets linking a meaning with a signifier and a combinatorics. The signifier may be a *complex sign*, e.g. it may involve more than one clause, or the chaining of two or more verbs within a clause. All that matters is that it is *specialized for* and *conventionalized for* the expression of mutual situations.

The focus on “construction” rather than, for example, “morpheme”, makes particular sense here because reciprocal constructions in many languages are complex, involving, for example, an affix plus a change in valency, or the chaining together of more than one verb. However, insofar as constructions may involve several coordinated signs (e.g. valence change plus adverb, or predicate

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4. I hasten to point out, however, that I have consulted fewer than 200 language descriptions for the material presented here, so it is almost certain that the other 6,000 or so languages of the world contain some surprises that will require further elaborations to this scheme.

affix plus valence change, or a combination of prefix plus suffix) there will be a huge number of composite sign types. The only way to reduce the number to manageable dimensions is therefore to look at the individual components and I do this below, except for a few unusual cases where the construction forms a complex gestalt not readily reducible to smaller elements.<sup>5</sup> Because of the large number of individual components involved, we cannot, in this paper, systematically examine configurations of individual components to see what goes together and what doesn't – this is a task for future research – though we will make some remarks in passing about particularly common groupings, or about components that have been said to co-occur, but which the larger survey we conduct here reveals not to.

Finally, note my uses of the terms “specialized for” and “conventionalized for”. By “specialized for” I mean that at least one of the senses denotes mutual situations of the type discussed above. This does not exclude the possibility that the construction exhibits form sharing – polysemy or heterosemy<sup>6</sup> – with one or another of the meanings that frequently participate in relations with reciprocal constructions: reflexive, comitative/sociative, iterative, distributive, random motion, brother/fellow terms, substitutive, etc. Normally one can find some combinatoric difference, more or less subtle, that correlates with the different senses: see Davies (2000), for example, for nice arguments that both reciprocal constructions in Madurese are heterosemous with another, semantically-related construction, namely the iterative and the distributive. In this chapter I will proceed on the assumption that it is irrelevant to our typology of reciprocal constructions what other senses the construction may exhibit. Verbal affixes, for example, may (among others) be monosemous reciprocals (Kayardild, Chicheŵa); or may participate in reciprocal/reflexive polysemies (Biniŋ Gun-wok), among many others. And reflexive/reciprocal polysemies, conversely, are not only found with verbal affixes but also occur with, among others, pronominal affixes (Romance

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5. For example, in Olutec (Zavala forthcoming) reciprocals are formed by combining a reciprocal/reflexive and an inverse affix on the verb, together with a plural subject, and valency reduction. All the elements of this construction are familiar – verbal affixes, valency reduction, and the conjunction of reciprocants into a single plural subject. But as a complex sign it is, as far as I know, a unique configuration (though we need to see if it also occurs in other Mixe-Zoquean languages); it is also strange, language-internally, in being the only construction to employ the inverse marker with intransitives.

6. Following Lichtenberk (1991) and others, I employ “heterosemy” for the relations between signs which differ in their combinatorics as well as their meaning, reserving “polysemy” for the case where they differ just in meaning but have the same combinatorics.

*se, si*, etc. for example). The elaboration of a typology of polysemies in which reciprocal constructions participate is a distinct task to what we are engaged in here – see e.g. Kemmer (1993) and Knjazev (1998) on reflexive/reciprocal polysemies, and Maslova (1999) on reciprocal/sociative polysemy.

Intimately linked to the problem of polysemy is the possibility that the relevant construction, in a particular language, may not in fact be specialized for the expression of mutuality at all but may exhibit a type of monosemy that takes in mutual denotations among related others, with no evidence for a distinct sense applying just to mutual situations. For examples of arguments against postulating a specialized reciprocal category in a number of Oceanic languages, where reciprocal readings are claimed to derive from lexical and other context interacting with a monosemous “plurality of participants” reading, see Pawley (1973), Dixon (1988) and Lichtenberk (1999); see also Creissels and Nougquier-Voisin (this volume) for a rather similar analysis of several African languages in terms of a more general concept of “co-participation”. In the other direction, it may also happen that constructions sometimes claimed as reciprocals, such as the construction exemplified by German *unter sich* [among themselves/each other], should in fact be regarded as expressing a more semantically specific meaning (roughly: relations bounded within the group) rather than mutuality proper; see Gast and Haas (this volume).

In fact it is a notoriously delicate task to decide whether a monosemist analysis along such lines should be given, or whether it is better to postulate several related senses and use the more general meaning to explain why they are all expressed by a single form (i.e. as a cover term for chained meanings, rather than a single semantic invariant). In carrying out a typological survey based on reference grammars, the sad truth is that most sources will not go into a level of detail, either in their examples or in their discussion, to decide the matter. And, again, the issue is orthogonal to the goal of this paper; its prime relevance here is that none of the cells in typological space that I will discuss are established just on the basis of semantically problematic cases.

By “conventionalized for” I mean that the reading of mutuality is derived from entailment, rather than implicature; put differently, it does not depend on context, and cannot be cancelled. In many languages, implicature is a regular source of reciprocal readings, particularly with certain types of predicate such as ‘be married’, ‘quarrel’, ‘make love’, etc. when used with plural (or, better, dual) subjects. That these are mere implicatures is shown by their cancellability, as in the following joke, widely known in many different languages:<sup>7</sup>

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7. For discussion of this ambiguity see Behrens (1998: 390), who cites the fuller German version of the joke (from Kunschmann 1996: 95) in the following form: *Ein*

- (2) Receptionist at hotel, as couple checks in:

*Are you married? Sind Sie verheiratet?*Man: *Yes. Ja.*Woman: *Me too. Ich auch.*

The use of implicature to generate mutual readings is part of the overall semi-otic ecology of most, perhaps all languages. In this case, a more overt strategy, involving entailment, is an acceptable if stylistically heavy and joke-destroying alternative in both languages: *Are you married to each other? Sind Sie miteinander verheiratet?* With other predicates, implicatures of mutuality are simply unavailable. *They saw* cannot, in Modern English, mean ‘they saw one another’, though *see* could be used in this way in Shakespeare’s time (Potter 1953: 252):

- (3) a.
- Good morrow, and well met. How have ye done*

*Since last we saw in France.*

Henry VIII, I, i. 1–2

- b.
- When shall we see again?*

Cymbeline, I. i. 124.

The exact partitioning of expressive load between conventionalized reciprocal constructions that *entail* mutuality, and constructions that merely *implicate* it, varies from language to language.

In many languages with verbal affixes for expressing mutuality, such as Bininj Gun-wok (Evans 2003: 438–446), the joke in (2) is untranslatable because mutuality must always be made overt through the reciprocal(/reflexive) affix *-rre*. Our receptionist would have to ask the question shown in (4), and an attempted rephrasing as (5), without the reciprocal(/reflexive), would then mean ‘you two have got married (to others)’. Implicature, then, plays a far less important role in generating mutual readings in Bininj Gun-wok than it does in English. It is essentially confined to non-verbal predicates like *rohrok* ‘be alike’, which lack the possibility of affixation with the reciprocal/reflexive affix and which allow, when used with a non-singular subject, both mutual and non-mutual readings.

- (4) Bininj Gun-wok (own field notes)

*Nguni-ma-rr-inj?*

2DU.SBJ-marry-RR-PST.PFV

‘Are you two married to each other?’

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*Liebespaar kommt in ein Hotel und möchte ein Zweibettzimmer für eine Nacht mieten. “Sind Sie verheiratet?” “fragt der Portier streng. “Ja”, antwortet der Mann. “Ich auch”, fügt die Frau hinzu.*

- (5) *Ngurrbanbani-me-y?*  
 2DU>3DU-marry-PST.PFV  
 ‘Are you two married (to others)?’

On the other hand, there are a good number of languages which lack any specialized reciprocal construction and which allow mutual readings (among other interpretations) of ordinary pronouns, e.g. in object function. This is the case in a number of Oceanic languages of Vanuatu and New Caledonia, for example, such as Tinrin (Osumi 1995), Sa (cf. [6]) and Mwotlap (François 2005), where a clause with the structure ‘they saw them’ can include mutual interpretations in certain contexts (perhaps favoured by particular verb lexemes) alongside disjunct and reflexive interpretations. Old English appears to have been comparable; for a more subtle example see Cole et al. (this volume) on Peranakan Javanese.

- (6) Sa (own field notes)  
*ir-ben-ir*  
 3PL.SBJ-shoot-3PL.OBJ  
 (a) ‘they shot them’  
 (b) ‘they shot themselves’  
 (c) ‘they shot each other’ (most likely interpretation in some contexts)

As in all domains of grammar and lexicon, implicature is a crucial part of understanding how particular meanings evolve, since implicatures often harden into entailments through time. However, for the purposes of this article I will only consider constructions where the mutual reading is entailed rather than implicated.

## 2.1. Assumptions about what to keep separate from a constructional typology

We have already mentioned two issues that this constructional typology will not address: cases where the mutual reading is implicated rather than entailed (and hence not part of the conventional meaning of the construction), and questions of what other meanings reciprocal constructions may express (which is a question for the typology of polysemy in this semantic domain). There are a number of other assumptions, however, that we need to make clear before developing our typology.

### 2.1.1. *Semantic typology of reciprocal constructions*

The prototypical reciprocal construction denotes a situation where two participants engage, simultaneously, in mutual action (John kisses Mary, and Mary

kisses John, at the same time). But reciprocal constructions in fact extend to a broader range of situations than this. Firstly, the number of actants may be more than two – for example in a family where all five members love one another. Moving down rather than up from two, in some languages, the number of specified participants may reduce to one, in a situation where only one participant is known or of interest, as in (7); though of course, logically there have to be two participants for the action to be mutual here.

(7) Hungarian (Behrens 2007: 377)

*Liz Hurley a repülön szeretkezett.*

Liz Hurley DEF on.plane love.MID.PST.3SG.SBJ

‘Liz Hurley made love on the plane.’

In terms of temporal organization, the sub-events may be simultaneous (John and Mary stared at each other) or sequential (John and Mary massaged each other). In terms of what one might call “reciprocity saturation”, once the number of actants exceeds two there are a very large number of permutations in terms of the charting of the relations between all participants, which have been examined (mainly for English) in a number of publications, such as Langendoen (1978) and Dalrymple et al. (1998). It is rather rare, in fact, to have “strong reciprocals”, where the mutual relations hold between all members of the set, and much commoner to relax the saturation of possible interrelations in various ways, as exemplified by *the starving dogs ate one another* (“melee”, where not all mutual relations are instantiated), *the students followed one another onto the stage* (seriation) or *all the guests at the party were married to each other* (pairwise grouping into mutual relationships). Finally, even when there are just two participants some asymmetry may be tolerated: in many languages (including English, for a good number of speakers including this author) sentences like *John and Mary chased each other down the road* or *The two crocodiles were lying on top of one another* can still be used even though the relation is not mutual, e.g. John is always behind Mary, or the first crocodile is always on top of the second.

These semantic variants need to be investigated systematically: it is certainly the case that some languages distinguish simultaneous from sequential reciprocals, and dual from plural reciprocals, but there is little evidence for languages distinguishing different types of “reciprocity saturation”. Whatever the case, though, I will regard this as a different typological dimension to our enterprise here – i.e. it concerns the semantics of what we might see as different reciprocal subtypes – and not deal with them in this paper.

2.1.2. Assumptions about the word-class (part-of-speech) representing the mutual predicate

The literature on reciprocals has a long-standing bias towards focussing on verbal expressions of reciprocity. But any predicate of two or more places is in principle able to participate in reciprocal constructions: adjectives and deverbal nouns (cf. [8a,b]), nouns expressing kinship relationship, as in Kayardild (cf. [9]), employing what is usually known as a “dyad” suffix), and positionals, as in Koyukon Athapaskan (cf. [10]).

- (8) a. Italian (Levi 1985: vi)

*quasi che lo scienziato e il letterato*  
 almost that the scientist and the literary.man  
*appartenessero a due sottospecie umane diverse,*  
 belong.SBJV.PL to two subspecies human different  
*reciprocamente **alloglotte**<sub>adj.</sub>, *destinate a*  
 reciprocally speaking.different.languages destined to  
***ignorar**<sub>v.t.</sub> = *si e non **interfeconde**<sub>adj.</sub>*  
 ignore=RR and not interfertile**

- b. English translation of (8a) (Levi [transl. Rosenthal] 1989: 10)

*as if the scientist and literary man belong to two different human subspecies, **reciprocally** incomprehensible, fated to ignore each other and not apt to engage in **cross-fertilization***

- (9) Kayardild (Evans 1995:191)

*kularrin-ngarrba*  
 opposite.sex.sibling-DYAD  
 ‘pair of opposite sex siblings, pair who are each other’s opposite sex siblings, i.e. brother and sister’

- (10) Koyukon Athapaskan (Jetté and Jones 2000: 457)

*neeL-tleekk’e dodaaleslo*  
 RECP-on.top.of I.piled.them  
 ‘I piled them on top of each other.’

Our structural typology should not neglect such cases – they are, after all, constructions for expressing mutuality – which means that the definitions of structural types should ideally be made in a way that is independent of the word class of the predicate. We may wish to ask questions, for example, like “Are predicate-affixal strategies more common with verbal than with nominal predicates?” Yet

this is not possible if the strategy itself has been defined in a way that depends on the word class of the predicate.

As an example of a typology that does not detach word-class from strategy, König and Kokutani's (2006) categories "verbal strategies", "nominal strategies" and "deverbal" would be better phrased as "predicate strategies", "argument strategies" (or "actant strategies") and "depredicational strategies" to avoid biasing our typology towards just looking at those predicates that happen to be verbs. Although the typology employed in this chapter uses word-class neutral labels for the higher branches of the taxonomy, this gets more difficult once we get down to more specific sub-strategies where the specific means of linguistic encoding (e.g. clitic vs affix, noun vs pronoun) becomes important, so it has not been possible to follow this consistently; in this respect the current classification, too, is less than ideal.

Though the majority of examples cited in this article involve reciprocals whose predicate is a verb, I do where relevant mention comparable strategies with other word classes, but for reasons of space plus the less detailed descriptive materials available for non-verbal reciprocals, it has not been possible to extend the same depth of treatment to these.

### 2.1.3. *Syntactico-logical position<sup>8</sup> of NP representing reciprocants*

Reciprocants may be in a range of syntactic positions, for example subject and object ([*John and Mary*] *kissed* [*each other*]), object and oblique (*My friend introduced* [*John and Mary*] [*to each other*]), subject and possessor ([*John and Mary*] *like* [*each other's*] *children*). And of course once the relevant predicate is not a verb, other syntactic positions, such as adnominal genitives, are also possible, as in *arguments over* [*each other's*] *shortcomings*.

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8. I use the rather cumbersome term "syntactico-logical" positions because the variation we are exploring is partly a matter of logical form, and partly determined by language-specific syntax, independent of semantics and presumed ultimate logical form. For example, the difference in the treatment of direct objects and indirect objects may reflect language-specific projections from semantics into the syntactic ('seek' vs 'look for'), as may language-specific differences depending on whether the language has grammaticalized subjects, a system of ergative syntax, a Philippine-style focus system that separates topic properties from agent properties, and so forth. On the logical form side, because languages vary so much in their syntax – e.g. in how many clauses are used to express causatives, or indeed reciprocal relations – the only way we can hold our comparison at least partly constant is to characterise the elicitation sentences in terms of logical structure that is at least partly language-independent.

It is a general and well-founded assumption that the most basic and commonest combination of syntactic positions found in reciprocal constructions is subject and object of a verbal predicate. Nonetheless, the existence of other combinations means that the typology of reciprocal constructions should be based, as far as possible, on the full set of acceptable combinations. It is often the case that languages need to employ different strategies for different combinations – Kayardild uses an adverb for combinations other than subject + object or subject + indirect object, most Mayan languages can only employ the reflexive/reciprocal ‘relational noun’ for subject + object combinations, using alternative means such as adverbials for other combinations, and in the Papuan language Usan (cf. Reesink 1987) the reciprocal marker *qi-* is attached to the verb with subject + object combinations, but appears for other combinations as a separate element suffixed with a postpositional clitic. Examples of these will all be given below, but our present point is that *all* such constructions should be fed into our structural typology. This then makes it possible to treat construction type and syntactic position as independent variables in testing implicational hypotheses, such as the plausible (but so far untested) hypothesis that “if a language possesses both a predicate-affixation strategy and an adverbial strategy for forming reciprocals, then the predicate-affixation strategy will be preferred for subject + object combinations”.<sup>9</sup>

While on the topic of syntactico-logical position, I note a terminological shorthand to be used here. If I say, of a clause like *John and Mary kissed each other*, that the reciprocants are in subject and object position, I mean that they occupy subject and object positions in the corresponding pair of non-reciprocal clauses (*John kissed Mary*; *Mary kissed John*). Though I could give a different formulation here for the English sentence – namely that the conjunct phrase *John and Mary* is in subject position, and the reciprocal anaphor *each other* is in object position – it is more problematic to apply this to languages whose reciprocal constructions involve affixation to the predicate, with accompanying valency reduction, as in the Bininj Gun-wok translation *John dja Mary bani-bunjhme-rr-inj*, where the *-rr* affix marks mutuality, and the verb is intransitive. The formulation in terms of corresponding pairs of non-reciprocal clauses, on the other hand, remains applicable in Bininj Gun-wok and other comparable languages.

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9. Obviously the implicational statement would need to be made more precise in order to enable proper testing, but this version should suffice for illustrative purposes.

### 2.1.4. *Separation of defining features*

Logically independent elements should be categorized and defined separately. For example syntactic effects, such as changes to valence, should be typologized separately from type and location of exponent, e.g. verbal affix, rather than using a conjunctive category like “valence-changing verbal affix”. Otherwise one cannot see whether these features necessarily co-occur: we shall see in Section 3.2.1 that although the verbal affix is widely associated with valency reduction, there are a few languages where verbal affixes may be used to express reciprocity without any concomitant change in argument structure, and conversely we will encounter numerous other construction types that exhibit valency change.

### 2.1.5. *Semiotic ecology*

Most languages have more than one reciprocal construction, with the choice between them conditioned by a wide variety of factors such as the word-class of the reciprocal predicate (Section 2.1.2), the syntactico-logical position of the arguments (Section 2.1.3), and various other factors; see König and Kokutani (2006) for a clear discussion of these in German and Japanese. Also, as already seen, many reciprocal readings are obtained by implicature rather than the entailments associated with particular constructions. Ideally, for each language we need to establish the ecology of expressive alternatives, including those generated by pragmatics (which are particularly helpful in establishing grammaticalization pathways). Some typological correlates will apply between (a) constructions, e.g. arranged on some kind of hierarchy, and (b) the set of expressive alternatives within a language. In the current typology, however, we do not consider these questions: instead, as long as a particular construction is attested in a language as some conventionalized means of expressing mutuality, we include it here.

## 2.2. Reciprocal constructions: An overview

Before moving to a detailed exemplification and discussion of individual constructions, it is helpful to give a brief overview: see Figure 1.

Note that, in line with the remarks made in Section 2.1.2, we should not assume that the relevant predicate will necessarily be a verb (nor that the higher unit of which it forms a part will necessarily be a clause). The labelling for levels of the taxonomy is given here in two forms at the uppermost levels, e.g. NP-marking strategies and argument-marking strategies. However, at the lower levels of the taxonomy, where specific assumptions about word-class cannot be avoided, I use strategy labels that assume the mutual predicate is verbal.

- Single clause [Single proposition] (§3)
  - NP marking strategy [Argument-marking strategy] (§3.1)
    - Bipartite quantifier NP (§3.1.1)
    - Reciprocal nominal (§3.1.2)
      - Possessed
      - Unpossessed
    - Reciprocal pronoun
      - Free (§3.1.3)
        - Person-marked
        - Unmarked for person
      - Bound (§3.1.4)
        - Clitic
        - Affix
    - Reciprocal role marking on NP (§3.1.5)
    - Double role marking (§3.1.6)
  - Verb-marking strategies [Predicate-marking strategy] (§3.2)
    - Morphological modification of verb (§3.2.1)
      - Auxiliary to verb (§3.2.2)
      - Lexical strategy (§3.2.3)
  - Conjunct strategy (§3.3)
  - Adverbial strategy [modifier strategy] (§3.4)
- Multiple clauses [multiple propositions] (§4)
  - Conventionalized biclausal construction (§4.1)
  - Zigzag summative construction (§4.2)
  - Fused multiple predicates (§4.3)
    - Verb compounding with mutual predicate (§4.3.1)
    - Verb compounding with repeated one-way predicate (§4.3.2)
    - Symmetric signing (§4.3.3)
    - Fused contrastive subject (§4.3.4)

*Figure 1.* Summary of types of reciprocal construction (for canonical reciprocal involving transitive verbal base predicate)

Note also two boundary delineation problems, which we will discuss in more detail below.

Firstly clause fusion can make it difficult to decide whether we are dealing with one predicate or two: should the Japanese construction *V-au* (literally ‘V-meet’) for ‘V each other’ be treated as a multiple predicate ‘V, meeting’, or as involving a predicate affix which happens to be of verbal origin (i.e. *-au* would now be analysed as a reciprocal suffix to the verb that happens to be etymologically related to the verb ‘meet’), or as some intermediate category (which is the way I have treated it here)?

Secondly, other sorts of diachronic change can also make the delineation of types difficult, for example as possessed nouns ‘their-fellow’ turn into reciprocal pronouns inflected for person (‘3PL-REC’). Such cases will be discussed as we reach the constructions concerned.

We now pass to a consideration of each type, in turn. In Section 3 we focus on constructions at a level bounded by the clause, saving for Section 4 more complex constructions that involve two or more clauses, or which have evident origins in various types of multiclausal or multipredicate fusion.

### 3. Single clause (single predicate lexeme)

In these constructions, overwhelmingly the commonest and best known, there is just one predicate, in the sense of a single lexeme with one or more argument positions. In the commonest case this means that there is a single clause, whose predicate position is filled by a verb, but it may also be a noun, like *enemy* in *mutual enemies*, or an adjective, as with German *ähnlich* ‘similar’ in *zwei einander durchaus ähnliche Gesichter*<sup>10</sup> [two one.another thoroughly similar faces] ‘two faces thoroughly resembling each other’. Note that lexemes may comprise more than one grammatical word, as in the case of Australian languages whose verb lexemes comprise a classifying auxiliary plus an uninflecting verb.

#### 3.1. NP strategies (argument strategies)

These strategies are united by locating the reciprocal coding in the syntactic position appropriate to actants: where the mutual predicate is expressed by a verb, the element identifying the construction as reciprocal will either occupy an overt NP position (bipartite NP, equivalent-token, free reciprocal pronoun), or a bound pronominal slot on the verb or an accompanying auxiliary. In the existing terminology, a number of these distinct strategies tend to get lumped together under the general term “reciprocal pronouns”, but I believe it is useful to have a more differentiated terminology, as proposed here.

##### 3.1.1. *Bipartite NPs*

This is the type exemplified by English *each other* and its (rough) equivalents, made up of an initial element meaning either ‘each’, ‘one’ or ‘other’, plus a second “alterity” or equivalence expression meaning ‘other’ or some such.<sup>11</sup>

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10. Spiegel Nr. 9/28.2.2005: 168.

11. Such as the conventionalized use of the expressions *ish el-akhiv* ‘each ... his brother’ and *ishah el-ekhotah* ‘each ... his sister’ in Biblical Hebrew, even when describing

This has equivalents in many other European languages, possibly as a result of widespread calquing into these languages from bible translations (cf. also Plank this volume): Russian *drug druga*, French *l'un l'autre*, Italian *l'uno l'altro*, Spanish *el uno* [PREP] *el otro*, Greek *o enas ton alon*, Finnish *toinen toise* and many others. Comparable constructions are also found in many other parts of the world, such as South Asia, e.g. Tamil *oruttar*-CASE . . . *oruttar* (Asher 1982: 87, Annamalai 1999: 175). There are, however, many other parts of the world from which this type of construction is conspicuously absent, such as the entire continent of Australia.

We do not have the space here to thoroughly explore the many interesting dimensions on which such expressions may divide into further subtypes. These include the degree to which the first element can take case independently of the second,<sup>12</sup> the possibility of inflecting the component elements for gender and number in accordance with the make-up of the participant group,<sup>13</sup> and the

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entities like curtains or cherubim where the kinship meaning is not literally applicable; see, for example, Exodus 26.6 (“and you shall join (the curtains) to one other [*el-ekhotah*]”), and 37.9 (“they [the cherubim] faced one another [*el-akhiv*]”). I am grateful to Ian Tupper for bringing these examples to my attention.

12. Two clear examples where the two elements of bipartite quantifier reciprocals take case independently are
  - (a) Modern Greek, which allows examples like *enas ton allon* [one.NOM the.ACC other.ACC] if the bipartite quantifier occupies the object slot, but also *ti mjá s tin áli* [the one.ACC to the other.ACC] in expressions like *introduced them to one other*. See Joseph and Philippaki-Warbuton (1987: 85–87), who explicitly discuss the paradox of expressions which pattern syntactically like a single NP being made up of constituents taking two distinct cases;
  - (b) Lezgian (Haspelmath 1993: 415–416) where the bipartite quantifiers *čebXčebY* and *sadXsadY*, though written as a single word, comprise two elements that can bear case independently (i.e. take the case suffixes X and Y), as appropriate to the two reciprocant roles. Case combinations in his examples include Ergative + Nominative, Nominative + Postessive, Nominative + Genitive, Ergative + Superessive, Dative + Postelative, Nominative + Superessive, and Nominative + Adessive.
13. For example, in such Romance languages as French, Spanish and Italian, there is a number contrast, as shown by the choice of article (e.g. Spanish *el uno el otro* vs *los unos los otros*) and a gender contrast shown by the gender of at least the first nominal expression, and possibly the article as well (depending on the language), e.g. Spanish *el uno el otro* (group of two men) or *los unos los otros* (group of three or more, all males, or mixed) vs. *la una la otra* (group of two women) or *las unas las otras* (group of three or more women). In general the two elements of the binomial quantifier must match in number and gender, so that heterogeneous groups (e.g. a man and a woman) or groups that do not cleave in a way to yield symmetric number partitions (e.g. an

degree to which the two elements are capable of independent positioning, or have begun to merge into a single invariant word (such as Dutch *elkaar*), which is then better considered as a reciprocal pronoun (Section 3.1.3). Positioning with regard to adpositions also varies greatly from language to language. In Russian (13c) and in Italian, for example, prepositions must be interposed between the two elements,<sup>14</sup> whereas in English the preposition precedes the whole combination, even if it groups logically with the second (*with one another*) and in German the whole complex forms a single word (e.g. *miteinander*).

The terminology for words of this type is rather varied. In traditional grammar they are usually termed “reciprocal pronouns”, though here I use that term in a more narrow way for single-part expressions (Section 3.1.3), because a number of scholars have suggested that the distinction has far-reaching syntactic consequences, so that it will be easier to test these claims if the distinction is made in our typology.<sup>15</sup> In the generative tradition they are usually considered complex anaphors.<sup>16</sup> The typology in König and Kokutani (2006) terms this the “quantificational strategy”, one of the two types of “nominal strategies”, though they also include, in this category, simplex expressions resulting from fusion, such as Dutch *elkaar*.

Various tests make clear that expressions of this type pattern as NPs with respect to the syntactic rules of the language. In English, for example, these expressions can be conjoined with other NPs (11) and can take the possessive genitive (12), just like other NPs. And bipartite quantifiers are also capable of expressing case, for example in Russian *drug druga* the second element takes whatever case is appropriately assigned to the bipartite quantifier as a whole, by the verb or a governing preposition. Thus in (13a), it is assigned the accusative by the transitive verb *videt* ‘see’, while in (13b) it is assigned the dative by the

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interacting group of two acting upon one and vice versa) will be coded by balancing the gender to the default and the number to the plural. For a good discussion of this problem in Spanish see Butt and Benjamin (2004).

14. A typical Italian example, taken at random from Calvino (1964: 9) is: *senza la varietà de Italie sconosciute l'una all'altra* ‘without the variety of Italys unknown to one another’, lit. ‘unknown the one to the other’.
15. See, for example, the formulation in Reuland and Koster (1991: 6), based on earlier work by Pica (1984, 1987) and Faltz (1985), regarding “systematic differences between simplex (monomorphemic) and complex anaphors. Anaphors of the former type may be non-local, those of the latter type are always local.”
16. See Manzini (1991) for a discussion of the ways in which the two parts of the Italian expression *l'uno l'altro* may become separated under certain conditions, with the first part (*l'uno*) able to float out of the NP that it shares with *l'altro*.

semi-transitive verb *pomogat* ‘help’, and in (13c) it is assigned the accusative by the preposition *na* ‘on’ of the verb *nadeet’sja na* ‘rely on’.

- (11) businesses competing to sell their wares *to each other and consumers* (Guardian Weekly, Sept 24–30 2004:8, Trade Justice Supplement)
- (12) A new report on the state of language teaching in France and Germany shows that the grasp of *each other’s languages* is in decline. (Guardian Weekly, Feb 19–25 2004, TEFL Supplement, p. 1.)
- (13) Russian (Nedjalkov 1991:283)
- a. *Oni vide-l-i drug drug-a.*  
3PL.NOM see-PST-PL other other-ACC  
‘They saw each other.’
- b. *Oni pomoga-l-i drug drug-u.*  
3PL.NOM help-PST-PL other other-DAT  
‘They helped each other.’
- c. *Oni nadej-ut-sja drug na drug-a.*  
3PL.NOM rely.on-3PL-REFL other on other-ACC  
‘They rely on each other.’

The majority of the vast literature on the semantics of reciprocals within the formal semantic and generative traditions draws on languages in which bipartite NPs are the relevant strategy, and there have been notable claims that the complex semantic properties of reciprocal constructions derive from the morphosyntactic properties of such expressions. The most thorough working-out of this claim is Heim, Lasnik and May (1991), who propose an analysis in which a clause like (14a) has a semantic structure like (14b).

(14) a. *The cats tickled each other.*

b. Semantic structure:

distributor reciprocator scope  
 $\forall x(x \in \text{cats}) \forall y(y \in \text{cats} \ \& \ y \neq x) \text{ tickled } (x, y)$

The binomial expression *each other* itself breaks down into a part representing the “range” argument (*each* in English) and a part representing the “contrast argument” (*other*). In Logical Form, on this analysis, *each* is adjoined to the distributor, a position from which it moves, leaving a trace that accounts for restrictions on possible antecedents. Though it would lead us astray to go into the details here, the point that concerns our typology is that there is an implicitly

claimed correlation between a particular set of morphosyntactic properties (most importantly the bipartite nature of the reciprocal expression) and other properties of its syntax (its satisfaction of Binding Condition A) and semantics. Dalrymple, Mchombo and Peters (1994) argue against this claimed correlation, by showing that the same semantic properties are found in Chichewa despite its use of quite a different reciprocal construction, namely a verbal affix. However, there has yet to be a thorough testing of this claim against a wider range of languages.

### 3.1.2. *Reciprocal nominals*

In this type, one of the reciprocating argument positions is filled by an expression headed by a nominal (noun or adjective). This type is not recognized in existing typologies of reciprocal strategies, though individual descriptions sometimes overtly state that the relevant word is, morphologically, a “relational noun” (in the Mayanist literature; see e.g. England 1983: 186) or a “possessed noun” (as in Yatzachi Zapotec – see Butler 1976: 335).<sup>17</sup>

In contradistinction to the binomial quantifier strategy, there is now just one quantifying element, not two,<sup>18</sup> and in contradistinction to reciprocal pronouns, reciprocal nominals do not have their own person/number features in the way personal pronouns do. Even though, in many languages, the reciprocal nominal is marked as possessed by an element agreeing in person, number etc. with the antecedent, the reciprocal nominal itself behaves, in terms of its person features, as an invariant third person form, as illustrated by the following examples from Awakateko.

(15) Awakateko (J. Mendoza, V. Rodriguez and P. Delgado, handout)<sup>19</sup>

- a. *Ja*    *ϕ-chi-b'iy*                      *ky-iib'*                      *e'*    *xna'n.*  
 COMP ABS.3SG-ERG.3PL-hit    ERG.3PL-RECP    PL    woman  
 ‘The women fought.’

17. Though in her subsequent *Gramatica Zapoteca* she uses the term “pronombre reciproco”, i.e. reciprocal pronoun.

18. There may be difficult boundary cases here, resulting from fusion of two once-independent elements. Georgian is a good example (Hewitt 1995: 85): the reciprocal marker *ertmanet*+CASE originated as a bipartite expression ‘one-ERG second-CASE’, but is now fused into a single word suffixed for the case appropriate to the syntactic position occupied by the reciprocal marker, with the old ergative suffix still inside. Hewitt labels this a “reciprocal pronoun”, but it would be considered a “reciprocal nominal” on the definition given here.

19. “Recíprocos en Awakateko.” Paper presented at workshop “Tipología de recíprocos”, OKMA, Antigua, Guatemala, December 2004.

- b. *Ja*     $\emptyset$ -*qa-b'iy*                      *q-iib'*.  
 COMP ABS.3SG-ERG.1PL-hit ERG.1PL-RECP  
 'We hit each other.'

The nominal root *-iib'*, which is widely used to express reciprocals and reflexives in Mayan languages,<sup>20</sup> here belongs to the class of nouns prefixed for possessor, and this class most prominently includes body part nouns. (Note that here I follow the Mayanist tradition in glossing the possessor prefix as “ergative” though when attached to nominal roots it has the possessive function exemplified here). Syntactically, it patterns like other nouns, for example occupying the object slot (in fact in most Mayan languages it is restricted to mutual relations in which one role can be linked to the object position). Object (absolutive) verb agreement is fixed at third singular whatever the person of the subject, suggesting that (at least historically) the object was the noun itself (whatever its meaning once was), with the person being marked in a possessor position.<sup>21</sup>

In other languages, such as Japanese ([*o*]*tagai*), there is no evidence for the reciprocal nominal being possessed, and the lack of agreement makes it impossible to determine its person, but its syntactic characteristics are those of a noun in other crucial respects. And in some languages, such as Basque, there is no evident possessive morphology, but the agreement patterning of the reciprocal nominal is clearly that of a third person singular noun. I discuss these examples below.

While in Mayan languages the relational noun *-iib'* or its equivalents can have both reflexive and reciprocal functions, Welsh (cf. [16]) gives an initial example of a possessed noun specialized for reciprocal function; the nominal *cilydd* (which also means ‘fellow’) is marked as possessed by the preposed pronominal *w* plus initial mutation of *c* to *g*. The construction can be understood as a development from an implicit distributive of the type ‘they [each] walked past their fellow’.<sup>22</sup>

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20. See e.g. Aissen (1987) for detailed discussion of this construction in Tzotzil (whose reflexive/reciprocal marker is the relational noun *-ba*).

21. Though this statement holds for the equivalent construction in almost all Mayan languages, there is an emerging variant of Awakateko (J. Mendoza, V. Rodriguez and P. Delgado, p.c.; cf. Note 19) in which the verb marks the person and number of the object position as well as the subject, so that (15b), for example, is rendered in the more innovative variant as *Ja qo'-qa-b'iy q'iib'*, using the first person absolutive prefix *qo'* instead of the zero third singular prefix employed in the more conservative variant represented by (15b). The exact details of this emerging construction merit a more detailed investigation.

22. Tok Pisin is a language where such a structure appears to be incipient, with reciprocal readings available from ‘brother’ by implicature. The Tok Pisin translation of John

## (16) Welsh (King 1993: 103)

*Naethon      nhw gerdded yn syth      heibio i'w gilydd.*  
 AUX.3PL.PST 3PL walk      in straight past to 3PL.RECP  
 'They walked straight past each other.'

Constructions of this type draw on a range of etymological sources for the nominal root, all having to do with equivalence or permutation of other equivalents.<sup>23</sup> The San Pablo Güilá dialect of Zapotec (A. López Cruz, handout)<sup>24</sup> employs the root *sà* 'companion', whose original use is illustrated in (17a); when used as a normal noun it is preceded by the plural marker *rá* (cf. [17b]). When used as a reciprocal nominal, however, the plural marker is not employed (cf. [17c]). Note that in this dialect there are distinct forms of the possessor suffix according to whether the antecedent is a pronoun (cf. [17c]) or a full NP (cf. [17d]); this distinction is found equally among constructions with the original 'companion' meaning and those where it is used reciprocally. Alongside its "each other" type construction, Finnish has a reciprocal construction based on the root *tois-* 'other', marked with the plural, the relevant case, and a possessive suffix agreeing in person and number with the subject (cf. [18]).

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13:14 "You, then, should wash each other's feet" (GN), or "Ye also ought to wash one another's feet" (KJ) is *Orait yupela tu i mas wasim lek bilong ol brata bilong yupela*. This still allows the back translation 'so you must also wash all your brothers' feet', in addition to the reciprocal reading (Sebastian Fedden, p.c., based on work with Chris Kia; "Reciprocals in Tok Pisin." Handout for course 'Reciprocals and Lexical Typology', Dept. of Linguistics and Applied Linguistics, University of Melbourne, 2003.). There is as yet no constructional distinction that allows us to differentiate the reciprocal from a metaphorical "brother" reading.

23. Comparable constructions in two African languages are found in Koromfe (Rennison 1997: 113) and Ful (Jungraithmayr and Abu-Manga 1989: 181), which respectively use the nouns *domba* 'comrades' and *bannd-* 'relative' as reciprocal markers. In Koromfe the reciprocal noun is plural but unpossessed, while in Ful it is singular and possessed by the third person singular suffix *-um*.

24. "Reciprocidad en Zapoteco de San Pablo Güilá." Paper presented at a workshop on "Tipología de recíprocos", OKMA, Antigua, Guatemala, December 2004.

(17) Zapoteco de San Pablo Güilá (A. López Cruz 2004, handout)<sup>25</sup>

- a. *m-náa-bá*                      *sà'-bá*  
 COMP-see-3SG.SBJ companion-3SG.POSS  
 'He saw his companion.'
- b. *m-náa-bá*                      *rá sà'-bá*  
 COMP-see-3SG.SBJ PL companion-3SG.POSS  
 'He saw his companions.'
- c. *r-gíny-rábá*                      *sà'-rábá*  
 HAB-hit-3PL.FML.SBJ RECP-3PL.FML  
 'They hit each other.'
- d. *r-gíny rácontr sà'-nii'*  
 HAB-hit PL enemies RECP-3SG.POSS(full NP)  
 'The enemies hit each other.'

(18) Finnish (Mikko Salminen, p.c.)

- te tutustu-i-tte*                      *tois-i-i-nne*  
 2PL get.to.know-PST-2PL other-PL-ILL-2PL  
 'You got to know one another.'

There are also many languages which have extended a possessed root meaning 'self', basically used in reflexives, to reciprocal constructions as well, e.g. the root *immin-* in Greenlandic Eskimo (Fortescue 1984: 155–167), which may be suffixed for person and/or case. Or the etymology for the reciprocal nominal in constructions of this type may simply be unclear, as in the case of the widespread Mayan "relational nominal" root *-iib'* exemplified in (15) above for Awakateko.

Common to all the above examples is the presence of an overt possessor marker on the reciprocal nominal. It is an interesting question, deserving of further investigation, whether the antecedence requirements for this type of construction are any different from that for the floatable first element of binomial NPs – one might expect that they would parallel the antecedence requirements for (possessive) pronouns rather than lexical anaphors, but as far as I am aware no studies of individual languages have tested this possibility.

Finally, it should be noted that there are languages with reciprocal expressions that appear to behave like the other reciprocal nouns already discussed, insofar as they display noun-like morphology and trigger third person singular agreement on the verb, but which do not mark the reciprocal nominal for possession. An

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25. Cf. Note 24.

example is the Papuan language Savosavo (Wegener forthcoming), where the reciprocal marker *mapamapa*, derived from the word *mapa* ‘person’, occupies an NP slot but without any overt mark of being possessed; this language shows object agreement on the verb, and reciprocal constructions always show third person singular masculine agreement regardless of the person and number of the reciprocants. Basque is a further and better-known example: the word *elkar* and its variants *alkharr*, *alkar* and *elgar* have been variously described as a “reciprocal pronoun” (Trask 1997: 97), “reciprocal element” (Saltarelli 1988: 120) or “adverb” (Löpelmann 1968: 40). It takes case appropriate to its semantic position in the clause (it can never stand in subject position), and when it occupies the object position the auxiliary agrees with it by taking a third person form appropriate to its syntactic role, such as absolutive in (19a) and dative in (19b).

(19) Basque (Saltarelli 1988: 121)

- a. *Arantxa-k eta Mikel-ek elkar agur-tu*  
 Arantxa-ERG and Michael-ERG RECP greet-PRF

*d-ø-ut-e kale-an.*  
 3ABS-PRS-AUX-3PL.ERG street-SG.LOC

‘Arantxa and Michael have greeted each other in the street.’

- b. *Arantxa-k eta Mikel-ek elkarr-i*  
 Arantxa-ERG and Michael-ERG RECP-DAT

*d-ø-io-te maitasun-a.*  
 3ABS-PRS.AUX-3SG.DAT-3PL.ERG love-SG.ABS

‘Arantxa and Michael have love for each other.’ (Saltarelli 1988: 121)

According to Trask (1997: 197), citing Michelena (1977), this derives from \**hark-har*, “a combination of the ergative and the absolutive of the distal demonstrative stem *har*”. This would therefore be a case of an originally binomial anaphor that has fused into a single nominal root over time.

The Japanese reciprocal (*o*)*tagai* takes case-marking postpositions like regular nominals (cf. [20a]), and may be used as an adnominal genitive (cf. [20b]).

(20) Japanese (Nishigauchi 1992: 157; see also König and Kokutani 2006)

- a. *John to Mary ga otagai-o ai-shi-te iru.*  
 John and Mary NOM RECP-ACC love-do-PTCP be

‘John and Mary love each other.’

- b. *Bokutachi-wa tagai-no ketten-o yoku shit-te iru.*  
 IPL-TOP RECP-GEN fault-ACC well know-PTCP be  
 ‘We know each other’s faults very well.’

The form (*o*)*tagai* has been argued to derive by nominalization from the verb *tagau/tagawa* ‘to be contrary to, different from’ (König and Kokutani 2006). This source may account for why *otagai* fails to obey certain syntactic constraints associated with bipartite quantifiers. It is possible to have intervening subjects in the complement clause, as in (21a), and for *otagai* to occupy the subject position of a finite embedded clause (see [21b]). Attempts to attribute these differences to such features as the fact that Japanese lacks AGR (Ueda ms.) appear rather forced, and it may be that its status as a reciprocal nominal rather than a bipartite quantifier is responsible for the different syntactic behaviour here.

(21) Japanese (Nishigauchi 1992: 160)

- a. *John to Mary ga [kono jiken ga otagai-o*  
 John and Mary NOM this incident NOM RECP-ACC  
*kizu-tsuke-ta to] omot-ta (koto).*  
 wound-mark-PST that think-PST that  
 ‘John and Mary thought this incident would hurt each other.’
- b. *John to Mary ga [otagai-ga Bill o*  
 John and Mary NOM RECP-NOM Bill ACC  
*semeta to] omot-ta (koto).*  
 accused that think-PST that  
 ‘John and Mary thought each other accused Bill.’

In all of the examples discussed so far, the antecedent position is filled by a normal NP, and the reciprocal nominal occupies the reciprocant position. However, there are languages with reciprocal nominals, such as Yatzachi Zapotec (Butler 1976, 1980), where the apparent valence is reduced by one, the two reciprocant positions being fused and represented by a single reciprocal nominal. As in the San Pablo Güilá variety discussed above, the reciprocal nominal literally means ‘their companion’, ‘our companion’, etc., but unlike that variety the Yatzachi construction uses just one argument position, with no independent representation of the antecedent argument, e.g. by a verbal suffix: ‘the reciprocal construction ... contains a portmanteau realization of the subject and the possessor of an item. In the reciprocal construction, the item is the possessed noun *lRwežR* ‘fellow of’. As in the case of *kwiN* ‘self of’, the possessor of *lRwežR* may be indicated by a bound pronoun of Class I or by a following noun

phrase”<sup>26</sup> (Butler 1976: 335). A clear example is the following sentence, which has a regular transitive verb in its first clause and a reciprocal in its second:

- (22) Yatzachi Zapotec (Butler 1976: 335)

*ǰ-geʔi-neʔ            nadaʔ naʔ bito ǰ-n:e*  
 CONT-hate-3RESP me    and not CONT-speak  
*lRweʒR-toʔ*  
 RECP-IPL.EXCL.POSS

‘She hates me and we do not speak to one another.’

A rather similar case is Jarawara (Dixon 2004), where reciprocal clauses of transitive verbs are constructed by using a single argument of the form PRON + *abee~ibee* together with a transitive verb, as in (23).

- (23) Jarawara (Dixon 2004: 333)

*mee abee tao ni-ne-ke*  
 3NSG RECP shoot AUX-CONT.F-DECL.F

‘They are shooting each other.’

Dixon (2004: 333) analyses the “reciprocal marker *abee* (or *ibee*) as a type of PN [= possessed noun – N.E.] within an NP . . . that has a nsg pronoun as head.” However, he does not give any reasons for why it should be the pronoun that is the head, and the sequence is exactly what one would expect of a possessed-noun construction, as in *mee tabori* [3nsg village] ‘their village’ (p. 85, ex. 3.13). An alternative analysis would thus be to treat Jarawara as having a reciprocal nominal construction with a preceding possessive, of the Welsh type, but which reduces the valency of reciprocal clauses as in Yatzachi Zapotec.

Before concluding this section we should mention the possibility that the reciprocal noun can be incorporated into the verb, typically with a concomitant reduction in transitivity as is typical in incorporation constructions. The Papuan language Yélf Dnye (Levinson forthcoming) is a clear example. We leave aside many complexities that need not concern us here, but note that the verbal complex is made up of a proclitic, a verb and an enclitic, rather than a single word, so incorporation is within a sort of “verbal piece” rather than a single word. Compare (24a), which gives a normal transitive clause, and (24b), with the re-

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26. This suggests a possible reanalysis route by which the Yatzachi Zapotec structure arose, as a pair of adjacent NPs in a sentence like *see [fellow]<sub>O</sub> [those mules]<sub>A</sub>* was reanalysed as a complex NP containing an adnominal possessive, of the type *see [fellow [those mules]]<sub>A=O</sub>*.

iprocal nominal *numo*, which incorporates between the proclitic elements and the verb.

(24) Yélf Dnye (Levinson forthcoming)

- |    |                            |             |             |  |                            |
|----|----------------------------|-------------|-------------|--|----------------------------|
| a. | proclitic                  |             | verb        |  | enclitic                   |
|    | <i>nmî</i>                 |             | <i>vy:a</i> |  | <i>té</i>                  |
|    | IPL.IMM.PST.PNCT           |             | hit.PROX    |  | MONFOC.SBJ.3PL.OBJ.IMM.PST |
|    | ‘We hit them today.’       |             |             |  |                            |
|    |                            |             |             |  |                            |
| b. | proclitic                  | INC.NOM     | verb        |  | enclitic                   |
|    | <i>nmî</i>                 | <i>numo</i> | <i>vy:</i>  |  | <i>té</i>                  |
|    | IPL.IMM.PST.PNCT           | RECP        | hit.PROX    |  | MONFOC.SBJ.3PL.OBJ.IMM.PST |
|    | ‘We hit each other today.’ |             |             |  |                            |

Note particularly that the object agreement on the verb is third person (though plural here rather than singular as in the other languages we have been considering), as shown by the forms of the enclitic. As an illustration of how thoroughgoing third person agreement is, the verb ‘give’, which suppletes for the person of the recipient, takes the third-person recipient form in reciprocals even where the subject is first person. Note also that this example does not show detransitivization effects, but these are found with certain other tense/aspect combinations.

To conclude this section: reciprocal nominals, though not a recognized category in existing typologies of reciprocals, are surprisingly common. Their hallmarks are that the head of the relevant phrase is a noun, although it may be possessed by a pronoun, and that grammatically they are clearly treated as third person arguments, something that follows from the usual etymology of these nouns as ‘fellow’, ‘friend’, etc. Diachronically, they may originate as possessed nouns, or they may arise through fusion of the two elements of a binomial reciprocal. And another step of reanalysis – by which there is a shift from treating the nominal component as head to the pronominal component – may turn them into reciprocal pronouns, a type to which we now turn.

### 3.1.3. *Reciprocal free pronouns*

Like bipartite quantifiers and reciprocal nouns, these are distributionally equivalent to free NPs, but in contrast to them they pattern like personal pronouns in showing person/number categories directly (and not via a possessive pronoun or affix, as with some reciprocal nouns). Unlike the case with bipartite quantifiers, or with reciprocal nominals not specified for the person and number of possessor, the fact that reciprocal free pronouns have their own person/number

features means there is no need to seek an antecedent before determining their reference. In other words, they are like a regular pronoun in specifying person and number values, but have the additional semantic information that the argument they mark is a participant in a mutual action. There is no morphological evidence for considering them to be nouns synchronically, though it is likely that the etymological source for many of them is as reciprocal nouns.

Two examples of reciprocal free pronouns are the Australian language Warluwarra (cf. [25]) and the Chadic language Hausa (cf. [26], [27]). In Warluwarra these pronouns may also have a reflexive function (not shown here), particularly in the singular, but in Hausa<sup>27</sup> they are specialized to reciprocal function.<sup>28</sup>

- (25) Warluwarra (Breen forthcoming: 919)

*Warrawurla-wiya-gu wulaba danmarna.*  
dog-DU-ERG                    3DU.RR bite.PST

‘The two dogs bit one another.’

- (26) Hausa (Newman 2000: 530)

*mun tsallàkē jūnan-mù*  
IPL.AUX jumped RECP-IPL

‘We jumped over one another.’

- (27) *kù tàimàki jūnan-kù*

2PL.AUX help RECP-2PL

‘You (pl) should help one another.’

Reciprocal markers of the type exemplified by German *sich* are normally called “reflexive” and/or “reciprocal” pronouns (depending on the meaning in focus).

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27. Etymologically, the Hausa reciprocal pronouns come from *jikí* ‘body’ plus a suffix *-nà* of unknown origin (Newman 2000: 529). Heine (1999; also Heine and Miyashita this volume) points out that shifts from ‘body’ to reflexive marker and on to reciprocal marker are common in African languages, generally resulting in a marker that has both reflexive and reciprocal functions, such as Yoruba *ara won* ‘their bodies; themselves; each other’ (cf. Awoyale 1986: 11). In the Hausa case, however, there is no evidence of a reflexive reading.

28. In addition to three regular persons, Hausa has an additional fourth person form, used for example with impersonals. This can also be used as a substitute for any of the other person-specific forms, and is the preferred option when the reciprocal is an adnominal modifier such as a possessive. However, it is still possible to use the person-specific reciprocal pronouns with adnominal possessives, e.g. *Bellò dà Tankò sun dāuki hòtunàn jūnansù* ‘Bello and Tanko took each other’s photo (in turn)’ (Newman 2000: 530).

As König and Kokutani (2006) demonstrate, they can be conjoined with full NPs (28).

- (28) *Die beiden Angeklagten beschuldigten sich gegenseitig*  
 the both defendants accused REFL/REC mutually  
*und ihre Nachbarn.*  
 and their neighbours

‘The two defendants accused each other as well as their neighbours.’

Do *sich*-type reciprocals fit the definition of reciprocal pronoun given here? In contrast to the other examples discussed in this section, they do not have distinct forms for all persons: as is well-known, non-third person forms simply use the normal object form (e.g. *uns* for ‘us.OBJ’ or ‘each other’ with a first person plural subject). In contrast to the Hausa reciprocal pronouns, they are limited in their syntactic positions. They are unable, for example, to function adnominally in contexts like ‘each other’s parents’, where the binomial anaphor would be used instead (*die Eltern voneinander*). Nor can they appear in contexts where the antecedent is a non-subject, such as ‘introduced them to one another’ – see König and Kokutani (2006) for more discussion, and also Gast and Haas (this volume) for more discussion of syntactic restrictions on reciprocal *sich* in German. Reciprocal free pronouns thus appear to be a transitional case between canonical reciprocal pronouns, of the Hausa type, and bound pronominal clitics like French *se*, to be discussed in the next section.

### 3.1.4. Reciprocal bound pronouns

Here the reciprocal pronoun is bound, either as an affix or as a clitic. I deal with each in turn. It is generally the case that such bound pronouns exhibit reflexive/reciprocal polysemy, but not always: Koyukon Athapaskan (Jetté and Jones 2000) and a number of north-west Caucasian languages<sup>29</sup> have dedicated reciprocal bound pronouns.

#### 3.1.4.1. Bound reciprocal pronominal affixes

These may either be affixed to the verb itself, as in Amanalco Nahuatl (cf. [29]), or to an auxiliary base, as in Warlpiri (cf. [30]). In Nahuatl there is a single bound marker used for all persons and numbers, while in Warlpiri and many other languages there may be distinct forms for certain person/number combinations, though these are often formally identical to the regular object

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29. Including Abkhaz (see below), Adyghe (Rogava and Keresheva 1966) and Kabardian (Colarusso 1992).

forms.<sup>30</sup> What distinguishes these affixes from the verbal affixes to be discussed in Section 3.2 is that they occupy a pronominal slot, rather than a slot used for valency-changing and other derivational affixes.

(29) Nahuatl (V. Peralta Ramirez, handout)<sup>31</sup>

*Ø-mo-ma:-λan-ki:eʔkia-ʔ in sowa:-me*  
3SBJ-RR-hand-grasp-PL DET woman-PL

‘The women take each other’s teeth / grasp their own hands.’<sup>32</sup>

(30) Warlpiri (Hale, Laughren and Simpson 1995: 1437)

*Ngarrka-jarra-rlu ka-pala-nyanu paka-rni.*  
man-DU-ERG IPFV-3DU.SBJ-RR strike-NPST

‘The (two) men are striking themselves / each other.’

In at least some cases it is clear that reciprocal pronominal affixes have evolved from regular pronominal affixes. In Khoekhoe, for example, the reciprocal suffix on the verb occupies the same slot as bound object pronouns, and may have evolved from the third plural object marker, with which it is homophonous (Rapold forthcoming). A particularly interesting case is the Australian language Nyangumarta (Sharp 2004), which has two invariant reflexive/reciprocal markers occupying the object/indirect object marking slot: *-rninyi/-rninya*, used when the unidirectional verb takes a direct object, and *-rnangu/-rnanga*, used when the unidirectional verb takes an indirect object. Each of these two reciprocal markers, though synchronically invariant for person, is etymologically

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30. A further example is Tepehuano del Sur, where the first person singular and plural forms of the RR are identical to the object forms, but where there is a single form for all second and third person, singular and plural, RR objects; since this has been generalized from the 2SGO form, it is identical to the 2SGO form but distinct from the 2PL, 3SG and 3PLO forms (cf. presentation by Gabriela García Salido on “La extensión de pronombre de segunda persona objeto jum como marcador de voz media para la segunda y tercera persona en tepehuana del sur.” Paper presented at the *VIIIth Encuentro Internacional de Lingüística en el Noroeste*, 17–19 November 2004, Hermosillo, Mexico.).

31. “Recíprocos en Amanalco Nahuatl.” Paper presented at workshop “Tipología de recíprocos”, OKMA, Antigua, Guatemala, December 2004.

32. Although the pronominal affix in Nahuatl itself allows both reciprocal and reflexive readings with plural subjects, reduplication of the verb root can be used to force a reciprocal reading (V. Peralta Ramirez, handout; cf. Note 31): *Ø-mo-ha-ʔ in ičpoka-me* [3SBJ-RR-see-PL DET girl-PL] ‘the girls see themselves / each other’, but *Ø-mo-i:-ihta-ʔ in ičpoka-me* [3SBJ-RR-RDP~see-PL DET girl-PL] ‘the girls see each other’.

derived from fused subject and object pronominal affixes: *-rniny/-rninyi* from ‘1SG.SUBJ>1SG.OBJ’, and *-rnangu/-rnanga* from ‘1SG.SUBJ>2SG.DAT’.

(31) Nyangumarta (Sharp 2004: 435)

*Purlpi kulu-rnu pula-rninyi, wayarti-pa pupuka.*  
 long.time meet-NFUT 3DU.SBJ-RECP turtle-CONJ frog

‘A long time ago those two met up with each other, the turtle and the frog.’

Interestingly, there are a number of languages with bound reciprocal affixes – all in the north-west Caucasian family<sup>33</sup> – which appear to violate the otherwise robust universal that the reciprocal marker will never be lower on a scale of grammatical relations than its antecedent. Abkhaz, for example (Hewitt 1979a,b), has two reciprocal prefixes: one, *ay-* in the “Column II” slot employed for indirect objects, and another, *ayba-* (*~eyba-*), in the “Column III” slot employed for transitive subjects. The transitive subject reciprocal form *ayba-* (here glossed “RECP.A”) occurs in a number of syntactic contexts: it is “obligatory where the reciprocal relation holds between subject and object” (Hewitt 1979a: 87), as in (32a), and is also used where the relation is between the subject and indirect object (Recipient) of a ditransitive verb (cf. [32b]).<sup>34</sup> It appears, then, that the claimed unidirectionality of reciprocal binding only holds universally where the construction expressing the reciprocal involves free NP expressions, and does not hold for bound reciprocal pronominals.

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33. In addition to Abkhaz, similar facts are found in Adyghe (Rogava and Kereševa 1966, especially pages 270–277); the situation in Kabardian is more complex and does not parallel the Abkhaz/Adyghe facts (Colarusso 1992).

34. See Hewitt (1979b) for a careful marshalling of the evidence that *ayba-* occupies the transitive subject slot. There he refutes an earlier analysis by Lomtadze (1960), who argued that the prefix *eyba-* reduced the transitivity of the verb and that the absolutive prefix is the subject of such constructions. Allen’s paper also suggests, as an explanation for the Abkhaz facts, that they reflect a more general preference for the reciprocal actant marker to follow the person-specified pronoun, since the affix order in Abkhaz transitives (ABS-...-RECP-ROOT) conforms to this. To test this idea we need more information on the behaviour of reciprocals in languages that combine OS ordering and an actant-marking reciprocal strategy.

- (32) Abkhaz (Hewitt 1979a: 86)<sup>35</sup>
- a. *š<sup>o</sup>-eyba-bè-yt'*  
2O-RECP.A-see-FIN  
'You (plural) saw each other.'
- b. *a-y<sup>o</sup>ə (ø-)h-àyba-te-yt'*  
the-wine (3SG.O-)IPL.R-RECP.A-give-FIN  
'We gave the wine to each other.'

### 3.1.4.2. *Reciprocal pronominal clitics*

This pattern is familiar from the many Romance languages with reflexive/reciprocal clitics, such as French and Spanish *se*, Italian *si*, and so forth, which occupy the object clitic position and have similar distributional patterns to other clitic object pronouns, typically being preverbal in finite clauses and (in Italian and Spanish) encliticizing to the verb in nonfinite clauses and infinitives. In these languages, the normal pattern is for there to be a distinct third person marker that distinguishes disjunct from reflexive/reciprocal readings, as with Spanish *se* (vs 3<sup>rd</sup> singular masculine *lo*, 3<sup>rd</sup> singular feminine *la*, 3<sup>rd</sup> plural *los/las*), but in the other persons for there to be no distinction between disjunct and reflexive/reciprocal object forms, as with *nos* '1PL.O (disjunctive or RR)' in (33b).<sup>36</sup>

- (33) Spanish (from Allende 2000: 25)
- a. *esa pareja no dej-ó de amar-se,*  
this couple NEG stop-3SG.PST of love.INF-RR.OBJ  
*a pesar de la fuerza ciclónica de sus peleas*  
despite the force cyclonic of their arguments  
'... this couple didn't stop loving each other, despite the cyclonic force of their arguments.'

35. In this and the following example the prefixes I have glossed "O" are in fact absolutive, with the same form also used for intransitive.

36. Of course there are also languages which simply have NO special pronominal forms for reciprocals, so that object pronouns allow disjunct, reflexive or reciprocal readings according to context, as in the cases of Tinrin, Mwotlap and Sa discussed in Section 2. A possible analytic move here is to say that there are two underlying series (one of pronouns, one of anaphors) that could perhaps be teased apart by some subtle syntactic evidence, but my own analytic preference is to avoid postulating two distinct series without at least one person value being distinct (as in the Romance case), and to accept that some languages exist (especially in New Caledonia and Vanuatu) where it is analytically impossible to maintain the distinction between pronouns (free in

(33b) Spanish (Allende 1986)

- b. *Durante el tiempo que camin-amos juntos la*  
 during the time that walk-IPL.PST together the  
*mujer y yo nos ama-mos tanto que*  
 woman and I IPL.OBJ love-IPL.PST so.much that  
*ya no deseábamos separar-nos.*  
 already NEG desire.IPL.PST.IMPF separate-INF-IPL.OBJ  
 ‘During the time that we travelled together the woman and I loved  
 each other so much that we no longer wanted to separate from  
 each other.’

In other languages, however, there are distinct person-sensitive forms for reciprocal pronominal clitics. An example is Wanyi, an Australian language closely related to Garrwa (cf. [27] above), which has a full set of reflexive/reciprocal clitics differentiated for person and number, attaching to a variety of clausal elements, such as the verb in (34b). Compare (34a), a normal transitive, with (34b), a reciprocal:

(34) Wanyi (Laughren 2001: 5 & p.c.)

- a. *Daba=bula=ngaa(n) kirriya-wiya-a.*  
 hit=3DU.NOM=ISG.ACC woman-pair-ERG  
 ‘The two women hit me.’
- b. *Daba=bulangka kirriya-wiya-a muwa.ji-ni.*  
 hit=3DU.RR woman-pair-ERG/LOC jealous-ERG/LOC  
 ‘Two women are hitting each other (i.e. fighting) being jealous.’

A number of typological generalizations have been made about languages employing clitic or affix strategies.

Firstly it is generally the case that this strategy is limited as to role, namely to relations holding between a subject and another core argument. This appears to be largely true, but basically an epiphenomenon of the roles available to bound clitic or affix positions anyway, since languages with triple agreement (e.g. Abkhaz) permit the reciprocal relation to hold between object and indirect object. Note also that in Koyukon Athabaskan, where the same form-set of pronominal affixes is used on verbs for objects, and on nouns to mark possessors, the reciprocal marker, just like any other marker in the series, can be used to mark possession, e.g. ‘each other’s houses’.

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their governing category) and anaphors (bound in their governing category). See Brill (2005) for some further examples drawn from New Caledonian languages.

Secondly, Siloni (2001) has argued for a cluster of properties that go with the use of pronominal strategies; her sample employs languages which happen to use bound reciprocal pronouns, since she does not recognize free reciprocal pronouns or reciprocal nouns as types. To evaluate these would take us too far afield, but see König and Kokutani (2006) for discussion.

### 3.1.5. *Reciprocal role marking on NP*

One can conceive of a language in which special case or adpositional marking is used to mark each of the two reciprocants – attaching individually to each reciprocant NP – with a meaning like ‘as one of two reciprocating agents/patients’. *John and Mary love each other* would then be rendered as *John-RECP loves Mary-RECP*. It would also be possible to combine this with valency change and merger of the two reciprocants into a single NP, then giving [*John and Mary*]-RECP *love*. So far I have not found any clear case of a language using either of these strategies as a productive and sole exponent of reciprocal constructions. However, there are some suggestive examples that come close.

With regard to the first sub-strategy, Bangla (Dasgupta 2004) possesses a (rather limited and archaic) construction in which each argument appears in the ergative/locative, as exemplified by (35a,b).

- (35) Bangla (Dasgupta 2004: 136)
- a. *bhaie bhaie jhōgRa kōre*  
 brother.ERG/LOC brother.ERG/LOC quarrel do  
 ‘Brother fights with brother.’
- b. *rajae rajae juddho hōe*  
 king.ERG/LOC king.ERG/LOC war is  
 ‘King fights with king.’

This is the only time two distinct NPs can each take this case with a transitive verb. The canonical formulation of this strategy given above assumes that the case or adposition is dedicated to reciprocal situations. This is certainly not the case in Bangla, but since other types of reciprocal construction also often share forms with other constructions (e.g. reciprocal and reflexive) this is not a fatal problem. More seriously, the construction is heavily restricted: stylistically, it only occurs in rather archaic fixed expressions, and there is also a structural restriction that the two NPs be identical (brother & brother, king & king, etc.). For these reasons the Bangla construction is at best a marginal example of our “reciprocal role marking” cell.

With regard to the second sub-strategy, Kuuk Thaayorre (cf. also Gaby this volume) has a special nominal clitic *-nharr* that may attach to the subjects of reciprocal clauses. However, its function is not yet well understood: it appears at best to be a supplementary marker (with a verbal affix carrying out the primary signalling), and is optional rather than a core strategy.

A final unattested strategy in this cluster would involve a variant of the strategy that marks each of two NPs, leaving them in the argument position that they would occupy in a unidirectional clause, but marking them with a special article (let us call it a “reciprocal article”) instead of a case marker, employing a structure like *the*<sub><reciprocal></sub> *boy saw the*<sub><reciprocal></sub> *girl* to express ‘the boy and the girl saw each other’.<sup>37</sup>

### 3.1.6. *Double role marking on NP*

Since the reciprocants play a double role in the clause, we could also imagine a language in which the actant NPs in a reciprocal construction take two case markers, one per role. We have already seen, in our discussion of binominal quantifiers, that in some languages (e.g. Modern Greek, Lezgian) each part of the binomial expression takes case independently – reflecting the two case roles associated with the reciprocants – even though on other grounds the binomial reciprocal functions as a single NP. But are there other types of construction in which double role marking is found?

A possible example is another Kuuk Thaayorre construction (cf. Gaby this volume), schematizable as (36), and used in a variety of mutual situations including with overt reciprocal verbs but also with mutual predicates like ‘be next to’ and implicitly cooperative events like ‘talk (together / to each other)’.

(36) ([N<sub>i</sub>]<sub>erg|nom</sub>) [N<sub>j</sub>]<sub>dat</sub> Pron<sub>i+j</sub><sub>erg|nom</sub> V-RECP / Mutual predicate

In this construction there is a syntagm made up of up to three elements:

- (a) an optional first element marking one reciprocant (and marked with the ergative or nominative according to whether the corresponding unidirectional predicate is transitive or intransitive),
- (b) a second element marking the other reciprocant, bearing the dative case,
- (c) a third element in the form of a summative pronoun denoting the whole conjoint set, which also takes the ergative or nominative as determined by the case frame of the corresponding unidirectional predicate.

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37. On definiteness in reciprocal expressions, see Beck (2001).

Though it is tempting to regard the whole unit as a single NP, and the three elements often follow each other as a unit, it is also possible for the individual elements to be separated, making the question of how each element links to the verb's argument structure an involved one.

The crucial point, though, is that the first noun in the syntagm takes the ergative (with a reciprocalized transitive verb) or the nominative (with an intransitive or semitransitive unidirectional verb), while the second noun takes the dative. The following pronoun then takes a case appropriate to the role of the whole NP in the clause. In some cases, such as (37a), the dative case on the second conjunct is what would be assigned to the corresponding argument in a unidirectional clause (cf. [37b]), though this is not always the case, since a dative is also used in (37c) even though the verb 'kick' is transitive and would take an ergative:accusative case array in its unidirectional use: in this example, in other words, the ergative on the first noun is what we would expect from the unidirectional use but the dative cannot be directly accounted for.

- (37) Kuuk Thaayorre (Gaby 2006: 322; cf. also Gaby 2005)
- a. [*pam ith pul paanth-ak*] *nhiinat pul*  
 man DEM 3DU.NOM woman-DAT sit.PST 3DU.NOM  
 'The man and the woman sat down next to each other.'
- b. [*yuk thongkn*] [*church-ak*] *thanan*  
 tree tree.NOM church-DAT stand.PRS  
 'The tree is next to the church.'
- c. [*Jimmy-nthurr Johnny-n pul*] *ngarnghan*  
 Jimmy-ERG Johnny-DAT 3DU.ERG yesterday  
*thanp-rr-r pul*  
 kick-RECP-PST 3DU.ERG  
 'Jimmy and Johnny kicked each other yesterday.'

We can thus only partially derive the choice of cases from those used in the corresponding unidirectional predicates. Nonetheless, what is relevant here is that the nouns denoting individual reciprocants (which in turn form part of the conjunct set denoted by a subject pronoun) get two distinct cases, one realized on each of the conjuncts.

Work on the typology of multiple case indicates that it is perfectly possible for embedded NPs to receive more than one case as a result of case-stacking (cf. Dench and Evans 1988). It is also worth raising the question of whether they can receive more than one case as a result of the double-assignment of roles that occurs in reciprocals. This may be manifested as different cases assigned to

different sub-constituents of the NP, as with binomial quantifiers in Lezgian or Greek, or with the Kuuk Thaayorre examples just discussed. Or alternatively – and I am unaware of an example yet of a language that does this – it might be possible for both cases to be stacked on a single NP,<sup>38</sup> so that both appear on eligible sub-constituents. Whether such constructions actually occur is a question to be answered by future research.

### 3.2. Verb-marking (Predicate-marking) strategies

Here I group a number of phenomena that mark the predicate directly to derive the meaning ‘mutually PRED’ or ‘share in PRED-ing’ from a basic unidirectional meaning. The commonest method is to use a verbal affix of the type that effects valency changes (Section 3.2.1), and usually reciprocals have their valency reduced by one, but this need not always be the case. It is also possible for verbs to be marked by other sorts of derivational means, including affixes, reduplication,<sup>39</sup> etc.; typically these originate from meanings like ‘all over the place’, ‘back and forth’, or ‘again and again’. It is also possible, in languages that construct predicate lexemes from two parts – an auxiliary or light verb plus a coverb or lexical verb – for reciprocals to be formed by using a special auxiliary (Section 3.2.2).

Although I concentrate below on verbs, it is also possible to have non-verbal two-place predicates of various types, and many languages extend the same constructional mechanisms to these that they employ for verbal predicates. This is particularly common with two-place relational nouns (e.g. kin terms), in the so-called “dyad construction”. For example, in the Taiwanese Austronesian language Puyuma<sup>40</sup> the reciprocal prefix *mar-* can be used with two-place verbs like *sagar* ‘love’ to derive *mar-ka-sagar* ‘love each other’, but also with two-place relational nouns like *ali* ‘friend’ to derive *mar-ali* ‘(mutual) friends’ or with *kartaguin* ‘spouse’ to derive *mar-kartaguin* ‘husband and wife, couple, pair who are each other’s spouses’. (The additional *ka-* prefix in *mar-ka-sagar* is selected by the dynamicity of the predicate.)

Likewise there are many languages that use affixes to verbal nouns to obtain “reciprocal verbal nouns”, such as Malagasy, which simply feeds reciprocal

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38. The possible parallels with ‘standard’ case stacking were suggested to me by Rachel Nordlinger (p.c.).

39. In Godié, for example (Marchese 1986: 231) reduplication is used to mark reciprocity, e.g. *wa wà-wà* [they love-love] ‘they love each other’.

40. Data from Elisabeth Zeitoun (handout), “Reciprocals in the Formosan languages: a preliminary study.” Paper presented at the Ninth International Conference on Austronesian languages (9-ICAL), Canberra, 8–11 January 2002.

verbs into the process of nominalization (cf. [38]), or Japanese, which can form reciprocal nouns with the Sino-Japanese prefix *soogo-*, as in (39).

(38) Malagasy (Keenan and Razifamamonjy 2004: 199)

- a. *mpifanome*  
give.RECP.NMLZ  
'givers to each other of money'
- b. *mpifampilaza ho mpangalatra*  
say.as.RECP.NMLZ.ACTV as steal.NMLZ.ACTV  
'those who said each other to be thieves'

(39) Japanese (König and Kokutani 2006: 292)

- fujo* 'help' > *soogo-fujo* 'reciprocal help'  
*shien* 'support' > *soogo-shien* 'mutual support'

It is in order to accommodate examples like these in our constructional typology that we need to characterize this type as "predicate marking strategies" rather than "verb-marking strategies". However, a thorough investigation of the means used to form reciprocal constructions from nominalizations and relational nouns is beyond the scope of this paper: see Evans (2006) for details.

### 3.2.1. *Affixation and other morphological modification of the predicate*

Affixation to the predicate is one of the commonest methods of forming reciprocal constructions: among the many languages from every continent that employ such means are Chicheŵa (Mchombo 1991), Turkish (Lewis 1967), Kolyma Yukaghir (Maslova 1999), Imbabura Quechua (Cole 1985), Hixkaryana (Derbyshire 1979) and Bininj Gun-wok (Evans 2003). Though in many languages the same form is used for reciprocals and reflexives (e.g. Hixkaryana, or the Quechua verbal suffix *-ri*) or for reciprocals and comitatives or sociatives, there are also many that employ dedicated reciprocal affixes, such as Kayardild (Evans 1995; cf. [40]) and Mundari (Evans and Osada forthcoming; cf. [41]).

(40) Kayardild (own field notes)

- Bil-da miila-thu-th.*  
3PL-NOM delouse-RECP-ACTL  
'They delouse each other.'

(41) Mundari

- siku-ko=ko da<pa>Ra-ta-n-a*  
louse-PL=3PL.SBJ search<RECP>-PROG.ORT-INTR-IND  
'They are delousing one another.'

It is commonly said that languages with such verbal derivations produce intransitive reciprocal clauses, by Faltz's intransitivization rule<sup>41</sup> (Faltz 1985: 14–15):

$$(42) \quad P(x, x) = P_R(x)$$

This accounts for the fact that Kayardild and Mundari have an apparent valence reduction, by one, in reciprocals; the unidirectional equivalent of (40), for example, would be (42), with an underived verb and an object.

- (42) Kayardild (own field notes)  
*Bil-da miila-tha bilwan-ji.*  
 3PL-NOM delouse-ACTL 3PL-OBJ  
 'They delouse them.'

However, such languages often give rather mixed signals about transitivity once their syntax is examined in detail (see Evans, Gaby and Nordlinger 2007), showing conflicting evidence about whether the object is present or not. For example, they might have only one argument, but in the ergative, as in Kuuk Thaayorre, which elsewhere only uses the ergative in transitive clauses.

- (43) Kuuk Thaayorre (Evans, Gaby & Nordlinger 2007: 571)  
*parr-n peln ii waarin-rr*  
 kid-ERG 3PL.ERG there chase-RECP  
 'All the kids are chasing each other.'

More seriously, though most languages that mark reciprocal on verbs manifest argument reduction, this is not always the case. Two New Caledonian examples are Nêlêmwa and Xaragure:

- (44) Nelemwa (Bril 2002: 153)  
*Hli pe-tuâ-i-hli.*  
 3DU.SBJ RECP-deceive-TR-3DU.OBJ  
 'They deceived each other.'

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41. Faltz's formulation was aimed primarily at reflexives, but given the many languages that use the same forms (and effectively have the same syntax) for both reflexives and reciprocals – many represented in his important book – it can be taken to apply to reciprocals as well.

- (45) Xaragure (C. Moysse-Faurie, handout;<sup>42</sup> cf. also Moysse-Faurie this volume: 121)

*nyärä pu-kêgai nyärä*  
 3PL RECP<sup>43</sup>-pinch 3PL

‘They are pinching each other.’

- (46) *nyärä kêgai nyärä*  
 3PL pinch 3PL

‘They pinch them.’

In both these cases, verbs with reciprocal-marking morphology still take two surface arguments that need linking to thematic roles. It is therefore important to define this construction type in a way that does not take change in valence as criterial. (We have in any case already seen that there are languages with actant-coded reciprocal strategies that also alter valency.)

Before leaving this section, there are two boundary problems worth special mention.

One concerns the Japanese *V-au* construction, to be discussed in Section 4.3.1, where reciprocal verbs are formed by compounding the main verb with a verb meaning ‘meet’. These are treated here as a special type of clause union, but it would not require too many changes to the language for it to be reanalysed as verb affixation, where the suffix happens to be homophonous with a free verb meaning ‘meet’. The Japanese construction thus suggests one diachronic source for verbal affixes encoding reciprocity.

The second concerns the Mandarin ‘V-come-V-go’ construction, to be discussed in Section 4.3.2. Again this clearly originates as a type of nuclear-level verb serialization, but it is also possible to analyse the resultant word as a four-part verbal compound (or a composite of reduplication and compounding) which, for syntactic purposes, is a single lexical item. Here, again, this could then be treated as a predicate-marking strategy.

### 3.2.2. *Reciprocal-coding auxiliaries*

In a number of languages in which a significant number of verb lexemes are two-part, with a coverb + auxiliary/light verb structure, switches in auxiliary are used to mark mutual action. These include several languages of the Nyul-

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42. “Reciprocals in some Kanak and Polynesian languages.” Paper presented to Reciprocals Working Group, University of Melbourne, 2004.

43. This is Moysse-Faurie’s gloss; given the functional range, ‘middle’ might be accurate.

nyulan family in Australia (see Hosokawa 1991: 175; McGregor 1999) and the Papuan language Skou. Consider first the following example from the Nyulnyulan language Warrwa, where the unidirectional construction in (47a) employs the coverb *ngul* ‘spear’, the auxiliary *ma* ‘put’ plus a transitivity-marking conjugational prefix *a-*, while the reciprocal construction in (47b) employs the reciprocal-marking auxiliary *wanji* ‘exchange’.

- (47) Warrwa (W. McGregor, p.c.)
- a. *kinya ngul ngirr-a-ma-ny*  
this spear 3AUG.SBJ-TR-put-PRF  
‘They speared it.’
  - b. *ngul ngirr-wanji-na*  
spear 3AUG.SBJ.PST-exchange-PST  
‘They speared one another.’

The original structure here is likely to have been something like ‘they exchanged kisses’, ‘they exchanged blows’, etc., but the auxiliary *banji/wanji* now has a much wider range of uses, including reflexive, e.g. for ‘the girl grooms her hair’.<sup>44</sup> More generally, in the Nyulnyulan languages, the auxiliary *-barnj-* ‘exchange’ is used for “reflexive/reciprocal activities; activity directed and constrained within delimited set of actants” (McGregor 2002: 111). It occurs in the following combinations with uninflecting verbs (McGregor 2002: 110–114): *kur* ‘embrace’, *wirrwir* ‘scratch’, *barbar* ‘flagellate’, *bard* ‘catch hold of’. Further reciprocal and reflexive examples from McGregor (2002: 113–114) include *daarr* . . . *-barnj* ‘meet together’ (*daarr* ‘arrive’), *durr* *-barnj* ‘push one another’ (*durr* ‘push, bump’), *jarrbard* . . . *barnj* ‘lift oneself up’. See also McGregor (1999) for more sentence examples.

Skou (Sko family, PNG) exhibits a rather similar system, using a combination of nominal plus light verb. Unidirectional ‘shoot’ is encoded by combining *ping* ‘bow’ with the auxiliary *ú* ‘release’ plus the requisite subject and object prefixes, while ‘shoot each other’ combines the same nominal with the verb *ti* ‘do’, with just subject marking on the auxiliary:

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44. Note also that the auxiliary *banji* descends etymologically from an original free verb, which actually includes a reciprocal suffix *-nji* cognate with the Kayardild suffix *-(n)thu-* in example (40) – see Alpher, Evans and Harvey (2003).

- (48) Skou (Sko family, PNG) (Mark Donohue, email to N.E.)
- a. *Te=Máwo te Te=Téme ping te=r-ú*  
 3PL=Skou.Mabo 3PL 3PL=Nafri bow 3PL=3PL-release.PL  
 ‘The Skou Mabos shot the Nafris.’
- b. *Te=Téme Te=Máwo ping te=ti*  
 3PL=Nafri 3PL=Skou.Mabo bow 3PL=do.PL  
 ‘The Nafris and the Mabos shot each other.’

Reciprocal auxiliaries are also found in some sign languages. In Indo-Pakistani Sign Language, for example (Zeshan and Panda forthcoming), some kinds of mutual action are encoded by first making a lexical sign indicating the action type (e.g. ‘embrace’) and then following it with an auxiliary indicating reciprocal.

It is easy for auxiliaries to turn into verbal affixes via univerbation. In Gooniyandi (McGregor 1990), spoken not far to the east of the Nyulnyulan languages, verbs have a two part lexical structure of the type STEM-PRON.PREF-[etc.]-V.CLASSIFIER-TAM. The “verbal classifiers” are, etymologically, old auxiliaries that have become fused phonologically with the other part of the verb containing more detailed lexical specification. Contrasts in classifier can be used, among other things, to encode the differences between unidirectional and reciprocal predicates, as in (49a,b): the glosses “VCL(A)” and “VCL(ARNI)” refer to different ‘classifier’ elements within the verb. What is relevant for our purposes here is that an original auxiliary strategy has developed, in Gooniyandi, into what we would consider a verbal affix strategy.

- (49) Gooniyandi (W. McGregor, p.c.)
- a. *mila-wirr-a*  
 see-3PL.SBJ>3PL.OBJ-VCL(A).AUX  
 ‘They saw him.’
- b. *mila-wirr-arni*  
 see-3PL.SBJ-VCL(ARNI).AUX  
 ‘They saw one another.’

### 3.2.3. *Lexical strategy*

Most languages have at least some verbs whose meaning already encompasses mutual activity, and which (unlike e.g. ‘kiss’) cannot be used unidirectionally. English examples are *exchange* (= ‘give each other [things considered equivalent]’), *swap*, and *quarrel* (= ‘argue with each other’). In some languages this is the only constructional means of expressing reciprocity, for a limited set of

possible relations: an example is Kilivila (Senft forthcoming) which has the verb *katumapu* ‘exchange’, but which for describing other types of mutual activity either employs completely compositional biclausal descriptions, or uses implicatures from plural subjects. It remains to be seen whether there are languages that make use of a large set of mutual verbs as their primary strategy for expressing reciprocity.

### 3.3. Conjunct strategy

Here the set of reciprocants are conjoined into a single argument which represents just one of the two argument positions, so that there is a reduction of valency by one. Diagrammatically:

- (50) a. Unidirectional  
 $V < x, y >$   
 b. Reciprocal  
 $V < x + y >$

This strategy can be exemplified by the well-studied English construction available for a large set of mutual verbs (Lakoff and Peters 1969).<sup>45</sup>

- (51) a. John kissed Mary and Mary kissed John.  
 b. John and Mary kissed.

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45. Among the many discussions of the semantics of such predicates see Haiman (1983) on the iconicity of the construction and its restriction to stereotypical versions of the action denoted, Kemmer (1993) for substantial cross-linguistic data and Levin (1993) for the most exhaustive list yet available of which verbs belong to this class in English.

Two terminological observations are in order here, to justify why I don't use the terms “light reciprocal” or “naturally reciprocal event”, sometimes applied to this construction. First, “light reciprocal” is a relative term only, and is thus not accurate as an absolute label in a typology. Thus while the English light vs. heavy reciprocal opposition does indeed use bare conjunct reciprocals for its light version (i.e. *they kissed* vs. *they kissed each other*), in other languages the light reciprocal is a reciprocal pronominal clitic (French *se*, German *sich*, etc.) as opposed to the heavy binomial quantifier (*l'un l'autre*, *einander*, etc.). This means that light reciprocals do not use the bare conjunct strategy in all languages. Secondly, even though it is true that there is a strong correlation between the use of the English bare conjunct strategy and the semantics of the predicates it is used for denoting, namely what Kemmer calls “naturally reciprocal events”, again the semantic label and the constructional

It would be logically possible for a language to have this as its only strategy for forming reciprocals. It is certainly mentioned as the basic reciprocal strategy for at least one language, Gumbaynggir (Eades 1979: 318),<sup>46</sup> though it is said to be “usually” accompanied by the “reciprocal particle” *galagala*.<sup>47</sup> Reciprocals in Gumbaynggir keep an unaltered verb form, but replace the ERG.ACC argument array with a single NOM argument representing the merged participant set:

- (52) Gumbaynggir (Eades 1979: 318)
- a. *ngiya:la bu:rwaw ngi:na*  
 1PL.INCL.ERG paint.FUT 2SG.ACC  
 ‘We will paint you.’
- b. *ngiya: galagala bu:rwaw*  
 1PL.INCL.NOM PTC paint.FUT  
 ‘We will paint each other.’

More commonly, the conjunct strategy is restricted to a delimited set of verbs. Typically these break down further into some that entail, and others that merely implicate, mutual activity. Thus some lexical predicates must have a reciprocal interpretation, e.g. ‘swap’, ‘exchange’, though note that the mutual predicate then denotes a sub-event rather than the whole event: *John and Mary swapped shirts* does not mean “John swapped shirts with Mary and Mary swapped shirts with John” so much as “John gave his shirt to Mary and Mary gave her shirt to John”. It is these verbs that tend to be the grammaticalization source for auxiliaries or light verbs forming reciprocal constructions. A larger class of verbs allows a subset of predicates to have reciprocal interpretations when used with plural subjects and no object. These are discussed extensively in Kemmer (1993) and elsewhere; cross-linguistically, they usually refer to “naturally reciprocal events”. Typically, in a given language, some predicates will entail reciprocal interpretations with conjoined subjects, such as *kiss* in English (cf. [53a]), while

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category should be kept distinct, since (a) the set of event types associated with the construction type may vary from language to language, or at different stages of the same language, and (b) in principle one should separate constructional definitions from semantic categories, so as to investigate them as two in-principle independent variables.

46. For just one verb in Gumbaynggir, namely ‘hit’, there is a special reciprocal form derived by suffixation: *bum* ‘hit, kill’ (base form), *bumiri* ‘hit-RECP’. Eades suggests the affixal strategy would once have been more widespread. The reciprocal form fits into a detransitivized construction like other reciprocals.

47. And in fact Eades’ grammar does not include any examples where reciprocals are coded just by valency reduction, without *galagala*.

others, such as *disagree* in English (cf. [53b–d]) merely implicate a reciprocal interpretation without entailing it, and others (in fact the majority) are simply unavailable to the construction (cf. [53e]).

- (53)
- a. John and Mary kissed. → John kissed Mary and Mary kissed John.
  - b. John and Mary disagreed.
  - c. John and Mary disagreed with each other.
  - d. John and Mary both disagreed with Bob.
  - e. \*John and Mary saw/hit.

Three typological issues involving this construction type deserve further mention:

(a) In many languages with predicate-affixation for reciprocity, such lexical reciprocals are simply non-existent, or else are limited to a subclass of predicates that cannot host reciprocal affixes. For example, in the Gunwinyguan languages Bininj Gun-wok and Dalabon ‘meet’, ‘kiss’, etc. must all take overt reciprocal affixes (see [54a,b]), but predicate adjectives like ‘resemble/be alike’ (see [54c]), which are morphologically ineligible to take the reciprocal suffix, can be used with a conjoint subject and no overt marking to give a reciprocal reading:

- (54) Dalabon (own field notes)
- a. *Barra-h-dalû-djornghmi-rr-inj.*  
3DU.SBJ-ASS-mouth-kiss-RR-PST.PRF  
‘They kissed each other.’
  - b. \**Barra-h-dalû-djornghmi-inj.*  
3DU.SBJ-ASS-mouth-kiss-PST.PRF  
‘They kissed.’
  - c. *Barra-h-kornam-rokrok.*  
3DU.SBJ-ASS-height-similar  
‘They are the same size, same height.’

(b) As we have seen with many other construction types, the scope of the phenomenon is two-place predicates, rather than verbs. Kinship terms, for example, often yield comparable interpretations with conjoint subjects, as in (55a), or the nice contrast in *Don Quixote* between the non-reciprocal interpretation of *dos primas (mías)* ‘two cousins (of mine)’ (cf. [55b]), where the cousin relationship of each is calculated with respect to a third point (the speaker), and *dos hermanas (que no eran mías)* ‘two sisters (who weren’t mine)’, where the sister relationship is calculated reciprocally, i.e. they were each other’s sisters.

- (55) a. *Myfanwy and Olwen are sisters.*  
 b. *Yo voy aquí porque me burlé demasiado con dos primas mías y con dos hermanas que no eran mías; finalmente, tanto me burlé con todas, que resultó de la burla crecer la parentela tan intrincadamente, que no hay diablo que la declare. (Don Quixote, Parte Primera: Capítulo XXII)*  
*'I'm here because I played around with two cousins of mine and with two sisters who weren't mine; in the end I mucked around so much with them, and such an intricate genealogy grew out it, that not even the devil could work it out.'* [translation and italics mine]

(c) Both of the defining features of this construction type – the conjoining of both reciprocants into a single actant, and the reduction of the predicate's valence – are found in many other construction types as well. Valence-reduction is particularly common with the other predicate strategies, such as predicate marking and the use of reciprocal auxiliaries, but is also sometimes found with some types of actant strategy, such as reciprocal pronouns and reciprocal clitics. The formation of a conjoined actant containing all reciprocants is found with every monoclausal strategy, but there are some biclausal or sesquiclausal strategies that do not employ conjoined actants (see especially the Iwaidja/Mawng 'in turn' construction discussed in Section 4.4). If we were to fully factorize our typology into components, which are then grouped together, in various combinations, into constructions, then the bare conjoint strategy would simply be the conjunction of valency reduction and reciprocant conjunction without any further element, such as explicit marking on the predicate.

### 3.4. Modifier strategies

In this type, mutuality is encoded by a modifier with proposition-level scope. Unlike with actant strategies, the exponent of reciprocity in modifier strategies does not distribute like an NP or actant affix, and unlike predicate-marking strategies it does not show any morphological or syntactic link to the predicate. Where the predicate is a verb, the modifier will in most languages be realized as an adverb (*reciprocally* / *reciprocamente* in [8] above) or a clause-level particle. Where the predicate is a nominal, it will in most languages be realized as an adjective (*reciprocal* in [56]). The messy state of cross-linguistic and language-internal definitions of the "adverb" category, however, results in there being even less terminological parity across languages here than for most other types. In the rest of this section I concentrate on adverbial modifiers where the reciprocal predicate is a verb.

- (56) *I find it difficult ...to conceive that complex spoken language ... evolved more as a form of **reciprocal grooming** and gossip than as a means to extend our cooperation productively and to teach our offspring by transmitting practical information.* (Oppenheimer 2003: 25)

In European languages, adverbial reciprocals are predominantly found either where the predicate is non-verbal (e.g. *mutually advantageous/incomprehensible*), or as a disambiguating strategy with polysemous constructions such as the reflexive/reciprocal *se* in Spanish (57).

- (57) Spanish (from Allende 2000: 67)

*Dejaron de explorar las doscientas veintidós  
stop.3PL.PST of explore.INF the two.hundred twenty.two  
maneras de hacer el amor porque con tres o  
ways of make.INF the love because with three or  
cuatro tenían suficiente y ya no  
four have.3PL.PST.IMP enough and already NEG  
era necesario **sorprender-se mutuamente.**  
be.3PL.PST.IMP necessary surprise.INF-3RR mutually*

‘They stopped exploring the two hundred and twenty two ways of making love, because with three or four they already had enough, and it was no longer necessary to surprise one another.’ [translation mine]

The same is true for many languages from other parts of the world, which use reciprocal adverbs as a secondary strategy when verbal-affix or bipartite strategies are not available. For example in Kayardild, where the primary strategy is a reciprocal suffix on the verb (cf. [44] above), the adverb *junkuyunku* is used either where the reciprocants are not in an appropriate pair of grammatical relations for verbal coding (cf. [58]), or where the predicate is not a verb and therefore not eligible to bear the reciprocal suffix (cf. [59]):

- (58) Kayardild (Evans 1995: 228)

*maarra **junkuyunku** munirr-wu-j  
all reciprocally breast-give-ACTL*

‘(In the old days) all (the women) suckled each other’s children.’

- (59) Kayardild (own field notes)

*Karndi-ya dun-da jungarrba bayi junkuyunku maarra*  
 wife-NOM husband-NOM big angry mutually only  
*miburl-da kurri-nju-n-d.*  
 eye-NOM see-RECP-NMLZ-NOM

‘The husband and wife are very angry with one another, they are just staring at each other.’

In other languages, however, such as Mandarin (cf. [60])<sup>48</sup> and Tetun (cf. [61]), reciprocal adverbs are the primary strategy:

- (60) Mandarin (Liu 1999: 124)

*Tamen huxiang gongji.*  
 they RECP attack

‘They attacked each other.’

- (61) Tetun Dili (Williams-van Klinken, Hajek and Nordlinger 2002: 60–61)

*João ho Maria istori malu.*  
 John and/with Maria quarrel RECP

‘John and Maria quarrelled.’

Some descriptions, though analysing the reciprocal marker as adverbial, indicate a nominal source etymologically, as in Kobon, where it derives from a noun meaning ‘debt, reciprocation, compensation’ (Davies 1989: 90–91). In the other direction, it is likely that many predicate-marking strategies (such as verbal affixes with etymologies meaning ‘all around, back and forth’, etc.) arise through univerbation with what once were adverbs. Less expectedly, there are also cases where reciprocal pronouns have arisen through fusing object pronouns with a phasal adverbial, such as in Tawala (Ezard 1984, cited by König and Moysse-Faurie, handout),<sup>49</sup> where the third person plural reciprocal marker *me-hi* ‘RECP-3PL.OBJ’ has arisen by prefixing a reduced form of *meme* ‘again’ to the pronominal object marker.

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48. See Lien (1994) on the complex history of the original reciprocal adverb *xiang* in Chinese, including its compounding with various elements in many modern Sinitic languages, but also its absorption into the verb itself in others.

49. “Renewing connection with the data: reciprocal constructions in Oceanic Languages.” Paper presented at the *Sixth Biennial Meeting of the Association for Linguistic Typology*, Padang, July 2005.

#### 4. Strategies involving more than one clause

Given that the meaning they represent involves at least two predicates – e.g. LOVE (j,m) and LOVE (m,j) – it is not surprising that many languages employ more than one clause to express mutual situations. In Cantonese, for example (cf. [62]), this is the primary strategy for expressing mutuality, as it is in the Papuan language Golin (cf. [63]). As Maslova and Nedjalkov (2005:430) point out, such constructions are “iconic, since the complex structure of the reciprocal situation is straightforwardly reflected in the structure of the grammatical construction.”

(62) Cantonese (Matthews and Yip 1994: 87)

*Ngóh béi-min kéuih kéuih béi-min ngóh.*  
 I give-face him he give-face me  
 ‘He and I respect each other.’

(63) Golin (Chimbu; Papuan) (own field notes)<sup>50</sup>

*Abal su i yal paunan aato-n-g-w-e i*  
 woman two DEM man jaw touch-3-DECL-3-PROX DEM  
*yal su abal su paunan aato-n-g-w-e.*  
 man two woman two jaw touch-3-DECL-3-PROX

‘Two girls touch the two men on the jaws, and the two men touch the two girls’ jaws [i.e. the girls and the men are touching each other’s jaws].’

Simple biclausal descriptions of this type are probably available in all languages. For example, in the following sample of several Bible translations of John 14,11, every language employs this method (presumably following the Greek original) rather than a monoclausal reciprocal like ‘the Father and I are in each other’. Note, though, that in Luther’s translation the construction is partly compacted in the sense that it is conjoined under a single copula, with third person singular agreement. (It is ironic that a single lexeme exists in Christian theological vocabulary to describe this situation, despite the reluctance of every Bible translation I have investigated to represent it within a single clause. The lexeme is *circumincession* or its variant *circuminsession* – which the OED defines as “the reciprocal existence of the persons of the Trinity in one another.”)

- (63) a. English: Believe me that *I am in the Father, and the Father is in me.*  
 b. German: Glaubet mir, daß *ich im Vater und der Vater in mir ist.*

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50. Data thanks to Chris Kia (p.c.).

- c. French: *Croyez-moi, je suis dans le Père, et Père est en moi.*
- d. Dutch: *Geloof mij, dat Ik in de Vader ben en de Vader in Mij is.*
- e. Spanish: . . . *que el Padre está en mi, y que yo estoy en el Padre*
- f. Australian Kriol:  
*Wal yumob garra bilib weya mi dal-im yumob mi*  
 well 2PL must believe REL 1SG tell-TR 2PL 1SG  
*jidan garram main dedi en main dedi jidan*  
 sit with my father and my father sit  
*garram mi.*  
 with 1SG
- g. Kunwinjku:  
*Kandi-woybukwo kore nga-h-yime ngudberre*  
 2PL>IPL-believe.IMP LOC 1SG-IMM-tell.NPST 2PL.OBJ  
*bu ngaye ngahni kore ku-kange*  
 REL 1SG 1SG.SUBJ-IMM-sit.NPST LOC LOC-inside  
*Ngabbard nuye, dja Ngabbard nungka ka-h-ni*  
 father his and father 3SG 3SG-IMM-sit.NPST  
*kore ku-kange ngardduk.*  
 LOC LOC-inside my

Most investigators have, justly, not considered these to be *reciprocal constructions*, since there is nothing non-compositional about them – rather, they exploit the recursive and concatenative possibilities of natural language to construct biclausal depictions that mirror the mutual, two-predicate semantic representation. But merely being biclausal should not automatically disqualify a form of expression from being considered a reciprocal construction, since the key criterion is whether there *is conventionalization* or *constructional specialization*. We now pass to constructions that clearly make use of more than one clause, but in ways that betray a conventionalization not found in (61)–(63).

#### 4.1. Conventionalized biclausal descriptions

It is easy to envisage a language that is like Cantonese or Golin, in requiring a mutual biclausal construction, but which has conventionalized it to the point of requiring a particle marking reciprocity in one or both clauses. Yidiny (Dixon 1977: 379–380) comes close to this. The normal way of expressing mutual situations in Yidiny is rather similar to the Cantonese and Golin examples given above, but with a crucial difference: at least one, and sometimes both, of the linked clauses contain one of the two “redressive” particles *ḍaybaḥ* or *ḍaymbi*, each meaning something like ‘in return’. An example is (64).

(64) Yidiny (Dixon 1977: 380)

*bama:-l      ηαηαη      bun ɖa:-ŋ / ηayu      bama      ɖaybaɽ*  
 person-ERG    ISG.ACC    hit-PST                    ISG.ERG    man.ACC    in.return

*bun ɖa:-ŋ*

hit-PST

‘The person hit me and I hit him in return.’ (= ‘The person and I hit each other.’)

Conventionalization here is shown by two facts:

- (a) the choice between these particles depends on the person of the actor of the “redress clause”: *ɖaybaɽ* when the actor is the speaker, *ɖaymbi* elsewhere;
- (b) there is an option of including the appropriate redress particle in *both* clauses when describing situations in which neither actor is the speaker.

Were the Yidiny construction specialized for expressing mutuality, I would include it as a conventionalized biclausal description. Certainly, many of the examples cited could be rephrased with English reciprocals without change of meaning: ‘the person hit me and I hit him (*ɖaybaɽ*) in return’, i.e. ‘the person and I hit each other’, or ‘I told (this person) a story, and then he, in turn, told me one’, i.e. ‘we told each other stories’. However it is clear from other examples that the meaning is actually a bit broader, taking in other kinds of reciprocation, so that the event need not be completely mutual as long as it counts as “fair exchange”, e.g. “you give me some meat and then I’ll give you some vegetables in exchange”, or “You show me where mountain yams (grow) and by-and-by I’ll show you (some) wallabies, in exchange.” For this reason I would not wish to identify the Yidiny construction as a reciprocal construction proper (nor does Dixon in his description), but it shows how a language with a conventionalized biclausal description could function.

#### 4.2. Zigzag summative constructions

An unusual type of multiclausal construction is found in the Papuan language Amele (Roberts 1987). In Amele reciprocal constructions formed from transitive verbs (cf. [64]), the verb is repeated, suffixed by the different-subject marker and a third singular suffix; the construction is closed with a final “matrix verb” which “cross-references the reciprocant group, which can be dual or plural in number” (Roberts 1987: 306). Roberts emphasizes the unusual behaviour of the switch-reference “different subject” marker in this construction: “both coordinate verbs are marked for third person singular subject and for different

subject (DS) following. Therefore they cross reference each other even though they are in linear sequence.”<sup>51</sup> Normally the different subject-marker is only anticipatory, rather than being non-linear as it is in the reciprocal construction. This construction is illustrated in (65).<sup>52</sup>

(65) Amele (Roberts 1987: 132)

*Age qet-u-do-co-b qet-u-do-co-b eig-a.*  
 3PL cut-PRED-3SG-DS-3SG cut-PRED-3SG-DS-3SG 3PL-TPST  
 ‘They cut each other.’

How many verbs, and how many clauses, should the unified zig-zag construction be analysed as having? On initial inspection, we would conclude from the presence of inflections normally placed on verbs, that (65) has three verbs and three clauses (e.g. *qetudocob*, *qetudocob* and *eiga* in [66]). Against this, though, is some evidence that the first two verbs are not independent units. This comes from the conventionalization of their person-marking: whatever the person of the overall subject, that of the “zig-zag” verbs is frozen at third person, as in (66).

(66) Amele (Roberts 1987: 307)

*Ele ew-udo-co-b ew-udo-co-b ow-a*  
 1DU despise-IO.3SG-DS-3SG despise-IO.3SG-DS-3SG IDU.SBJ-PST  
 ‘We despise each other.’

Here, then, we have a single construction, but comprising three inflected verbs. These verbs have been integrated to the point where they show less indepen-

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51. Cf. an earlier remark on this issue in Haiman’s (1980: 435) discussion of a similar phenomenon in Hua: “Rather than a conjunction of medial and final clauses what we encounter . . . is a conjunction of medial clauses, each of which, with its final desinence, loops back and thus ‘anticipates’ the other.”

52. In the case where the reciprocating roles are agent and beneficiary, a somewhat different construction is used: in addition to a single occurrence of the lexical verb (‘cut’ in this example, the “object marker and subject suffixation is duplicated” (Roberts 1987: 132).

*Age jacas qet-i do-co-b do-co-b eig-a.*  
 3PL tobacco cut-pred. 3SG-DS-3SG 3SG-DS-3SG 3PL-TPST  
 ‘They cut tobacco for each other.’

This is Roberts’ analysis. But it may be possible to reanalyse this as reduplication of serialized ‘give’, then giving the analysis *do- $\emptyset$ -co-b* [3SG-give-DS-3SG], since ‘give’ is a zero-root verb – see his ex. 634, p. 132. This would make this example, literally, ‘they tobacco cut he.gives.him he.gives.him they are’.

dence than is normal in typical Amele verb-chaining constructions – there, medial verbs, though they do not show tense independently, are free to select whichever person and number values are appropriate for their subject and object. Incidentally, Amele shows particularly clearly that, in addition to representing the individual one-way events normally given in semantic representations of reciprocals, we may wish to add an additional semantic component representing joint action if we take the clues offered by the language seriously.

#### 4.3. Fused multiple predicates

The examples in Section 4.1 show how languages may make use of multiple predicate lexemes to represent mutual situations, mirroring the complex structure of the events they represent. The Amele example in Section 4.2 also shows how the resultant conventionalization may limit the inflectional independence of some of these predicate lexemes, even though in Amele we are still dealing with three distinct predicate words per construction.

Languages may also, however, carry the process of conventionalization and reduction further, to the point where there is clause fusion. Several distinct types of reciprocal construction may result from this process. Firstly, an intransitive verb depicting the overall “cooperative event” may fuse with a lexical verb (typically transitive) one token of the unidirectional sub-events: this is the case with the Japanese *V-au* construction, where the *-au* element is a compounded form of the mutual intransitive verb ‘meet’ (Section 4.3.1). Secondly, successive tokens of a unidirectional verb may be compounded together, along with other indicators that the directionality of the action is reversed: this is the case of the Mandarin ‘V-come-V-go’ construction (cf. Section 4.3.2). A variant on this latter strategy that is made possible by the special semiotic characteristics of signed languages is for the two “opposing” events to be shown simultaneously rather than sequentially, with symmetrical convergent signs by the two hands; this is exemplified by a number of signs for mutual actions in such sign languages as Indo-Pakistani Sign Language (Section 4.3.3). Finally, a redressive or “in turn” clause, originally part of a two-clausal construction of the type ‘A V-es B and B-in-turn Ves A’, may be reduced by truncating all but the contrastive pronoun, which gets reanalysed as part of a single clause; this is the case with the Mawng and Iwaidja reciprocal construction to be described in Section 4.3.4.

4.3.1. *Verb compounding with mutual predicate*

In Japanese the verb *au* basically means ‘meet’, with a range of other meanings such as ‘fit’ (cf. König and Kokutani 2006). As a main verb, it may either be used non-mutually (see [67a]) with the nominative and dative postpositions, or it can be used mutually with a number of possible combinations of the nominative plus the comitative, such as (67b) and (67c).

- (67) Japanese (Kuno 1973: 102, 104)
- a. *John ga Mary ni at-ta.*  
John NOM Mary DAT meet-PST  
‘John met Mary.’ (John moving towards Mary)
  - b. *John ga Mary to at-ta.*  
John NOM Mary COM meet-PST  
‘John and Mary met.’ (each moving towards the other)
  - c. *John to Mary ga at-ta.*  
John COM Mary NOM meet-PST  
‘John and Mary met.’ (each moving towards the other)

In addition to its basic ‘meet’ use, this verb may be compounded with a unidirectional verb stem with meaning ‘V’ to give a mutual predicate with the meaning ‘V each other’. From *ai-suru* ‘love’, for example, it can derive the reciprocal expression *ai-shi-au-te* ‘love each other’, as in (68).

- (68) Japanese (Nishigauchi 1992: 157)
- John to Mary ga ai-shi-au-te iru.*  
John COM Mary NOM love-do-meet/RECP-PTCP be  
‘John and Mary love each other.’

Semantically, the second ‘meet’ verb in the compound can be taken to represent that part of the (prototypical) representation that deals with joint action, while the first verb, here *ai-suru* ‘love’, supplies the lexical specification of what the action is. Note that the case frame for the clause, which is intransitive, comes from the ‘meet’ verb, not from the lexical verb.

The standard analysis of this construction in Japanese is as a compound verb (V+V), along the lines indicated. But it is not hard to see how *au-* could be reanalysed as a verbal affix which derives reciprocal verbs, changing the valence of the verb from transitive to intransitive (see Section 3.2.1), at which point the presence of two lexical predicates in the construction would become less clear.

#### 4.3.2. *Verb compounding reduplicating unidirectional predicate ‘come’ and ‘go’*

Whereas Japanese combines a first predicate denoting a unidirectional action with a second predicate depicting the coordinative/interaction element (*au* ‘meet’), an alternative strategy is to repeat the one-way predicate twice, but combined with some indication of direction reversal. We already saw one way of doing this in Amele, where the language’s switch-reference mechanism is harnessed to encode the alternate directions of the action. But there the successive one-way verbs are phonologically distinct and each bears the inflectional suffixes associated with a distinct (albeit dependent) clause. Mandarin (Liu 1999) appears to be in the process of grammaticalizing another type of strategy, in which the one-way verb is repeated in the frame ‘V-come-V-go’. An example is:

- (69) Mandarin (Liu 1999: 124)  
*Tamen da-lai-da-qu.*  
 they hit-come-hit-go  
 ‘They hit each other.’

Though this construction likely has its diachronic source in verb serialization, it now patterns as a compound, and hence represents the fusion of more than one lexical predicate into a single clause.

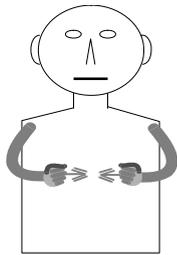
As Liu points out, the construction is still in the process of being grammaticalized, and it can be argued that the reciprocal interpretations here are contextual readings of a more general meaning that includes ‘repeated motion in opposite directions’ (e.g. ‘walk-come-walk-go’, meaning ‘walk back and forth’) and other types of repetition more generally, e.g. ‘think-come-think-go’ for ‘think and think (for quite a while)’ and ‘eat-come-eat-go’ for ‘eat and eat (at different locations)’. Reciprocal readings are only obtained when the subject is plural and refers to multiple equal-animacy participants, and V is a transitive verb reporting a non-reversible activity.

#### 4.3.3. *Symmetric signing*

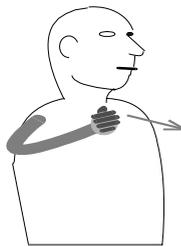
While spoken language needs to chain a sequence of predicates together, as in the Mandarin and Amele examples discussed above, sign languages can show multiple non-mutual actions simultaneously, through signs in which each hand moves toward the other while using a comparable handshape, location and move-

ment.<sup>53</sup> This technique is employed for a number of reciprocal predicates in Indo-Pakistani Sign Language (Zeshan 2000: 77), German Sign Language (Pfau and Steinbach 2003: 16ff.) and American Sign Language: in ASL some verbs “can be made reciprocal by adding another [...] hand moving in the opposite direction” (Fischer and Gough 1980: 176). To give an example from Indo-Pakistani Sign Language, the sign for ‘fight (each other)’ is (70a), with two arms, each with clenched fist, moved towards each other; this is a symmetric two-handed version of the one-handed sign for ‘hit-with-fist’ (see [70b]).

(70) Indo-Pakistani Sign Language (U. Zeshan p.c.)



a. FIGHT/ARGUE



b. HIT-WITH-FIST

Other examples of signs in Indo-Pakistani Sign Language that employ symmetric signing in reciprocal constructions are the signs for ‘collide/accident’, ‘talk’, ‘compete/competition’, ‘wage war/war’ and ‘discuss’. (These signs are versatile and can be used with either predicate or argument meaning, as the glosses given here indicate).

#### 4.4. The fused contrastive subject construction

The clause fusions we have discussed so far involve multiple predicates being fused into a single clause. We now consider a rather different case, found in the Australian languages Iwaidja and Mawng, that originates in a biclausal construction of the type ‘*x*V-es *y*, and *y*.in.turn V-es *x*’. What appears to have happened, historically, is that the second clause was truncated by omitting the ‘V-es *x*’ part, leaving just ‘*x* V-es *y*, and *y*.in.turn’. Then, in a further step, the

53. Cf. Haiman (1980: 433):

“What is needed, but acoustically impossible, is a structure something like

S<sub>1</sub>

S<sub>2</sub>

Within the constraints imposed on human speech, which can put things together only ‘horizontally’, the ideal of representing simultaneity iconically can be approached in two ways ...”

‘and y.in.turn’ was reanalyzed from part of an elliptical second clause, to part of a monoclausal reciprocal construction: this is shown by the fact that it can appear inside other material from the first clause. The result is a clause that is strangely overcrowded in terms of its NPs, though it only has a single verb: an English rendition that best captures the structure is something like ‘John gave Mary and SHE a book’ for ‘John and Mary gave each other a book’.

To illustrate how this works, first consider the basic use of the “contrastive” pronoun series in Iwaidja, which have also been termed the “sequence of participants” pronoun series (Pym and Larrimore 1979: 45–46). The basic function of this series is to indicate a strongly contrasting change in subject between clauses or turns. An example is (71).

(71) Iwaidja (Pym and Larrimore 1979: 46)

*ngabi j-ara-n                      ajbud lda jamin yaw-urraka*  
 ISG    ISG.AWAY-go-PST beach and 3SG.CTR 3SG.AWAY-go.home  
 ‘I went to the beach and he went home.’

In the reciprocal construction, the sequence ‘*lda* + Contrastive pronoun’ is used after a straightforward transitive verb, but without any overt redressive verb (cf. [72a]). An obvious objection to treating this as a distinct construction would be to say that is simply an elliptical form of (72b), with the second verb omitted as predictable.

(72) Iwaidja (own field notes)

a. *kawun lda jamin*

*k-nga-wu-n                      lda jamin*  
 3SG.O-3SG.F.A-hit-NPST CONJ 3SG.CTR

‘They (he and she)<sup>54</sup> hit each other.’

b. *kawun lda jamin riwun*

*k-nga-wu-n                      lda jamin ri-wu-n*  
 3SG.O-3SG.F.A-hit-NPST CONJ 3SG.CTR 3SG.M>3SG-hit-NPST

‘She hit him and then he hit her.’

However, while this is the likely diachronic origin of the construction, it is no longer a valid synchronic analysis. If the ellipsis analysis were correct, the

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54. Strictly speaking, the subject has to be female (*nga*:- 3SG.F.A), while the object can be either male or female, since gender is only shown for the transitive subject, not the object.

contrastive pronoun should always follow all material in the first clause, since Iwaidja is not a language that allows scrambling across clause boundaries. However, a number of clausal elements may follow the contrastive pronoun, such as the theme arguments of three-place verbs like ‘give’ in (73). Similarly, in the closely related language Mawng, goal arguments may follow the contrastive pronoun (74).

(73) Iwaidja (own field notes)

*anb-uku-n*                      *lda wamin a-ngurnaj*  
 3PL>3PL-give-NPST and 3PL.CTR 3PL-name

‘They used to give each other their (clan) names.’

(74) Mawng (Evans, Singer & Birch forthcoming)

*ngani-yiwakang-ung*                      *la ngapimung mata*  
 3M.SG>1SG-snatch-PST.CONT and 1SG.CTR ART(VE)  
*magarnpa mata wakij ja Nawangari*  
 fishing.line ART(VE) fishing.line ART.M [name]

‘Nawangari and I were struggling against each other for the fishing line.’

The fused contrastive subject poses problems for normal assumptions about linking rules between thematic roles and syntactic argument positions, since in a clause like (71), one of the arguments (‘he’) appears twice in a clause: as object, indexed by the pronominal prefix on the verb, and as subject, indexed by the use of a contrastive subject pronoun. This anomalous double linkage can be motivated by appealing to the double role that ‘he’ plays in the semantic representation, functioning as both hitter and hittee, but cross-linguistically it is not normally a permissible option in the syntactic projection rules onto one clause.

Another typological peculiarity of this construction merits comment: it is the only construction type, in all those that we have surveyed, where (a) there is no conjunction of mutuanants into a single NP, and (b) there is just a single one-way predicate.<sup>55</sup> Both these peculiarities can be understood in terms of its origin as a truncated biclausal construction, as outlined above.

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55. In the final stages of revising this article I became aware that a possible counter-example is Seri (Marlett 2005). The highly unusual reciprocal construction in this language combines a “reciprocal adverb” *pti* with a transitive verb in its multiple action form, but without conjunction of the participants into a single NP: ‘they tattooed each other’ is thus expressed as *pti iyóozitim*, something like ‘reciprocally s/he-tattooed-multiple.action-him/her’. This is tantalizingly exemplified by a single

## 5. Conclusion

To conclude, I would like to locate the constructional typology developed in this article within the broader concerns of typology: to chart the total possibilities of human language (Section 5.1); to test claimed absolute universals (Section 5.2); to detect typological correlations and test implicational claims (Section 5.3), and to understand possible diachronic pathways (Section 5.4).

### 5.1. Mapping the possibility space

To the fundamental question of what is a possible human language, a typology of constructions contributes by mapping out the etic grid, or possibility space, of ways that languages can solve particular disambiguation problems (e.g. ordering the major clausal constituents S, V and O) or encode particular types of meaning (here, mutuality). This aspect of typology involves a cycle of induction and deduction: induction suggests dimensions of organization, whose possible recombinations can then be worked out deductively. The six thousand or so languages of the world have suggested possibilities that we may not have imagined – particularly important when, as in the case of reciprocals, it is difficult to delimit the possibility space by purely deductive means – and also provide a set of actual structures that can be compared against our etic grid to see whether all possible types in fact occur.

The most striking overall result of the survey undertaken here is the finding that there is way more diversity than previously reported in the ways that languages can encode mutuality – probably more than is the case for reflexive constructions, whose typology has been well-mapped by Faltz (1985). The expanded typology proposed here makes it harder to formulate typological correlations because of the greater number of cells involved (see Section 5.3), but is necessary if one is to give a full account of the data, formulate universal claims accurately, and show the evolutionary relationships between construction types.

Listing as many construction types as I have done here runs the risk of suggesting that anything is possible, which some would take to render the typology trivial.<sup>56</sup> However, it is important that some of the cells in the possibility space

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example in Marlett's paper, so that more data is necessary before we can really understand what is going on here.

56. I thank José Ramón Álvarez González for raising this objection, in discussion of an earlier oral presentation of this paper. I do not personally share the view that covering all possible structures renders a typology trivial, however: consider classical word order typology, which draws its power from the fact that it considers all possible permutations. The resultant interest of word order typology stems from (a) its ability to

I have mapped are – as far as our present knowledge goes – either empty or populated by rather marginal examples. The clearest example of an unrealized possibility is the set of variations on encoding reciprocity by using special marking on two NPs, each remaining ‘in place’ in the argument positions they would occupy in a unidirectional clause (Section 3.1.5). One significant enlargement of the possibility space, as described here, has been to include a number of strategies involving more than one clause. This move, which follows from taking the construction as the relevant unit for our typology and the recognition that constructions may be units of various sizes, is necessary both to give a more complete empirical coverage, and to show the diachronic sources of some of the monoclausal types.

## 5.2. The issue of universals

Strong universal claims have been made within the generative tradition about the syntactic properties of “anaphors”, as opposed to pronouns. These are absolute, rather than implicational universals, and should hence be true of all languages. The behaviour of reciprocal expressions, along with reflexives, has been widely explored within a range of generative approaches. The two most important claims within this tradition are

(a) “Principle A” of the Binding Theory, stating that “an NP with the feature [+ Anaphor] must be bound in its governing category”.<sup>57</sup> Among other predictions, this means that no language should allow structures of the type ‘Each other saw the children’, or ‘John and Mary thought this incident would hurt each other’.

We have seen that there are certainly reciprocal constructions that do allow such structures – Abkhaz allows the equivalent of the first (Section 3.1.4) and Japanese *otagai* allows the equivalent of the second (Section 3.1.2).

(b) that a typology of NP types can be developed, based on binary features, such that there is a clear distinction between reciprocals and reflexives (+Anaphor, -Pronominal) and Pronouns (-Anaphor, +Pronominal).

We have likewise seen problems with this binary typology. Most importantly, languages like Tinrin and Mwothlap that allow reciprocal and reflexive interpretations of regular pronouns pose one type of problem, and languages like

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detect typological correlations and (b) the empirical observation that certain logically possible structures are rare (or – as once believed – nonexistent).

57. See e.g. Haegeman (1994) for discussion, and Chomsky (1986) for the influential original formulation.

Hausa that have special reciprocal expressions but with all the person features of pronominals pose another type of problem.

To deal with these examples, we have a range of analytic options:

(i) revise or clarify the definition of “Anaphor” to save the universal by removing apparently exceptional cases, e.g. by arguing that the Abkhaz prefixes do not count as anaphors because they are bound affixes, or that Japanese *otagai* is not a true anaphor;

(ii) set up finer-grained categories, such as the difference between complex and simple anaphors along the lines proposed by Reuland and Koster (1991), and reformulate the universal claims so as to apply to only one subset. A variant of this approach is to propose a covert split between pronouns in a language like Mwotlap or Tinrin, such that formally identical pronoun forms are analysed as belonging to different classes when they function as reciprocal or reflexive anaphors;

(iii) abandon the claims to universality at the highest level of generalization, and particularize claims to certain constructional types. At the same time, the original phenomena, as described by Binding Condition A, may be seen as an epiphenomenon of how certain types of reciprocal expression (in particular binominal quantifiers) evolve diachronically – see Plank (this volume) on a plausible scenario.

It would be inappropriate to argue through these positions here, but it should be clear that the typology elaborated in this paper is of direct relevance to the debate, since it shows where counterexamples are to be found, and assists in clarifying the relation between reciprocal expressions and their exact grammatical status.

### 5.3. The issue of typological correlations

A further important role for typology is detecting correlations between different features of language systems. Ultimately, for reciprocal constructions, there are many types of correlations we will wish to test, between values on various of the dimensions elaborated above. Here are a few examples, pointing back where relevant to data discussed in this paper.

(a) Correlations between particular patterns of polysemy and particular constructions. For example it may be hypothesized that reflexive/reciprocal polysemy is found with verbal affixes, reciprocal nouns and reciprocal pronouns, but comitative/reciprocal polysemy is only found with verbal affixes and modifier strategies, never with actant marking strategies. Likewise it may be hypothesized

that binomial quantifiers never exhibit reflexive/reciprocal polysemy. These proposals escape falsification by the languages surveyed for this paper, but need to be tested against a broader sample.

(b) Correlations between particular constructions and syntactic features of the predicate or clause. For example, it might be proposed that if a language has several construction types, we can predict which will be chosen on the basis of the word-class expressing the predicate, or the syntactic relations holding between the reciprocants.<sup>58</sup>

(c) Correlations between constructions and semantic subtypes of reciprocals. For example one might find that, if a language distinguishes simultaneous from sequential reciprocals, or dual from plural reciprocals, then certain constructional alternatives will correlate with one semantic type. Everaert (2000: 78) voices the provocative claim that “it is evident that the semantics of reciprocals is quite diverse and complicated . . . but, surprisingly, it appears as if these semantic differences never have consequences for the distributional properties of reciprocals.”

A counter-example to this claim is the lack of extension of reciprocal constructions to “seriative” situations (‘the students followed one another onto the stage’) in at least some sign languages, such as Indo-Pakistani Sign Language (Zeshan and Panda forthcoming), which thanks to their greater ability to spatialize the semiotic medium possess a distinct construction for seriatives without apparent parallels (so far) in spoken languages.

(d) Correlations between constructions and semantic subclasses of lexeme. Kemmer (1993), for example, has proposed that “naturally reciprocal verbs” will allow encoding with “light” constructions, essentially defined by relative position on a hierarchy of constructional options. For details see Kemmer (1993).

(e) Correlations between distinct grammatical features of the construction, e.g. between type of exponent (verbal affix vs. bipartite quantifier) and effects on valence. We have already seen that a predicate-encoding strategy, sometimes asserted to induce a reduction in valence, does not always do so. A near-converse formulation, however, appears to hold on the data so far: binominal NP reciprocals never produce a change in valence. It likewise appears to be the case that no language combines a binominal NP strategy and a predicate-marking strategy in one construction. A next step in the typology of reciprocal constructions is to survey which strategies co-occur and which don’t.

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58. For some proposals of this type see König and Kokutani (2006).

(f) Implications of the presence of one strategy in a given language for the presence or absence of others. For example, König and Kokutani (2006) suggest that, even though many languages make use of more than one strategy, no language has both an “affixal” and a “deverbal” strategy.

To formulate and test any of these hypotheses, we first need to have a clearly formulated typology of each of the two dimensions we are looking at. This then creates a bi- or multi-dimensional matrix whose cells are predicted to be populated, or empty, according to the type of correlation we are interested in, as applied to our sample of languages. Some types of hypothesis (e.g. a, e) can be tested by cross-linguistic comparison of attested constructions without regard to the alternatives that exist in a single language. Others require us to look within the semiotic ecology of individual languages as well as making a cross-linguistic comparison (e.g. b, c, d, f).

#### 5.4. Diachronic transitions and intermediate categories

A separate task for typology is to formulate a set of claims about possible transitions between states, both to explain how each possible synchronic state can arise, and to account for intermediate constructions that appear to be in transition between the canonical construction types. Through the course of this article I have mentioned a number of attested transitions:

(a) from bipartite quantifier NP to reciprocal nominal, through fusion of the two elements, as in Basque *elkar* (Section 3.1.2);

(b) from possessed reciprocal nominal to free reciprocal pronoun, as expressions of the type ‘their bodies’ are reanalysed as reciprocal pronouns ‘they.each.other’, e.g. in Hausa; in other words, the head of the word shifts from the possessed noun to the pronominal affix;

(c) to verb-marking strategy via a number of routes: univerbation of verb + reciprocal auxiliary (Section 3.2.2), or main verb compounded with a mutual predicate like ‘meet’ (Section 4.3.1), or verb compounding with repeated one-way predicates, as in Mandarin (Section 4.3.2), or possibly also from the reanalysis of a bound reciprocal pronoun as a modifier of the verb’s diathesis; presumably reciprocal adverbs may also turn into verbal affixes, though no examples were considered in this paper.

The examples we have considered suggest that the diachronic pathways by which one reciprocal construction changes into another are rather constrained. There appear to be a number of unidirectional pathways of change, with verb-marking strategies being a “sink” fed by several pathways of development, and with

adverbial strategies feeding each of the other monoclausal strategies. A fuller consideration of diachronic pathways would also need to consider the way strategies for expressing related semantic notions, such as reflexives or comitatives, jump into the pathways linking reciprocal construction types, e.g. as reflexive clitics take on reciprocal functions as well. As yet, though, we lack the diachronic studies changes undergone by reciprocal constructions that are necessary before we can postulate well-founded diachronic universals limiting the types of transition found between one reciprocal construction and another (though see Plank this volume on the diachrony of bipartite quantifiers).

### 5.5. Envoi

The goal of this paper has been to illustrate the full range of constructions we know to be used for encoding mutuality in the world's languages. A comprehensive constructional typology is a precondition for a number of other enterprises in typology: the testing of universal claims, the formulation of correlational and implicational hypotheses, and the formulation of constraints on diachronic change between construction types. Though the typology developed here recognizes a much wider variety of constructional types than has been mentioned in the earlier literature, it is still likely to be incomplete, and one challenge this article creates is to find other constructional types that have not yet been discovered.

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# Constructions expressing middle, reflexive and reciprocal situations in some Oceanic languages

*Claire Moyse-Faurie*

## 1. Introduction

### 1.1. Linguistic area

This article<sup>1</sup> is concerned with the grammatical encoding of middle, reflexive and reciprocal situations in a few Austronesian languages, more specifically in languages belonging to the Oceanic subgroup, mainly Kanak (New Caledonian and Loyalty Islands subgroups) and Polynesian languages (Pacific Central subgroup). The twenty-eight Kanak languages spoken in the French territory of New Caledonia are highly diverse and show many complex features. The thirty Polynesian languages or so exhibit less diversity, but offer very interesting syntactic features. Although a lot of grammars, dictionaries and comparative studies have been written on these languages, there is still a lack of information on certain issues and more fieldwork is needed for a complete overview of the diversity of forms manifested by constructions expressing reflexivity and reciprocity. I will present the main characteristics of these structures in Kanak and Polynesian languages,<sup>2</sup> with an occasional look at other languages of the Austronesian family.

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2. Examples for which no specific sources are given are based on my own fieldwork and publications. I take this opportunity to thank my Polynesian friends and all my Kanak students and friends, especially Jacques Diéno (Iaai), Buko Dayé and Kovat Porou (Nêlêmwa), Didier Tiavouane (Caac), Gilbert Tein (Nemi), Pauline Hamene (Fwâi), Yolande Foawy (Hmwaveke), Angy Boehe (Ajië), Délisiane Thiaméa (Haméa), Alek Djoupa (Fagauvea), John Ouétcho (Numèè), Leonard Sam (Drehu) and Poera Ver-naudon (Tahitian).

## 1.2. Previous studies

Several descriptive and comparative studies (Lichtenberk 1991, 2000; Brill 2005, 2007; Moyse-Faurie 2007) have already been devoted to the affixal strategies used to express reciprocity and related functions, but none concerning the other strategies that may express reciprocity, and none concerning the expression of reflexivity and the constructions that it involves. Sometimes their very existence is denied: it is generally asserted that a number of genetically related Oceanic languages “have morphological markers used to encode reciprocal and certain other situations, but not reflexive situations” (Lichtenberk 2000: 31).

Indeed, as we will see, reflexive constructions do not always manifest the same degree of grammaticalization as middle and reciprocal ones; in particular, the constraints on their use are not identical. Moreover, reflexive markers are diverse and have no common formal origin,<sup>3</sup> whereas a middle/reciprocal prefix (*\*paRi-*) has been reconstructed for Proto Oceanic. Lichtenberk lists several different functions for this POC prefix, which fall within the semantic domain described by Pawley (1973) as “combined or repeated actions by a plurality of actors”. As for reflexive markers, they too have several functions; besides marking coreference between an agent/experiencer and a patient, they are often used as intensifiers, thus identifying remarkable events or unexpected participants; moreover, markers used for reflexivity may sometimes also function as verbs, adverbs or directionals.

How can we define and identify reflexive constructions and markers across languages? According to Faltz (1985: 3–4), “given any language, we can isolate a class of simple clauses expressing a two-argument predication, the arguments being a human agent or experiencer on the one hand and a patient on the other [...] If a language has a grammatical device which specifically indicates that the agent/experiencer and the patient in such clauses are in fact the same referent, then the grammatical device will be called the primary reflexive strategy of that language”. For Geniušienė (1987: 25), “the reflexive marker is broadly defined as an element in the verb (affix, ending, etc.) or its environment (particle, pronoun, etc.) which has (or once had) a reflexive meaning (of coreference of two semantic roles) as its only or one of many functions”. Finally, Heine and Miyashita (this volume: 172) assume that “reflexivity and reciprocity are universal concepts insofar as all languages can be expected to have some grammaticalized expression for both”. As will be shown below, Oceanic languages

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3. However, an obligatorily possessed noun *\*sibwa-* has been proposed by John Lynch as a Proto Oceanic form for a reflexive marker (see Section 7).

are no exception to this statement and offer a large spectrum of morphosyntactic devices to mark coreference.

### 1.3. Methodology

As is common in typological studies, a distinction will be drawn between “constructions” and “notional domains”. Even though such a distinction runs counter to the Saussurian concept of the sign it is essential in an area where markers often overlap.

#### 1.3.1. *Semantic domains and constructions*

In most of the languages taken into consideration in this paper, the semantic boundary between the middle domain and reflexivity, as drawn by Kemmer (1993), among others, correlates with both different morphological markers and morphosyntactic constructions. Middle and reciprocal situations often share the same morphosyntactic marker, but this marker is used in different types of constructions. The middle domain, as Kemmer defines it, includes grooming actions, movements and change in body posture, spontaneous events and “naturally reciprocal” situations, along with a certain “indistinguishability of participants”. The prototypical reflexive domain, by contrast, mostly concerns actions performed on oneself that one usually does to others, and it involves two participants which happen to refer to the same person. According to König and Kokutani (2006), reciprocity presupposes at least two participants in a symmetric relation or event, in which both play two different roles.

Inside each of these three semantic domains, we find both specifically marked constructions and unmarked ones. For instance, in the middle domain there are marked constructions as in the French clause *le feu s'éteint* ‘the fire extinguishes’, and unmarked ones, as in *l'eau bout* ‘the water boils’. More often than not, different ways of expressing middle, reflexive or reciprocal situations in one language will not match the strategies available in another language, even if the languages in question are genetically and geographically very close. However, there are also instances of similarity as a result of language contact or universal cognitive schemas.

Our semantic delimitation of the prototypical middle, reflexive and reciprocal domains may seem somewhat arbitrary, but it will turn out to be very useful, since Oceanic languages often have at least one different construction for each domain. Of course, there may only be a single construction covering the three semantic domains in some languages (as, for example, French *se* or the Hmwaveke prefix *pe-*, see Section 3.2.2), or several constructions may relate to the same semantic domain, as is the case for the two Danish reflexive

markers (Herslund 2002: 72) or the three Drehu ones (see Sections 4.2 and 4.3). Oceanic languages display many examples of this diversity and intricacy. In order to avoid confusion between forms and notions, we will start from the forms (types of markers and constructions), and, in a second step, look for the range of notions they convey. In the Oceanic languages investigated in this article, an intransitive construction with an unmarked predicate may express grooming actions ('wash', 'shave') and changes in body posture ('sit down', 'stand up'; cf. Section 2.1). A transitive construction with an unmarked predicate and a pronominal object obligatorily coreferential with the subject is found in Kanak languages such as Tîrî and Xârâcùù, and also in many Oceanic languages; this construction is obligatory with a few verbs – often called 'reflexive verbs' – denoting meteorological events or change in body orientation ('rise', 'turn') (see Section 2.2.1).

The intransitive construction with a prefixed predicate covers a large semantic domain, including depatientive, habitual, spontaneous events, collective and sociative situations and personal implication of the speaker as well as inherent and dual reciprocity.

The transitive construction with a prefixed predicate and a pronominal object coreferential with the subject is mostly used for prototypical reciprocity, although in a few Kanak languages it is also used to express reflexive situations.

The construction with a circumfixed predicate is the other main construction found in Oceanic languages to express reciprocity. When a circumfix is involved, and no pronominal object is added, the interpretation is reciprocal only if the construction remains intransitive. If the construction is transitive, a different range of interpretations (repetitive, frequentative, dispersive, etc.) is allowed, to the exclusion of reciprocity unless the symmetry relates to the beneficiary of ditransitive verbs.

Finally, a transitive construction with an unmarked predicate in which coreference between S and O is marked by an (ad)verb, a restrictive particle or an intensifier is mostly used to express prototypical reflexivity, even if it has extended its use to the reciprocal domain in a few languages. Table 1 summarizes the different constructions under study in this article and the corresponding semantic notions that they cover.

Although Table 1 manifests a great deal of overlap between constructions and semantic domains, which are not in an iconic relationship, some major tendencies can be observed:

- (i) Middle situations are expressed either by purely lexical means or by the intransitive affixal strategy,

Table 1. Constructions versus prototypical semantic notions in Kanak and Polynesian languages

CONSTRUCTIONS	SEMANTIC DOMAINS
<b>unmarked V, intransitive</b>	<b>middle situations</b> such as grooming actions or natural reciprocity
<b>unmarked V, transitive, with pronominal O obligatorily coreferential with S</b>	<b>middle situations</b> such as meteorological events or change in body position
<b>prefixed V</b>	<b>middle situations</b> , generic, habitual events; shared activity; spontaneous events; grooming actions, inherent and dual reciprocity
<b>prefixed V + pronominal O coreferential with S</b>	<b>prototypical reciprocal situations</b> (extended to reflexive situations in a few Kanak languages)
<b>circumfixed V</b>	<b>prototypical reciprocal situations</b>
<b>unmarked V, transitive, with coreference between S and pronominal O marked by a morpheme</b>	<b>prototypical reflexive situations</b> (extended to reciprocal situations in a few Kanak and Polynesian languages)

- (ii) Reciprocal situations are mainly expressed by the same affixal strategy as middle ones, combined with a pronominal strategy or a second affixal strategy,
- (iii) Reflexive situations are encoded by transitive constructions and mostly rely on the use of different types of intensifiers and adverbs.

To illustrate the range of possible forms and interpretations, I will now provide a few examples from two Kanak languages: Xârâgurè (south of the Mainland of New Caledonia) and Drehu (Lifu, Loyalty Islands).

a) Unmarked verb in an intransitive (cf. [1] and [3]) or transitive construction (cf. [2]). In transitive constructions, the meaning is ambiguous out of context, either reflexive or non-reflexive:<sup>4</sup>

(1) Xârâgurè

*nyärä nä pia rè dunämè a chuamè catoa*  
 3PL IMPF fight IMPF when DEIC star come.out  
 ‘They will fight when the star comes out.’

4. Examples without an indication of the source have been collected by the author in field work.

- (2) *nyî xati nyî*  
 3SG scold 3SG  
 ‘He is scolding him/himself.’

- (3) Drehu  
*kola isi la itre trahmany*  
 PROG fight ART PL man  
 ‘The men are fighting.’

b) Prefixed verb (reflexes of POC \**paRi-*) in an intransitive construction. Example (4) denotes either a sociative or a reciprocal situation, while example (5) is unambiguously reciprocal:

- (4) Xârâgurè  
*gwii pu-pia tù kwari*  
 IDU.EXCL PREF-war OBL grasshopper  
 ‘We are fighting together/each other about the grasshoppers.’

- (5) Drehu  
*kola i-xeleuth la lue tremehnayin*  
 PROG PREF-hug ART two fiancés  
 ‘The betrothed are hugging each other.’

c) Prefixed verb + pronominal object of same number and person as the subject (cf. [6]) or circumfixed verb (cf. [7]). These are the two constructions expressing prototypical reciprocal situations:

- (6) Xârâgurè  
*nyära naa pu-xwi rè nyära*  
 3PL IMPF.PST PREF-eat IMPF 3PL  
 ‘They used to eat each other (\*together).’

- (7) Drehu  
*itre lapa a i-xatua-keu kowe la ifaiipoipo*  
 PL clan IMPF PREF-help-SUF to ART wedding  
 ‘The clans are helping each other with the wedding.’

d) Unmarked verb in a transitive construction plus a specific marker. The coreference between S and pronominal O is marked by an adverb (cf. [8]) or an

intensifier (cf. [9]) in a transitive construction mostly expressing reflexive situations:

## (8) Xârâgurè

*nyî sa mûgé na nyî* (≅ *nyî sa na nyî mûgé*)  
 3SG hit again PST 3SG

‘He hit himself’ or ‘He hit him again.’ (‘He hit himself.’)

## (9) Drehu

*hnei angeic kö hna xe angeic*  
 SM 3SG INT PST smack 3SG

‘He smacked himself.’

In most Kanak and Polynesian languages as well as in most other Austronesian languages, contrary to German or French, but just as in English, prototypical reflexivity (REFL) and prototypical reciprocity (RECP) are not expressed by the same construction. Just as in Drehu and in Xârâgurè, this is also the case in many languages belonging to different Austronesian subgroups, such as Bahasa Indonesia, Tagalog, Chamorro (Western Malayo-Polynesian subgroup); Tetun and Taba (Central Eastern Malayo-Polynesian); Roviana, Kokota, Torau, Uruava (Meso Melanesian Cluster); Kwaio, Longgu (South-East Solomon); Micronesian languages, most of Vanuatu languages and Fijian. However, two kinds of exceptions are found:

- (i) RECP ⇒ REFL as a result of the diffusion of the prefixed verb + pronominal object construction into the reflexive semantic domain (cf. Section 3.2.2).
- (ii) REFL ⇒ RECP as a result of the diffusion of the reflexive marker into the reciprocal domain (cf. Section 4.5.2).

### 1.3.2. Degree of grammaticalization

The transitive constructions expressing reciprocity and those expressing reflexivity do not exhibit the same degree of grammaticalization. First, the coreferential pronominal object is linked to the presence of the prefix, while the reflexive marker (be it an intensifier or an [ad]verb) allows, but does not necessarily imply, a coreferential interpretation. Secondly, in most Oceanic languages, affixal constructions used to express reciprocity show a higher degree of grammaticalization than the ones used to express reflexivity, because the affixal construction is required for all persons (in spite of the lack of ambiguity with 1st or 2nd persons), whereas the constructions with intensifiers or (ad)verbs marking reflexivity are optional and mostly attested with 3rd persons for functional reasons, i.e.

in order to disambiguate between reflexive and non-reflexive situations. According to Faltz (1985), the primary reflexive strategy is optional in some languages (especially with 1st or 2nd person arguments), or it may have other functions, an emphatic one for example. This situation is said to be rare, although attested in Old English and in “a number of Malayo-Polynesian languages, as well as in some Pidgins and Creoles” (Heine and Miyashita this volume: 175; cf. also Heine 2005: 207). In actual fact, this situation – an optional reflexive strategy – is largely found in Oceanic languages, where the use of the reflexive markers is essentially a matter of pragmatics. In several Oceanic languages however, the reflexive marker is almost always expressed with 3rd persons, as it is specified for example by Bowden (2001: 167) for Taba (South Halmahera): “Although the use of *do* is strictly optional in all cases of reflexives, it is rather unusual for reflexive clauses with pronominally marked third person arguments to occur without *do*”.

We will now turn to the presentation of the different constructions, starting with the unmarked ones.

## 2. Unmarked constructions

### 2.1. Unmarked intransitive constructions denoting middle situations

Middle situations may be expressed through intransitive constructions.<sup>5</sup> Below are examples denoting grooming actions ([10a] and [11a]) and spontaneous events ([12a]) together with the corresponding non-symmetric transitive constructions ([10b], [11b] and [12b]):

(10) East Futunan

- a. *kua ma'anua a ia*  
 PRF bathe ABS 3SG  
 ‘He took a bath.’
- b. *kua faka-ma'anua e ia le toe*  
 PRF CAUS-bathe ERG 3SG ART child  
 ‘He gave a bath to the child.’

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5. As Margetts (1999: 334) puts it: “...actions which may be encoded in European language by reflexive constructions are often expressed in Saliba by simple intransitive verbs (e.g. ‘wash’, ‘shave’, etc.). I do not consider such verbs as reflexives here since they cannot participate in what I describe as the morpho-syntactic reflexive constructions.”

(11) Xârâcùù (Moyse-Faurie 1995: 75)

- a. *nâ xii*  
 ISG shave  
 ‘I am shaving.’
- b. *nâ xii è*  
 ISG shave 3SG  
 ‘I am shaving him.’

(12) Xârâcùù (Moyse-Faurie 1995: 76)

- a. *kwii bëchâ*  
 rope untie  
 ‘The rope is coming loose.’
- b. *nâ fa-bëchâ kwii rë*  
 ISG CAUS-untie rope POSS.3SG  
 ‘I untie him/her/it.’ (lit.: ‘I untie its/her/his rope.’)

Inherently reciprocal situations can generally be expressed by lexical means, relying only on the meaning of the predicate; but this is quite rare in Kanak and Polynesian languages. Exceptions come from languages which have lost the affixal construction as, for instance:

(13) Xârâcùù (Moyse-Faurie 1995: 75)

- ri tôôbùtù*  
 3PL put.together  
 ‘They are meeting.’

A few other symmetric situations may also be expressed lexically, such as similarity in kinship (but see the examples in [25] below, which use the prefix with nominal predicates):

(14) Paicî

- caapwi caa kë-ru*  
 one father POSS-3DU  
 ‘They both have the same father.’ (lit.: ‘Is one father of them two.’)

There are a few suppletive verbs that may be used to denote reflexive events, such as ‘look at oneself’ vs ‘look’: Drehu *xödra*, Nengone *therew* ‘look at oneself’ ≠ Drehu *goëën*, Nengone *ule* ‘look’. In East Futunan, total reduplication may, in a few cases, derive verbs expressing middle events from tran-

sitive verbs: *sa'i* ‘tie’ > *sa'isa'i* ‘be tied’; *selu* ‘comb’ > *seluselu* ‘comb one’s hair’.

## 2.2. Unmarked transitive constructions

### 2.2.1. The so-called ‘reflexive verbs’

Syntactic transitivity is not always linked to semantic transitivity and verbs are not equally admissible in different types of constructions. Some verbs may be restricted to one type of construction, while others are labile. In Xârâcùù, for example, an ordinary transitive construction including a pronominal object obligatorily coreferential with the subject is the only possible construction for a few verbs such as *basùù* ‘be blocked’, *pètoa* ‘be proud’, *pitèri* ‘roll oneself’, etc., which are only used as “pronominal” or “reflexive verbs”:

(15) Xârâcùù (Moyse-Faurie 1995: 77)

*kwé basùù è röwâ yee nã*  
 water blocked 3SG against bamboo DEIC  
 ‘Water is blocked up because of the bamboo.’

For Tîrî (also in Center South of the Mainland of New Caledonia), Osumi (1995: 252) lists a small class of verbs (*dreghe* ‘to fall and get injured’, *nêê* ‘to put on airs, to be proud’, *sevirro* ‘return’, and a few others with the bound form *-vesö* ‘in vain’) which have the same requirement:

(16) Tîrî (Osumi 1995: 255)

*nrâ sevirro nrî*  
 3SG turn 3SG  
 ‘He turned around.’

In Fijian, verbs such as *cibati* ‘collapse, faint’, *dokadokai* ‘(be) vain, haughty’, *bulibulî* ‘(be) power-hungry’, *tirovi* ‘to look at oneself’ also require that the subject and object be coreferential, and there is no potential ambiguity, even when a third person is involved:

(17) Fijian (Paul Geraghty, p.c.)

*e tirovi koya*  
 3SG look.at.oneself 3SG  
 ‘He looks at himself (\*him) in the mirror.’

In Paamese (North Central Vanuatu), there is a small class of verbs ('over-eat', 'do to excess/death', 'stop/stand', 'sit hunched up' and 'happy'; cf. Crowley 1982: 70) for which "there is a requirement that the object slot be filled by a pronominal form marking the same category distinctions as the subject" (Crowley 1982: 180):

- (18) Paamese (Crowley 1982: 180)
- a. *inau nasinau*  
ISG ISG.RLS.happy.ISG  
'I am happy.'
- b. *amutah kail haulu*  
3PL.RLS.overeat 3PL much  
'They overate a lot.'

In Sakao (North Central Vanuatu), Guy (1974: 53) describes a small set of 'reflexive verbs' such as, for example, 'to appear (for the sun)' "whose object must be supplemented by a personal pronoun agreeing with their subject".

Similarly in Kaliai-Kove (New Britain), there is "a small number of [verbs which] require the object person suffix to be in concord with the subject person prefix, giving rise to a set of reflexive verbs: start, arise, make ready, return, hide, rest, stand up, sit down, disperse, jump up" (Counts 1969: 74–75; for a list of verbs, cf. Counts 1969: 76):

- (19) Kaliai-Kove (Counts 1969: 75)
- ti-lua-ri*  
3PL-return-3PL.OBJ  
'They return.'

All of these examples show that there is a small class of non-derived verbs in Oceanic languages which require an object that is coreferential with the subject. The common semantic denominator of these verbs is that they describe a change of orientation, a change of emotion or an excessive behaviour.

### 2.2.2. *Non-restricted transitive verbs*

The majority of transitive verbs are not restricted in any way, as far as the choice of an object is concerned; if the latter turns out to be a pronoun of the same person and number as the subject, the interpretation can be ambiguous out of context. In Numèè, for instance, the relevant sentences are ambiguous between a reciprocal and a disjoint interpretation:

(20) Numèè

*treâ trooke nê kwè nê*  
 ART.PL dog 3PL bite 3PL

‘The dogs are biting them/each other.’

However, this kind of ambiguity between a reciprocal and a disjoint situation is quite exceptional in Oceanic languages, whereas ambiguity between a reflexive and a disjoint situation is more common, due to the lower degree of grammaticalization of the reflexive markers.

Let us now examine the different types of marked constructions, where the verb has one or several affixes (Section 3), or the sentence includes a specific morpheme indicating co-reference (Section 4).

### 3. The affixal strategies

#### 3.1. Prefix only

##### 3.1.1. Middle situations without reciprocity

As was shown above, middle situations can be expressed by lexical means only. However, situations belonging to the middle domain most often require a prefix<sup>6</sup> that is cognate with the Proto Oceanic prefix \**paRi-*, in an intransitive construction. This construction is used for several types of situations, mostly grooming actions, collective (‘doing something together’), generic or habitual situations, and also for reciprocal events. Here are examples of some of the prefix values in Kanak languages (see Brill 2005 for more examples):

#### (i) Grooming actions

(21) Xârâcùù (Moyse-Faurie 1995: 97)

*è ù-cù*  
 3SG PREF-comb

‘She is combing her hair.’<sup>7</sup>

6. In a few cases, lexically reciprocal verbs (symmetric predicates) result from the fusion of the prefix with the root; i.e., the root does not exist by itself anymore, e.g.: Nengone *eked* ‘assemble’ (*buice ci eked* ‘they are gathering’), *ethanata* ‘speak’, *itic* ‘exchange’; Xârâgurè *pupuu* ‘meet, gather’, *puité* ‘race’; East Futunan *fetai* ‘fight’, *fetogi* ‘exchange’; Nêlêmwa *penudavi*, *perui* ‘meet’, etc. (prefix in bold characters).

7. Verbs of grooming actions may also be involved in ordinary transitive constructions, with a direct object referring to a body part followed by its suffixed possessor; with 1st

(22) Iaai

*ame*      *û-gi*  
 3SG.IMP    PREF-shave  
 ‘He is shaving.’

(ii) Depatientive/antipassive functions<sup>8</sup>

In these cases the event only concerns the initiator, giving it a generic or habitual interpretation as in Drehu *xumuth* ‘pinch’, *i-xumuth* ‘be a pincher’; *drei* ‘obey’, *i-drei* ‘be obedient’; or in Iaai *oloû* ‘bite’, *û-hûlû* ‘be a biter’, etc.

(iii) Inherently reciprocal events:

The use of only the prefix to express reciprocal situations is limited to a few symmetric predicates, mainly verbs of communication or exchange, such as ‘fight’, ‘meet’, ‘marry’, ‘agree’, ‘speak’, ‘discuss’, ‘argue’.

(23) Paicî

*ru*    *pi-tûra*      *wë*      *Pwâdé mâ*    *Ûtê*  
 3DU    PREF-discuss    ART.PERS    Pwâdé and    Ûtê  
 ‘Pwâdé and Ûtê are talking to each other.’

(24) Cèmuhi

*lu*    *pi-cihê*      *ö*      *lupwö*    *apuliè*  
 3DU    PREF-speak    ART.PERS    ART.DU    man  
 ‘The two men are talking to each other.’

The predicate may also be a dependent verb or a nominal, but still take the prefix, plus a possessive suffix and sometimes a comitative argument:

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and 2nd persons of the same number and person, coreference is the only interpretation as in the following Xârâcùù example:

(i) *nâ*    *cù*      *bwaa-nâ*  
 1SG    comb    head-POSS1SG

‘I am combing myself’ (lit.: ‘I comb my head’).

With 3rd persons, *è cù bwaa-rè* can mean either ‘he combs him’ or ‘he combs himself’; the affixal construction will therefore be preferred if coreference is intended.

8. The antipassive function of the Drehu or Iaai prefixes is reminiscent of the Russian *-sja* suffix as in *sobaka kusaet-sja* ‘The dog bites’.

- (25) Paicî
- a. *pi-böru-jè*  
 PREF-cross cousin-POSS. IPL.INCL  
 ‘We are cross-cousins.’
- b. *pi-nêê-ru mâ wë Kaapo*  
 PREF-name-POSS.3DU with ART.PERS Kaapo  
 ‘He has the same name as Kaapo.’ (lit.: ‘... their two same name with Kaapo.’)
- (26) Cèmuhî (Rivierre 1980: 259)
- pi-tagèhê-lu*  
 PREF-regret-3DU  
 ‘They are longing for each other.’
- (27) Nemi
- pe-doi-lu* or *pe-wade-lu*  
 PREF-year-3DU PREF-generation-3DU  
 ‘They both have the same age.’

### 3.1.2. Reciprocity limited to two participants

In Nengone, the prefix *i-/e-* alone is used to express reciprocity with verbs of communication or perception, such as *ule* ‘see’, *kai* ‘call’, *ala* ‘love’, whenever only two participants are involved. With other verbs, the prefix mostly marks collective situations. Hence, the difference between dual and plural reciprocals<sup>9</sup> in Nengone:

- (28) Nengone
- a. *bushengon ci i-ule* (\**bushengon ci i-ule-jeu*)  
 3DU IMPF PREF-see  
 ‘They are dating.’
- b. *bushengon ci e-konekatu* (\**bushengon ci e-konekatu-jeu*)  
 3DU IMPF PREF-help  
 ‘They help each other.’

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9. Heine and Miyashita (this volume) give similar examples from the Hualapai language of Arizona, another language in which some speakers distinguish between dual and plural reciprocals.

The same situation is found in Drehu, with verbs such as *xatua* ‘help’ > *i-xatua* ‘help each other’, *aba* ‘kiss’, *wej* ‘run after’, etc. Another example is provided by East Futunan, which has a prefix *fe-* that can mark reciprocity involving no more than two participants, although its primary function is to encode sociative/collective situations. The dual reciprocal meaning appears with about a dozen verbs (‘disagree’, ‘kiss’, ‘push’, ‘pursue’, ‘tell’, ‘rub’, etc.):

## (29) East Futunan

- a. *e tuli e Petelo lona gā taina*  
 NSPC chase ERG Petelo his CLSF brother  
 ‘Petelo is chasing his little brother.’
- b. *e fe-tuli a lāua*  
 NSPC PREF-chase ABS 3DU  
 ‘These two are chasing each other.’

## 3.1.3. Non-dynamic or habitual reciprocity

In Drehu, the use of the prefix *i-* is sufficient to express reciprocity with verbs of emotion or perception, when no movement or effort is needed, as in non-dynamic, habitual states. Verbs such as *atre* ‘know’, *hnim* ‘be in love’, *wesitrë* ‘argue’, *xöle-maiwai* ‘hate’ may convey reciprocity by simply adding the prefix:

## (30) Drehu

- angatr a i-hnim*  
 3PL IMPF PREF-love  
 ‘They are in love with each other.’

These verbs can also occur with a circumfix (see Section 3.3.1 below for the differences in meaning).

## 3.2. Proto Oceanic prefix + pronominal object

Transitive verbs (except the compulsory ‘pronominal’ verbs mentioned in Section 2.2.1) may take the prefix in both intransitive and transitive constructions. With the intransitive construction, the situations are similar to those previously described, i.e. to middle situations. The transitive construction encodes reciprocal events, plus related values such as distributive, iterative or dispersive situations. Here, I will primarily consider the affixal construction expressing reciprocal situations, leaving aside the other semantic values of this construction studied by Lichtenberk (2000), Brill (2007) and Moyse-Faurie (2007).

The opposition between the prefix in an intransitive construction mainly conveying a middle value, on the one hand, and the very same prefix entering a transitive construction with mainly a reciprocal meaning, on the other, is found in many Oceanic languages:

- PREF-V<sub>INTR</sub> ‘fight together’  
 PREF-V<sub>TR</sub> O ‘fight each other’.

### 3.2.1. Reciprocal situations

In most Kanak languages of the Mainland which use the affixal strategy, the presence of a pronominal direct or indirect object argument is compulsory for expressing reciprocity without ambiguity. In these languages, the distinction between the middle and the reciprocal situations is therefore marked by a difference in valency, insofar as middle situations are expressed through intransitive constructions whereas reciprocal situations (as well as reflexive ones) require constructions including a pronominal object argument. For this reason, I cannot completely agree with Lichtenberk (2000: 34) when he states that “the relevant participants play identical pairs of roles and [...] in the Oceanic languages they are encoded only once (in subject position).”

The construction comprising a prefix and an overt pronominal object is a transitive one, and the participants, which happen to have identical referents, are encoded twice, even if there is no possible choice for the object, which must be a pronoun of the same number and person as the subject. Quite clearly, the presence of this pronominal object is required to mark reciprocity with verbs denoting violent actions, or actions which do not necessarily involve symmetry, such as ‘help’, for example. It is the prefix that marks coreference between the subject and the pronominal object, which may be either a direct or an indirect one, depending on the verb class.

#### 3.2.1.1. The object pronoun is a direct object

In Xârâgurè, with verbs such as *xwi* ‘eat (meat)’ (see example [6] above), *tia* ‘split’, *kêgai* ‘pinch’, *sa* ‘hit’, *faaté* ‘pursue’, *ciwi* ‘help’, *fêtaa* ‘separate’, etc., the pronominal object is obligatory for the encoding of a reciprocal meaning:

- (31) Xârâgurè  
 a. *pa-Mwâjoaru pu-tia nyärü nëëra*  
 COLL-Mwâjoaru PREF-separate 3PL today  
 ‘The Mwâjoaru are splitting up today.’

- b. *nyärä pu-kêgai nyärä*  
 3PL PREF-pinch 3PL  
 ‘They are pinching each other.’  
 (cf. the middle construction *nyärä pu-kêgai* ‘They pinch/they are pinchers.’)

In Cèmuhî, the pronominal object is required with verbs such as *taunu* ‘kill’, *wii* ‘bite’, *tapiti* ‘gather’ and *nua* ‘visit’, among others:

- (32) Cèmuhî  
*lé pi-tapiti lé nâko ni pulè nê ni mwa*  
 3PL PREF-gather 3PL about ART.PL land SM ART.PL clan  
 ‘The clans met because of the land.’

Analogous structures can be found in Paicî with verbs such as *uti* ‘bite’, *pwötëm-wârâ* ‘kill (with a club)’, *kênâri* ‘shout’, *wâdéari* ‘affectionate’, *côô* ‘recognize, look at’,<sup>10</sup> etc.:

- (33) Paicî  
*ru pi-wâdéari ru i du èpo*  
 3DU PREF-affectionate 3DU ART DU child  
 ‘The two children are attracted to each other.’

Moreover, some Paicî verbs require a transitive suffix in order to admit the pronominal object. The result is – more often than not – a specifically reciprocal interpretation, not derivable in a completely compositional fashion, as shown in example (34) with ‘look’ > ‘observe’, implying effort or attention:

- (34) a. *ru pi-ucâ*  
 3DU PREF-look  
 ‘They look together/at each other.’  
 b. *ru pi-ucâ-rî ru*  
 3DU PREF-look-TR 3DU  
 ‘They observe each other.’

In Nêlêmwa (Far North of the Mainland, New Caledonia), according to the data given in Brill (2002), the pronominal object seems to be obligatory with

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10. Compare the symmetric construction *ru pi-côô ru* ‘They look at each other’ with the non-symmetric one *ru pi-côô i atë* ‘They are together looking at the basket’.

verbs denoting violent actions ('hit', 'eat', 'pinch') as well as with verbs such as 'know', 'gather', etc.

(35) Nêlêmwa (Bril 2002: 174)

*hli pe-cabwa-hli*  
 3DU PREF-pinch-3DU  
 'They are pinching each other.'

### 3.2.1.2. *The object pronoun is an oblique object*

With verbs taking prepositional objects, the coreferential pronominal object is introduced by an oblique preposition:

(36) Paicî

*ru pi-wâdé tē ru wëilu*  
 3DU PREF-good OBL 3DU ART.PERS.3DU  
 'They love each other.'  
 (cf. with only the prefix: *ru pi-wâdé* 'They get along well [between siblings].')

(37) Cèmuhi

*lu pi-cani ko lu ö lupwö pwömwaiu*  
 3DU PREF-help OBL 3DU ART.PERS ART.DU family  
 'The two families are helping each other.'

### 3.2.2. *Reciprocal and reflexive uses*

Languages spoken in the Hienghene area (Nemi, Fwâi, Pije, Jawe) of the New Caledonian Mainland, as well as Cèmuhi and at least some of the Voh-Koné dialects (Centre of the Mainland, such as Hmwaveke) use markers related to the Proto Oceanic \**paRi-* prefix in a transitive construction that may have either a reflexive or a reciprocal interpretation. Consequently, with dual or plural arguments, the construction is ambiguous. Of course, this ambiguity of form does not mean that the speakers of these languages do not differentiate between reflexive and reciprocal situations – if necessary, they do so by adding disambiguating adverbs – even if French is not the best language to clarify this semantic difference to informants. In these languages, only two constructions cover the three semantic domains under discussion, both including a reflex of the Proto Oceanic prefix:

a) A reciprocal situation may be expressed by an intransitive construction, with verbs like ‘speak’, ‘fight’, ‘kiss’:

- (38) Hmwaveke  
*le ve-vulo*  
 3PL PREF-speak  
 ‘They speak to each other.’

b) A transitive construction will have either a reflexive or a reciprocal interpretation when arguments are in the dual or plural:

- (39) Hmwaveke  
*le ve-caina le*  
 3PL PREF-know 3PL  
 ‘They know each other/themselves.’

c) A transitive construction with singular object pronoun will have only a reflexive value:

- (40) Hmwaveke  
*yo ve-ibi yong*  
 ISG PREF-pinch ISG  
 ‘I am pinching myself.’

Note in the last example the presence of the prefix even with 1st or 2nd person arguments, which shows the high degree of grammaticalization of the prefixed construction.

In the languages where reflexive and reciprocal situations are encoded by the same construction, the prefix may also co-occur with the exclusive adverbial marker ‘alone’, as shown in example (41) in Nemi:

- (41) Nemi  
*ye pe-pmwai gaeno-i vi nga-n*  
 3SG PREF-build alone-TR ART.ANPH house-POSS.3SG  
 ‘He built his house himself.’

The conflation of reflexivity and reciprocity is also found in other Oceanic languages. Such is the case in Xârâcùù (cf. Section 4.5.2), in Toqabaqita (cf. Section 4.5.4) or in Eastern Polynesian languages (cf. Section 4.6) but only in constructions which do not involve the Proto Oceanic prefix \**paRi-*. Since the

Proto Oceanic prefix is attested in many languages in middle and reciprocal situations, but very seldom in reflexive ones, it seems obvious to opt for an explanation implying an extension of the middle/reciprocal marker to the reflexive domain, and not vice versa. The historical and typological implications of the Kanak data will be dealt with in the conclusions (Section 8).

### 3.3. Circumfix only

#### 3.3.1. *Intransitive construction*

The use of a circumfix to mark reciprocity along with other related meanings is mainly attested on the Loyalty Islands and Western Polynesian languages, as well as in Fijian. Brill (2007) also mentions identical cases in Nêlêmwa, where a reciprocal suffix may replace the pronominal object:

- (42) Nêlêmwa (Brill 2007: 1489)  
*hli pe-weeng-i*  
 3DU PREF-agree-SUF  
 ‘They agreed with each other.’

In some Polynesian and Loyalty Island languages, two kinds of circumfixes co-exist, one of them expressing mostly sociative situations, and the other reciprocal situations, both with the same prefix, namely a reflex of POC *\*paRi-*. Tongan, East Futunan, Samoan, Rennellese or Nukuoro, for example, have different reflexes of Proto Polynesian *\*fe-...-(C)i* versus *\*fe-...-(C)aki*. According to Carroll and Soulik (1973), Nukuoro (Polynesian Outlier) uses two circumfixes:

- (i) the circumfix *he-...-hagi* for reciprocal situations: *he-sui-hagi* ‘exchange, trade’, *he-sili-hagi* ‘to pass each other on intersecting courses’;  
 (ii) the circumfix *he-...-i* to express sociative situations: *he-lele-i* ‘fly at the same time’.

The Samoan circumfix *fe-...-(C)i* is unproductive. It is used with about fifteen verbs to mark plurality of participants or events and with a few others for sociative situations, while *fe-...-(C)aki* is more productive and marks reciprocity along with other related values (Mosel and Hovdhaugen 1992: 182–184). In Drehu and Nengone (Loyalty Islands) there are also two circumfixes, one for reciprocal situations (Drehu *i-...-keu*, Nengone *e-...-jeu*), and one for sociative situations: Drehu *i-...-ny*, Nengone *e-...-o*. The sociative circumfix is often either a fossilized form or only used with a few verbs. In these languages, an adverb meaning ‘together’ (Drehu *ce*, Nengone *sese*) is used for sociative situations, without any additional marking on the verb:

## (43) Drehu

*Lue jajiny me lue trahmany a ce lapa ngöne*  
 two girls and two boys IMPF together sit on

*iba.*

bench

‘Two girls and two boys are sitting together on a bench.’

The circumfix expressing reciprocity, by contrast, is very productive. In the three Melanesian languages of the Loyalty islands (Iaai, Drehu, Nengone), the suffixed part of the reciprocal circumfix is required in combination with most verbs in order to express reciprocity. However, as mentioned earlier (cf. Section 3.1.3), with a few Drehu verbs denoting habitual perception or emotion, the suffix is not allowed or necessary for expressing reciprocity. Besides, we have seen that in Nengone, Drehu and East Futunan, reciprocity limited to two participants is also encoded by a construction including only the prefix (cf. Section 3.1.2).

The presence of a suffix in addition to a prefix will prevent a collective interpretation with verbs such as *rede* ‘fight’ in Nengone, which may enter both constructions:

## (44) Nengone

a. *ehnij hna e-red*  
 IPL.EXCL PST PREF-fight

‘We fought (each other or others).’

b. *ehnij hna e-rede-jeu*  
 IPL.EXCL PST PREF-fight-SUF

‘We fought each other.’

The suffix is compulsory (that is, the prefix alone is not allowed) in Nengone with verbs such as *tusi* ‘write’, *kuli* ‘bite’, *pareu* ‘respect’, *hnyingëene* ‘inform’, *xou* ‘be afraid’, *caas* ‘one’, *thura* ‘marry’, *ala* ‘love’, etc.:

(45) a. *ore pailai ci i-kuli-jeu* (\**i-kuli*)  
 ART dog IMPF PREF-bite-SUF

‘The dogs are biting each other.’

b. *ore ngom ci e-pareu-jeu* (\**e-pareu*)  
 ART man IMPF PREF-respect-SUF

‘The men respect each other.’

When optional, the presence of the suffix often signals an important number of participants, with aspectual implications still to be investigated. Moreover, in Drehu, the use of the circumfix with verbs of perception and emotion also expresses an idea of movement, of willingness, of effort (cf. [30] above, in which non-dynamic reciprocity was illustrated):

## (46) Drehu

*tro epun a i-hnimi-keu*  
 FUT 2PL IMPF PREF-love-SUF  
 ‘You must love each other.’

Among Western Polynesian languages, the use of the Proto Polynesian circumfix \**fe-...-(C)aki* is quite productive in East Futunan, East Uvean and Tongan, but less so in Tokelauan or Tuvaluan; the circumfix appears in an intransitive construction if the situation is meant to be symmetric.

## (47) East Uvean

*ha'u pē koe ke tā fe-tā-'aki*  
 come RSTR 2SG that IDU.INCL PREF-fight.with.bare.hands-SUF  
 ‘Come along and let's fight each other with bare hands.’

## (48) East Futunan

*ofolele kua fe-tio-'aki le sā tagata o lā*  
 suddenly PRF PREF-see-SUF ART CLSF man and 3DU  
*fe-iloa-'aki*  
 PREF-know-SUF  
 ‘Suddenly the two men looked at each other and recognized each other.’

In distributive, dispersive, iterative, etc. situations, by contrast, the construction remains transitive with an overt object:

(49) *e fe-futi-'aki le toe le ma'ea o le lūlū'aga*  
 IMPF PREF-pull-SUF ERG child ART rope POSS ART swing  
 ‘The children are pulling the rope of the swing in every direction.’

According to Besnier (2000: 214), the Tuvaluan preverb *fakatau*, which also occurs as a verb meaning ‘compete, exchange’, is more productive than the circumfix for expressing reciprocity, in spite of the fact that the construction can induce different meanings (cf. [50a]). When either the circumfix or quantifiers are added (cf. Section 5), reciprocity is the only possible interpretation (cf. [50b]):

(50) Tuvaluan (Besnier 2000: 214)

- a. *tamaliki koo fakatau koukkou*  
 child INCH compete bathe.PL

‘The children are washing each other’ or ‘The children are holding a washing-up competition’ or ‘The children are washing themselves over and over again.’

- b. *tamaliki koo fakatau fe-tuli-aki*  
 child INCH compete PEF-chase-SUF

‘The children are chasing one another.’

Reciprocity in East Futunan may also be expressed by the preverb *fetau* ‘simultaneously’ (a compound of the prefix *fe-* < POC \**paRi-* and *tau* ‘from time to time, often’) but, in contrast to Tuvaluan, it cannot be associated with the circumfix *fe-...-’aki* in the case of a reciprocal interpretation. However, it can by itself convey a reciprocal meaning if the predicate has only one overt argument:

(51) East Futunan

- na fetau ’u’uti a kulī*  
 PST simultaneously bite ABS dog

‘The dogs have bitten each other.’

In contrast to Tuvaluan, the East Futunan affixal strategy is much more productive than the adverbial one.

### 3.3.2. *The circumfix plus a pronominal object*

Let us now look in detail at the various constructions found in Iaaī – the Melanesian language spoken in Uvea, Loyalty Islands – where the circumfix consists of the prefix *i-* (+ labial consonants and rounded vowels, *û-* [y] elsewhere) and of the suffix *-kōu* [kəu] (Ozanne-Rivierre 1976: 176). Here again, the construction including only the prefix expresses middle or collective situations, and only with a few verbs does it express reciprocity, the circumfix being most often required. But what is worth mentioning in Iaaī is the fact that with verbs expressing violent, other-directed actions, a pronominal object is necessary in addition to the circumfix in order to produce a non-ambiguous reciprocal meaning.

(a) Unmarked transitive construction (non-symmetric situation)

- (52) Iaaï  
*ödree kuhw-ödrin*  
 3DU.PST shoot-3PL  
 ‘They shot at them.’

(b) Only the prefix (collective/sociative situation)

- (53) *ödrine û-kûc hnyi litr bekhöt*  
 3PL.RSTR.PRS PREF-fight during night all  
 ‘They fight all night.’

(c) Circumfix

A reciprocal interpretation is obtained with verbs denoting emotions or perceptions:

- (54) *ödrine i-hmehmë-köu*  
 3PL.RSTR.PRS PREF-be.ashamed-SUF  
 ‘They are ashamed of each other.’

With verbs denoting violent actions, the use of the circumfix alone conveys a sociative meaning, as in (55a), and a reciprocal meaning whenever a pronominal object follows (cf. [55b]):

- (55) a. *ödree û-kuhwa-köu*  
 3DU.PST PREF-shoot-SUF  
 ‘They shot together.’  
 b. *ödree û-kuhw-ödrin-köu (hmetu)*  
 3DU.PST PREF-shoot-3PL.RSTR-SUF (again)  
 ‘They shot at each other.’

Note in the last two examples the optional presence of *hmetu* ‘again’, which here reinforces the reciprocal meaning. We will see later on (cf. Section 4.5.3) that *hmetu* is also used in Iaaï to express reflexivity.

### 3.3.3. The Fagauevan case

Fagaueva (also known as “West Uvean”), the Polynesian outlier spoken in Uvea (Loyalty Islands), which has been in contact with the neighbouring Melanesian

languages Iaaï (also spoken in Uvea) and Drehu (Lifu) for several centuries, does not use the Proto Polynesian circumfix *\*fe-...-(C)aki* which, as we have seen, plays an important role in East Futunan and other Western Polynesian languages; it has only retained the prefixed part, which combines with the suffix *-keu*, which has obviously been borrowed from the neighbouring languages.

The prefix *fe-* used by itself indicates ‘natural’ reciprocal events: *fe-aatu* ‘to argue with each other’, *fe-songi* ‘kiss (each other)’, *fe-tuku* ‘take leave of each other’, etc. Combined with the suffix *-keu*, it marks reciprocity with verbs denoting violent actions, such as *fe-linge-keu* ‘kill each other’, *fe-tuki-keu* ‘bump into each other’, *fe-u-keu* ‘bite each other’, *fe-liko-keu* ‘pursue each other’, *fe-tule-keu* ‘to push each other’, etc. as well as with verbs of exchange such as *fe-tapa-keu* ‘call each other’, *fe-pulou-keu* ‘exchange clothes’, etc. In this case, the Western Polynesian circumfixed construction is preserved in its form, even though the suffix has been changed.

In Fagaueva, the suffix may occur all by itself; it occurs mostly with verbs of perception or emotion in its reciprocal use: *maa-keu* ‘be ashamed of each other’, *maalie-keu* ‘get along with each other’, *kakai-keu* ‘tell story to each other’, *moonyi-keu* ‘be angry at each other’, *fuletenua-keu* ‘criticize each other’, and other events such as *okatue-keu* ‘help each other’, or symmetric situations such as *ivitua-keu* ‘be back to back’:

(56) Fagaueva

*lua fafine, o gilaa kilo-keu, o gilaa malingi ola*  
two woman PRF 3DU look-SUF PRF 3DU flow their  
*suamata*  
tear

‘The two women, they looked at each other, and burst into tears.’

Moreover, the suffix alone is also found with verbs denoting grooming actions: *selu-keu* ‘comb each other’, *gii-keu* ‘shave each other’, etc. or in collective situations: *kata-keu* ‘laugh together’, *mako-keu* ‘sing together’, *inu-keu* ‘drink together’, *kai-keu* ‘eat together’, etc. However, the verb+suffix complex can be transitivized and have a pronominal object as in example (57). The meaning of such constructions is unambiguously a reciprocal one:

- (57) *i dinei goi gilea kai-keu-ina gilehea* (V-KEU-TR-O)  
at here INCH 3PL eat-SUF-TR 3PL  
‘Here, they are still eating each other.’

Thus, in Fagauvea, expressing reciprocity may comprise a construction including a pronominal object in addition to the affix, and here again, this construction has obviously resulted from contact with Iaaï. This Polynesian outlier language offers a good example of how languages can borrow a grammatical morpheme (*-keu*) following the loss of the inherited form Proto Polynesian *\*(C)aki* with the same function, just as it can borrow a new structure in a construction with the circumfix and a pronominal object.

Let us now examine the different constructions found in Kanak and Polynesian languages expressing reflexivity, which fundamentally differ from the previous ones insofar as they are not based on an affixal strategy.

#### 4. Adverbial strategy marking coreference between S and O

With the exception of the Northern and Central Kanak languages (see Section 3.2.2), reflexes of the Proto Oceanic prefix also found in other Kanak, Fijian and Western Polynesian languages only occur in constructions expressing middle and reciprocal situations, but not reflexive ones. In Eastern Polynesian languages, the prefix is not attested any longer.

Constructions expressing reflexivity in Austronesian languages include markers of diverse origins, either lexical (noun, verb, adverb) or grammatical (directional, deictic, emphatic or restrictive particles); more often than not, these markers also have other functions. However, in spite of their diversity, they all have at least one function in common, the one of marking the coreference between two arguments in transitive constructions. Most of these markers also cover intensifying functions<sup>11</sup> such as:

- the adnominal use: ‘The chief *himself* will come to the meeting’
- the adverbial exclusive use: ‘My father cooked the meal *himself*’
- the attributive use: ‘His *own* son betrayed him’.

The inclusive adverbial use (‘John was himself sick last month’), by contrast, is not attested in Oceanic languages.

As shown by König and Siemund (2000), intensifiers play an important role in the genesis, reinforcement and renovation of reflexive anaphors and indeed this is how English marks reflexivity: ‘John pinches *himself*’.

Oceanic languages offer a good illustration of the different sources of intensifiers listed by Schladt (2000), König and Siemund (2000) and König and Gast (2006) and even add a few others to these lists. The most common source

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11. The terminology is based on König and Siemund (2000), König and Kokutani (2006) and König and Gast (2006).

(body part > intensifiers), however, is not the most frequently attested one in Oceanic languages. Such intensifiers, which are also used to mark reflexivity, are found in Kwaio (South-East Solomon; *labe*-POSS ‘body-POSS’; cf. [58] and Keesing 1985), and in Lolovoli (North Central Vanuatu; *sibo*-POSS ‘self-POSS’; cf. Hyslop 2001), but not in many other languages.

(58) Kwaio (Keesing 1985: 167)

*ngai a aga-si-a labe-na naa ilonunu*  
 3SG.FOC 3SG see-TR-3SG body-POSS.3SG LOC mirror  
 ‘He saw himself in the mirror.’

Oceanic intensifiers and other markers of reflexive coreference mainly come from (stative or dynamic) verbs (‘true, exact’ [stative verb]; ‘return’<sup>12</sup>; ‘be like’<sup>13</sup>), adverbs (‘alone’, ‘again’, ‘downwards’, ‘backwards’), nouns (‘responsibility’), or modal particles (contrastive, restrictive or ‘focusing’ particles), as well as from the adjective ‘other’. Even if all these markers are part of constructions expressing reflexivity, they do not assume all the different functions listed for the intensifiers above. There is variation depending on the kind of marker, and there are differences between each language. Where English uses a specific particle for the attributive use, for instance, other languages, such as Nengone or Tahitian, use the same intensifier for the attributive, adnominal, exclusive adverbial and reflexive uses, but not for the inclusive adverbial use.

#### 4.1. Emphatic, restrictive or contrastive particles

In Drehu and Nengone (Loyalty Islands) as well as in Western Polynesian languages, coreference is marked by an intensifier (emphatic or restrictive particles), usually placed after the pronominal object. In Nengone, the intensifier *ko* has all of the following uses: attributive (cf. [59]), adnominal (cf. [60]), exclusive adverbial (cf. [61]) and reflexive (cf. [62]):

(59) Nengone

*Pier ci ikuja ne tei bone ko haicahman*  
 Pier IMPF be jealous with child his INT male  
 ‘Pier is jealous of his own son.’

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12. Among languages using the ‘return/come back’ strategy, Schladt (2000) mentions two Oceanic languages: Paamese (Vanuatu) and Vangunu (New Georgia, Solomon), along with Sanumá (Yanomam, Brazil, in Borgman 1991: 43). In fact, many languages use this strategy in Oceania.

13. As in Dyrirbal, Finnish and Fijian; see example (96c) from Fijian.

- (60) *doku ko ko co hue bot co ethanata ne eje*  
 chief INT that FUT come DIR FUT speak with IPL.INCL  
*orore*  
 tomorrow  
 ‘The chief himself will come and speak to us tomorrow.’
- (61) *inu ha co rue ko bone*  
 1SG PRF FUT do INT 3SG  
 ‘I’ll do it myself.’
- (62) *Maria ci opodone ti bone ko*  
 Maria IMPF proud concerning 3SG INT  
 ‘Maria is proud of herself.’

In Western Polynesian languages, intensifiers have the same extended use as in the languages of the Loyalty Islands. In East Futunan, for example, the restrictive particle *fa’i* has adnominal (cf. [63]), exclusive adverbial (cf. [64]), attributive (cf. [65]) and reflexive uses (cf. [66]):

- (63) East Futunan  
*na lā ’aga o tae le velosaga a lāua*  
 PST 3DU to.face COMP pick.up ART army POSS 3DU  
*mei Fikavi fa’i*  
 from Fikavi INT  
 ‘They were picking up their warriors in Fikavi itself.’
- (64) *ko au fa’i na seu ia le mala’e*  
 PRED ISG INT PST sweep ANPH ART courtyard  
 ‘I swept the courtyard myself.’
- (65) *ko lo’oku fa’i leia a sauga*  
 PRED mine INT DEIC APP odour  
 ‘This is my own odour.’
- (66) a. *na ako’i le tagata e ia fa’i*  
 PST teach ART man ERG 3SG INT  
 ‘The man taught himself.’
- b. *e ’ita a Petelo kiate ia fa’i*  
 NSPC be.angry ABS Petelo OBL 3SG INT  
 ‘Petelo is angry at himself.’

The preceding examples justify the conclusion that, in East Futunan, reflexivity may be marked on either ergative arguments (cf. [66a]) or oblique arguments (cf. [66b]), under specific conditions:

- (i) The intensifier *fa'i* follows the pronominal oblique argument or the ergative one which refers to an agent. East Futunan thus provides a counterexample to Faltz's (1985: 28) claim that "it is always the object or patient noun phrase which exhibits any special marking for reflexivization."
- (ii) The nominal argument precedes the pronominal one, an order which is not allowed in constructions other than reflexives.

Similar constructions are found in Tokelauan. Hooper (2000: 161) describes Tokelauan *lava* as "a particle which is not a reflexive morpheme. It is an intensifier which can follow verbs or nouns, and in these cases serves to draw attention to the unexpected nature of the act described."

- (67) Tokelauan (R. Hooper, p.c.)

*ko te tautai lava e ia tofiagia* (adnominal use)  
 PRED ART fisher INT IMPF 3SG choose.TR

'It is the master fisherman himself who chooses (the crew).'

- (68) *na fau tautahi (lava) tona fale* (exclusive adverbial use)  
 PST build alone (INT) his house

'He built his house by himself.'

- (69) *ko nā tino iēnā, ko tona lava*  
 PRED ART.PL person DEIC PRED his own  
*hoāvaka* (attributive use)

crew

'These men, they are his very own crew members.'

However, this intensifier is also found in reflexive constructions:

- (70) Tokelauan (Tokelau dictionary 1986: 181)

*na lavea au iate au lava* (reflexive use)  
 PST HURT 1SG OBL 1SG INT

'I hurt myself.'

In Tokelauan, as in East Futunan, reflexive constructions are also attested in ergative clauses,<sup>14</sup> as in (71), where the intensifier *lava* is postposed to the ergative argument:

- (71) Tokelauan (Tokelau dictionary 1986: 427)
- kua vavae kehe koe e koe lava mai nā mea*  
 PRF separate away 2SG ERG 2SG INT from ART.PL thing  
*a tō kāiga*  
 POSS 2SG.POSS family  
 ‘You have cut yourself off from the affairs of your family.’

A special kind of intensifier, which developed from contrastive particles, may also occur in reflexive constructions and mark coreference of subject and pronominal object. These intensifiers are attested in at least three languages of the Far North of the Caledonian Mainland: Caac, Nêlêmwa and Nyêlayu. An example from Caac is given in (72):

- (72) Caac
- ra ja(e) wi ra tale cawek* (reflexive use)  
 3PL INT bite 3PL ART.PL dog  
 ‘The dogs are biting themselves.’

According to Bril (2000: 121), Nêlêmwa *daa* is “une modalité antéposée au prédicat marquant l’opposition, le contraste [...] contraire à la réalité, à la normale”, a definition which comes rather close to the usual semantics of the intensifiers. *Daa* exhibits the exclusive adverbial and the attributive uses; in the reflexive construction, this expression is often preceded by the assertive marker *xam*.

(a) Exclusive adverbial use

- (73) Nêlêmwa (Bril 2000: 121)
- orop hleny xe i daa thaxi*  
 dress DEIC TOP 3SG INT sew.TR  
 ‘This dress, she sewed it herself.’

(b) Attributive use, along with *cêê* ‘true’ (‘true’ is in fact the most common attributive intensifier occurring in the Kanak languages)

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14. Therefore, East Futunan and Tokelauan do not exhibit the same restrictions on reflexively interpreted ergatives as the one noted by Dukes (1998) and by Mosel and Hovdhaugen (1992), respectively, for Tongan and Samoan.

- (74) a. *xam daa pwaxi-n*  
 ASS INT child-POSS.3SG  
 ‘his own children’ (all of them)
- b. *xam cêê pwaxi-n*  
 ASS true child-POSS.3SG  
 ‘his own children’ (only the genetic ones)

## (c) Reflexives with a direct object

- (75) Nêlêmwa (Bril 2000: 219)
- a. *Filo xe i xam daa shaxa-e*  
 Filo TOP 3SG ASS INT cut-3SG  
 ‘Filo cut herself.’
- b. *i daa khiibai-e o giwa*  
 3SG INT hit-3SG with axe  
 ‘He hurt himself with an axe.’

## (d) Reflexives with an indirect object

- (76) *i xam daa kâlaxi i ye*  
 3SG ASS INT be ashamed OBL 3SG  
 ‘He is ashamed of himself.’

## 4.2. The ‘true/exact’ strategy

East Uvean differs from East Futunan insofar as the stative verb *tonu/totonu* ‘correct, exact, straight’ may be used as intensifier in the adnominal (cf. [77]), the exclusive (cf. [78]), the attributive (cf. [80]) and the reflexive function (cf. [82]), instead of the corresponding restrictive particle *pê* exemplified in (79) and (81) (cf. also König and Gast 2006 for a survey of intensifiers of this type):

- (77) East Uvean
- ko Malia tonu ’aē ne’e ha’u* (adnominal)  
 PRED Malia true DEIC PST come  
 ‘Malia herself came.’
- (78) *ne’e fia tokonaki tonu e taku tamai te*  
 PST feel.like prepare true ERG my father ART  
*me’akai* (exclusive adverbial)  
 meal  
 ‘My father wanted to prepare the meal by himself.’

- (79) *tuku ai, 'e hoki au fai pē au* (exclusive adverbial)  
 leave ANPH NSPC IMM ISG do INT ISG  
 'Leave it, I'll do it myself.'
- (80) *'e maheka ia Petelo ki tona foha*  
 NSPC jealous ABS Petelo OBL his son  
***totonu*** (attributive)  
 RDP.true  
 'He is jealous of his own son.'
- (81) *'e mamilo te ipu iāte ia pē* (reflexive)  
 NSPC turn ART top OBL 3SG INT  
 'The top turns on itself.'

In its reflexive use, 'true' is only postposed once after the oblique pronominal object (cf. [82]), whereas the intensifier/restrictive particle *pē* often appears twice,<sup>15</sup> as in example (83):

- (82) *'e ilo'i e Petelo ia ia totonu*  
 NSPC know ERG Petelo ABS 3SG RDP.true  
 'Petelo knows himself.'
- (83) *ko te hoki 'ui mai pē 'aenī e Soane ne'e*  
 PRED ART IMM say DIR INT DEIC ERG Soane PST  
*'ufi'ufi pē ia kiā ia pē*  
 be.ashamed INT 3SG OBL 3SG INT  
 'Soane just told me he was ashamed of himself.'

Tongan (cf. Churchward 1953) has the same intensifiers as East Uvean (*pē* and *tonu*) with the same range of uses: attributive, exclusive adverbial, adnominal and reflexive.

In Drehu (Lifu, Loyalty islands), the adjunct *sipu* 'true' also covers several intensifying functions: the adnominal one as in (84), the attributive one as in (85), the reflexive one as in (86), in addition to the emphatic particle *kō* (which occurs in the same context as Nengone *ko*), exemplified in a reflexive use in (87):

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15. Reduplication of the intensifier entering reflexive construction is also required in Tuvaluan (intensifier *loa*) and in Marquesan (intensifier *iho*). The reduplication strategy is mostly found elsewhere for reinforcing a reciprocal interpretation and it usually affects the predicate or the pronouns, not the markers.

- (84) Drehu  
*thaa hnei Maria kö hna sipu amë la mani*  
 NEG SM Maria INT PST true put ART money  
 ‘Maria herself didn’t put away the money.’
- (85) *Pier a zalu kowe la sipu nekö i angeic*  
 Pier IMPF jealous towards ART true child POSS 3SG  
 ‘Pier is jealous of his own child.’
- (86) *angeic a sipu madrin koi angeic (kö)*  
 3SG IMPF true happy OBL 3SG (INT)  
 ‘He is happy of himself.’
- (87) *hnei angeic kö hna xe angeic*  
 SM 3SG INT PST smack 3SG  
 ‘He smacked himself.’

#### 4.3. The ‘other’ strategy

Besides the use of the emphatic particle *kö* and *sipu* ‘true’ as intensifiers, Drehu has a third way of expressing reflexivity, consisting of the adjunct *ketre* ‘other’ (as a nominal adjunct: *la ketre nekönatr* ‘the other child’), often reinforced by *kö*. The adjunct *ketre* is required when the situation implies the existence of another participant which is not expressed syntactically, but present in everyone’s mind:

- (88) Drehu  
*hnei angeic hna ketre itön* (reflexivized benefactive)  
 SM 3SG PST other buy.TR  
 ‘He bought it for himself.’ (‘... and not for someone else, as expected.’)

*Ketre* can also appear along with the intensifier *kö* in exclusive adverbial (cf. [89]) and adnominal (cf. [90]) uses, to reinforce the unexpected role of the participant:

- (89) Drehu (Sam 1995: 105)  
*hnei kaka-ti kö hna mekun troa ketre hnëkën la*  
 SM dad-EMOT INT PST think COMP other prepare ART  
*xen*  
 meal  
 ‘My father decided to prepare the meal by himself.’

- (90) *ketre tro jë kö eö*  
 other go DIR INT 2SBJ  
 ‘You (rather than someone else) go!’

The use of *ketre* for the expression of reflexivity is of course reminiscent of the English quantificational strategy for expressing reciprocity (*each other*).

#### 4.4. The ‘alone’ strategy

Another strategy which is widely attested in Oceanic languages is the use of the adverb ‘alone’ (> ‘by oneself’) in order to mark coreference between S and O expressing reflexivity (cf. also Gast and Siemund 2006). This strategy is found in Māori as an alternative to *anō* ‘again’ (cf. Section 4.5.2 below). An example of a reflexive construction with (*an*)*ake* ‘alone’ is given in (91):

- (91) Māori (Bauer 1997: 636)  
*i tapahi a Marama ia ia anō/anake*  
 PRF cut ART.PERS Marama OBL 3SG again/alone  
 ‘Marama cut herself.’

In contrast to *anō*, (*an*)*ake* also has an intensifying attributive use.

The Polynesian Outlier Fagaueva uses the cognate form *hage* ‘alone’ in a preverbal position, both in a reflexive and exclusive adverbial sense:

- (92) Fagaueva  
*na hage mate de tangata* (exclusive adverbial)  
 PST alone die ART man  
 ‘The man committed suicide.’ (lit.: ‘He died by himself.’)
- (93) *e hage matea ie ia a cica* (reflexive)  
 IMPF alone admire ABS 3SG ART.PERS dad  
 ‘Dad admires himself.’

Fagaueva moreover has several other intensifiers: *lava* is mainly used in the attributive function as in Samoan and Tokelauan, and *pusu/supu* ‘spontaneously’<sup>16</sup>

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16. The phenomenon that a reflexive marker may have an aspectual (inchoative or spontaneous) value is found elsewhere, as in the Salish language Halkomelem (Gerdtz 2000) or, according to Crowley (1999), in the Vanuatu language Ura, where the verbal auxiliary *espe* ‘do reflexively’ (also meaning ‘do spontaneously’) must be followed by a nominalized verb with an object pronoun of same number and person features as the subject of the auxiliary:

is also used to express reflexivity. The choice between *pusu/supu* and *hage* depends on the verb; with verbs such as *fuatiaina* ‘hate’, *matea* ‘admire’, *pucoina* ‘speak’, *matamatasaina* ‘be jealous’, either one can occur:

(94) Fagauvea

*e hage/pusu fuatiaina ie ia a Pol*  
 IMPF alone/SPONT hate.TR ABS 3SG ART.PERS Pol  
 ‘Pol hates himself.’

In Fijian, several different strategies may be used to mark coreference. One of them is the use of the restrictive particle *gā*, which, according to Capell (1941: 77), means ‘only, just, nevertheless, all the same, yet, but, however’ (cf. [95]). Alternative constructions are provided by the preverbal particle *dui* ‘each, individually’ (cf. [96b]), and by a serial verb construction with the verb *vakātaki* ‘be similar, be like’<sup>17</sup> (cf. [96c]; see Capell 1941: 295).

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Ura (Crowley 1999: 220)

(ii) *ir-espe n-elei leil*  
 3PL.PST-do.REFL/SPON NM-scratch 3PL  
 ‘They scratched themselves.’

This spontaneous value is also mentioned by La Fontinelle (1976: 239) concerning the Ajië prefix *vi-*, which can mean ‘suddenly’.

17. The use of a lexeme meaning ‘resemblance, image (reflection), photography’ is also attested in Kwaio (South-East Solomon), but according to Keesing, this form was borrowed from Pijin (the Melanesian Pidgin spoken in the Solomon islands) *lakasini* and comes from English *likeness*.

Kwaio (Keesing 1985: 167)

(iii) *ngai e aga-si-a lakanisi a-na naa ilonunu*  
 3SG.INDEP 3SG see-TR-3SG image POSS-3SG in mirror  
 ‘He saw himself in the mirror.’ (lit. he saw (it) his image in the mirror)

As mentioned before, Kwaio also uses the noun ‘body’ to mark reflexivity by establishing coreference between its possessive suffix and the subject:

(iv) *ngai e aga-si-a labe-na naa ilonunu*  
 3SG.INDEP 3SG see-TR-3SG body-3SG in mirror  
 ‘He saw himself in the mirror.’ (lit. he saw (it) his body in the mirror)

However, the use of this head reflexive seems to be limited to a few actions and is thus similar to expressions such as ‘he hurt his arm’ or ‘he combs his hair’. Kwaio also uses locative constructions for intensification:

(v) *nau ta-ku leka i tala-gu*  
 1SG.INDEP FUT-1SG go LOC track-1SG  
 ‘I’ll go by myself.’ (lit. in my tracks)

- (95) Fijian (Paul Geraghty, p.c.)

*e talanoa-taki koya gā*  
 3SG speak-TR 3SG.OBJ alone  
 ‘He speaks of himself.’

- (96) a.
- era katī ira gā na kolī*
- 
- 3PL bite 3PL.OBJ alone ART dog
- 
- ‘The dogs are biting themselves.’

b. *era dui katī ira<sup>18</sup> na kolī*  
 3PL each bite 3PL.OBJ ART dog  
 ‘The dogs are biting themselves.’

c. *era katī ira vakātaki ira na kolī*  
 3PL bite 3PL.OBJ be.like 3PL.OBJ ART dog  
 ‘The dogs are biting themselves.’

*Gā* also has an attributive use (cf. [97]), while *vakātaki* may have an exclusive adverbial use (cf. [98]):

- (97)
- e liumuri-taki koya na luve-na gā*
- (attributive)
- 
- 3SG betray-TR 3SG ART offspring-POSS.3SG alone
- 
- ‘His own son betrays him’.

- (98)
- au caka-na vakātaki au*
- (exclusive adverbial)
- 
- 1SG do-TR be.like 1SG
- 
- ‘I do it by myself.’

Other Austronesian languages, far away geographically and genetically from Fijian and Polynesian languages, have the ‘alone’ strategy for both the intensifying and reflexive uses. According to Bowden (2001), Taba, an Austronesian language spoken on Makian Island (South Halmahera) uses a marker *do* ‘alone’ as both intensifier (cf. [99]) and reflexive marker (cf. [100]–[101]) in transitive constructions:

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(vi) *ngai e tofu-a 'aa'ae-na i tala-na*  
 3SG.INDEP 3SG cut-3SG leg-3SG LOC track-3SG  
 ‘He hit his own leg.’

18. According to Paul Geraghty (p.c.), *ira* can be replaced by the 3rd singular form *koya* in this context.

- (99) Taba (Bowden 2001: 166–168)  
*yak kanig lomo polisi do lgotal yak*  
 ISG ISG.CAUS.POSS.ISG friend police alone 3PL.grab ISG  
*suko sel*  
 insert.APPL cell  
 ‘I have a policeman friend who grabbed me himself and stuck me in the cell.’
- (100) *i do nwet i* (reflexive)  
 3SG alone 3SG.hit 3SG  
 ‘He hit himself.’
- (101) *yak do kalcomak yak surat* (benefactive reflexive)  
 ISG alone ISG.send.APPL ISG letter  
 ‘I’m sending myself a letter.’

This strategy is also attested in Chamorro (Guam and Mariana Islands), for which Topping (1973: 271) mentions an intensifier *maisa* ‘alone’, which in this language precedes the pronominal object: *ha li’e’ maisa gue* ‘He saw himself.’

In Kusaiean (Lee 1975), a Micronesian SOV language, the intensifier is *sifac*, usually followed by *na* ‘just, alone, very’ positioned after the pronominal object; *sifac na* is used as an exclusive adverbial and adnominal intensifier, and in reflexive constructions:

- (102) Kusaiean (Lee 1975: 106)  
*Sohn el sifac na unilyac*  
 John 3SG INT alone kill  
 ‘John killed himself.’

Finally, in Bislama, an English-based Pidgin spoken in Vanuatu, reflexivity is marked by *nomo* ‘only, just’, or by *wan* ‘one, alone’, which also function as intensifiers:

- (103) Bislama (Tryon 1987: 182)  
*em i kilim em nomo* (reflexive)  
 3SG PRED hit.TR 3SG alone  
 ‘He hit himself.’
- (104) *em i sutum em wan* (reflexive)  
 3SG PRED shoot.TR 3SG one  
 ‘He shot himself’. (*idem*)

- (105) *hem wan i mekem* (attributive)  
 3SG one PRED make.TR  
 ‘He made it on his own.’ (Crowley 1990: 238).

#### 4.5. The ‘again/return’ strategy

In Oceanic languages, the ‘return/again’ strategy is the strategy most often found as a marker of reflexive coreference along with the ‘alone’ strategy and, in some languages, it also marks reciprocity. Verbs or postverbs meaning ‘again’, ‘backwards’, ‘return’ are very rarely used as intensifiers; an exception is found in Māori with *anō* ‘again’, which is used not only for reflexives and reciprocals, but also as an exclusive adverbial intensifier; in Paamese (North Central Vanuatu), where the reflexive marker is also used as an attributive intensifier, like English *own*; and in Haméa (South of the New Caledonian Mainland), where the marker *mwâi* ‘again’ has several intensifying uses besides the reflexive one.

##### 4.5.1. Used for reflexive situations only

In a few Kanak languages of the South of the Mainland, reflexivity is expressed by the ‘return/again’ strategy, whereas reciprocity is marked by a reflex of the Proto Oceanic prefix.

- (106) Xârâgurè
- a. *nyärä sa nyärä mûgé* (reflexive)  
 3PL hit 3PL again  
 ‘They are hitting themselves.’
  - b. *nyärä pu-sa nyärä* (reciprocal)  
 3PL PREF-hit 3PL  
 ‘They are hitting each other.’

The use of ‘again’ in reflexive constructions is mentioned as early as in Codrington’s (1885) sketch of Nengone (Maré, Loyalty islands): “a reflexive sense is given, as in other Melanesian languages, by an adverb meaning back.” My Nengone informants still use *yawe* ‘back’, ‘again’ in reflexive constructions, usually followed by the intensifier *ko* (cf. [107]) in order to avoid ambiguity with the iterative meaning:

- (107) Nengone (Codrington 1885: 482)
- buhnij ci amani buhnij yawe (ko)*  
 2PL IMPF pride 2PL again (INT)  
 ‘You pride yourselves.’

The unexpected use of ‘again’ to express reflexivity is also attested in Saliba (Western Oceanic, Papuan Tip, Milne Bay Province), where Margetts (1999) notes a similar use of *uyo* ‘go back, again’ in a serial verb construction:

(108) Saliba (Margetts 1999: 334)

*ya-kita-uyo-i-gau*  
 ISG-see-again-APPL-ISG.OBJ  
 ‘I saw myself.’

The same situation is found in Tawala, another Austronesian (Papuan Tip) language of the Milne Bay Province of Papua New Guinea, where the non-reduplicated form of the verbal modifier (*meme* ‘again’) is used to mark reflexivity:

(109) Tawala (Ezard 1997: 136)

*hi-wele tahae-na me-hi*  
 3PL-give first-LIG again-3PL  
 ‘They firstly gave themselves.’

Similar cases can be found in Paamese where, according to Crowley (1982), *-ris(i)* < ‘return, go back’ may be part of reflexive constructions.

(110) Paamese (Crowley 1982: 180, 233–234)

*nalesinauris en kilās*  
 ISG.RLS.see.ISG.again OBL mirror  
 ‘I looked at myself with a mirror.’

(111) *Iti Amin sān metel minieris*  
 Idi Amin 3SG.RLS.give medal DAT.3SG.again

‘Idi Amin gives himself medals.’

In Paamese, *risi* also has an attributive intensifying use:

(112) *kai mun rāneris*  
 3SG 3SG.RLS.drink blood.3SG.again  
 ‘He drinks his own blood.’

#### 4.5.2. *Used for both reflexive and reciprocal situations*

The ‘return/again’ strategy used for expressing reflexivity has been extended to express reciprocity in a few Kanak languages such as Xârâcùù, Tîrî and Haméa as well as in Māori. The morpheme *mûgé*, which we found in Xârâgurè as a

reflexive marker, functions in Xârâcùù as an (ad)verb, meaning ‘return/again’ and as a marker of coreference. It is usually not postposed to the pronominal object but to the predicate, as if it were still part of a serial verbal construction, as is the case in Saliba:

- (113) Xârâcùù  
       è sêê **mûgé** wâ rè  
       3SG be.proud again OBL 3SG  
       ‘He is proud of himself.’

Xârâcùù does not use a reflex of the Proto Oceanic prefix *\*paRi-* to express reciprocal events, except in a few unproductive cases such as *juu* ‘agree’ > *ù-juu* ‘agree with each other’; *xù* ‘give’ > *ù-xù* ‘exchange’; *cuè* ‘sit’ > *ù-cuè* ‘gather’; *ooro* ‘rejoice’ > *ù-ooro* ‘appreciate each other’. In general, reciprocity is marked either through coreferential plural arguments, which are also compatible with a non-reciprocal interpretation (cf. [114a]); or, to avoid this ambiguity, through the adjunction of the (ad)verb *mûgé* ‘return/again’, as in the construction used for reflexive situations (cf. [114b]):

- (114) a. *ri xêbùtù ri*  
           3PL put.together 3PL  
           ‘They gather them/each other.’  
       b. *ri xêbùtù mûgé ri*  
           3PL put.together again 3PL  
           ‘They meet.’

As is shown by the following example, however, the exclusion of the non-symmetric interpretation creates another (reciprocal-reflexive) ambiguity in combination with dual or plural subjects:

- (115) *pa xûûchî chëi mûgé na ri ngê kwââ*  
       COLL child hit again PST 3PL with stick  
       ‘The children hit themselves/each other with a stick.’

Moreover, *mûgé* can also convey an iterative meaning and (115) could also mean: ‘The children hit them again with a stick’. If necessary, another morpheme *dèpu* ‘once more’ can be used to express iterativity only. In Tîrî and Haméa, the same situation can be found, the markers – *mwâgi* and *mwâî*, respectively – used for both reflexive and reciprocal situations also mean ‘again’ and are cognate with Xârâcùù *mûgé*.

In Māori, as already mentioned, two particles may function as intensifiers and reflexive markers, viz. (*an*)*ake* ‘alone’ and *anō* ‘again’. We have already seen the use of (*an*)*ake* ‘alone’ as a reflexive marker in (91) above. Let us now turn to *anō* ‘again’ in its reflexive use:

(116) Māori (Bauer 1997: 636)

*i tapahi a Marama; ia ia; anō/anake*  
 PRF cut ART.PERS Marama O 3SG again/alone  
 ‘Marama cut herself.’

According to Bauer (1997: 635), “Māori does not have special reciprocal forms, but uses the reflexive construction, with dual or plural pronouns. Whether a dual or plural pronoun is interpreted as reflexive or reciprocal is a matter of what makes more sense”; moreover, “reflexive interpretation are normally preferred to reciprocal ones, and reciprocity is treated as a special case of reflexivity” (Bauer 1997: 641). Here again, ambiguity may arise between reciprocity and reflexivity:

(117) Māori (Bauer 1997: 641, 646)

*nā Hone rāua ko Mere i patu a rāua*  
 belong John 3DU SPEC Mary TAM beat ART.PERS 3DU  
*anō*  
 again  
 ‘John and Mary hit themselves/each other.’

(118) *i tunu keke a Hone rāua ko Mere na*  
 PRF bake cake ART.PERS John 3DU SPEC Mary belong  
*rāua anō*  
 3DU again

‘John and Mary (together) baked cakes for themselves.’/‘John and Mary baked cakes for each other.’/‘John and Mary each baked cakes for themselves.’

North Vanuatu languages also exhibit a reflexive and reciprocal use of ‘again’. According to Alexandre François (p.c.), there are two possible strategies in these languages – the affixal and the ‘return/again’ strategies –, both with an optional reduplication of the verb, depending on the (semantic) class of the verb. We will see (in Section 4.5.4) that this unstable situation is also found in some Kanak languages for the reflexive, where either the affixal strategy or the ‘return/again’ strategy is used – or both, depending on the verb.

‘Return’ is used to mark reciprocity in other languages as well, as in Tobati (Irian Jaya), where “reciprocals are formed with *fem* ‘return’ adjacent to the verb” (Lynch et al. 2002: 197).

The use of ‘return’ to express reciprocity (though not reflexivity) seems quite natural: French *donner en retour*, *dire en retour* and the English (phrasal) verb *give back* have the same source, but with the difference that in Oceanic languages, the relevant markers may convey simultaneity of two events.

#### 4.5.3. Combined with the intensifier strategy

We have already seen Iaaï (Uvea, Loyalty Islands) sentences in which *hmetu* ‘return/again’ was used optionally in the circumfix constructions expressing reciprocity (cf. [55]). Here is another example:

- (119) Iaaï  
*ödrine û-sumweci-köu ödrin (hmetu) (reciprocal)*  
 3PL.RSTR.PRS PREF-pinch-SUF 3PL.RSTR (again)  
 ‘They are pinching each other.’

This (ad)verb is required to express reflexivity, along with the noun *ham(e)*-‘one’s responsibility, one’s duty’<sup>19</sup> (Ozanne-Rivierre 1984: 49), which precedes the predicate and is invariably accompanied by a possessor. This expression is used by itself in preverbal position as an intensifier in adnominal (cf. [120]) and exclusive adverbial functions (cf. [121]), and together with *hmetu* ‘again’ as a marker of reflexivity, as in (122):

- (120) *a ka hame-n oo thaan ganyi ûxacaköu*  
 3SG ASS duty-POSS.3SG arrive chief for meeting  
 ‘The chief himself came to the meeting.’
- (121) *oge ka ham-ök anyâ wisaa hmetoo anyik*  
 1SG.PST ASS duty-POSS.1SG do correct again.TR my  
*walenu*  
 bicycle  
 ‘I repaired my bicycle by myself.’

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19. According to Ozanne-Rivierre (1984: 49), *hame-* (+ possessive suffix) is used both in reflexive constructions with the meaning ‘one’s duty, one’s responsibility, personally’ and as a dependent verb ‘to have to’. This marker is reminiscent of the use of a noun meaning ‘owner’ as a reflexive marker in Bidiya (Alio 1986, cited by Frajzyngier 2000b: 187). Of course, there is also the use of *own* as an attributive intensifier in English.

- (122) *ötine ka hamwötin hlingö ötin hmetu*  
 IPL.INCL.PRS ASS duty.POSS.IPL.INCL kill IPL.INCL return  
 ‘We are going to kill ourselves.’

#### 4.5.4. Combined with the affixal strategy

Paicî, a Kanak language (Centre of the New Caledonian Mainland), exhibits an even more complex situation for the encoding of reflexivity, sharing features with both the languages of the north and those of the south.

a) The affixal construction may be used, with the *pi-* prefix and a pronominal object:

- (123) Paicî  
*é pi-tâmâgööri ê wë Maria*  
 3SG PREF-know 3SG ART.PERS Maria  
 ‘Maria knows herself.’

b) In addition, the adverb *cöwâ* ‘backwards’ may be postposed to the coreferential object pronoun if a speaker aims to insist on the fact that the action is surprisingly performed towards/against oneself (and to prevent a possible reciprocal interpretation with plural arguments):

- (124) *é pi-ucâ-ri ê bwati cöwâ wë Peteru*  
 3SG PREF-look-TR 3SG well backwards ART.PERS Peteru  
 ‘Peteru admires himself a lot.’

c) *Cöwâ* alone is sufficient to express reflexivity with verbs denoting violent actions:

- (125) *rë uti rë cöwâ i pââ akënâ*  
 3PL bite 3PL backwards ART PL dog  
 ‘The dogs are biting themselves.’

Just a bit further south, Ajië uses completely parallel structures with either the prefix, or one postverb, or the presence of both the prefix and a postverb. In Ajië, speakers have a choice between two postverbs, *yâi* meaning ‘backwards’<sup>20</sup> (*na ara yâi* ‘he is eating backwards’, e.g. beginning by the dessert) or *tëë* ‘again’

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20. *Yâi* also enters verbal compounds as an inverse suffix, with the meaning ‘miss one’s goal’.

(*na ara tëë* ‘he is eating again’). The following is a summary of the structures found in Ajië:

a) The unmarked transitive construction:

- (126) Ajië  
*céré kâxè ré*  
 3PL pinch 3PL  
 ‘They are pinching them.’

b) The construction with only the prefix can express collective situations or reciprocity with symmetric verbs such as ‘meet’ and ‘marry’ (cf. Section 3.1.1):

- (127) *céré dè bâ vi-javirù*  
 3PL ASP ASP PREF-meet  
 ‘They often meet.’

c) The construction combining the prefix and a pronominal object, which expresses either a reciprocal or a reflexive situation with plural arguments (cf. [128]), invariably a reflexive one with singular arguments (cf. [129]), and invariably a reciprocal situation when the context excludes a reflexive reading (cf. [130]):

- (128) *céré da vi-waatorhû ré*  
 3PL NEG PREF-pay.attention 3PL  
 ‘They don’t pay attention to themselves/each other.’
- (129) *na vi-rhau è na öyari*  
 3SG PREF-hit 3SG SM child  
 ‘The child hits himself (just for fun).’
- (130) *curu vi-baa yè ru na dua öyö*  
 3DU PREF-kiss OBL 3DU.O SM two fiancé  
 ‘The betrothed are kissing each other.’

d) The previous construction + *yâi* ‘backwards’ or *tëë* ‘again’ enforces the reflexive interpretation when the arguments refer to a plurality:

- (131) *gèrré vi-méari rré yâi*  
 IPL.INCL PREF-like IPL.INCL.OBJ backwards  
 ‘We like ourselves/\*each other.’

e) Even with singular arguments, both the prefix *vi-* and the particle *yât/tëë* may be present. In this case, another participant is assumed to take part in the event and is thus semantically implied. The presence of the adverb emphasizes the unexpected nature of the participant expressed. This meaning is similar to what we found in Drehu with the adjunct *ketre* ‘other’ (cf. Section 4.3):

- (132) Ajië  
*na dè vi-êrê è tëë yè padii-e na*  
 3SG ASS PREF-speak 3SG again OBL brother-POSS.3SG SM  
*Maria*  
 Maria  
 ‘Maria speaks about herself [instead of someone else] to her brother.’

f) *Tëë* ‘again’ or *yât* ‘backwards’ are used to express reflexivity without the prefix, when the event is unexpected, especially with verbs denoting violent actions which affect the agent. Compare the following example with (129) above, in which the agent was involved in a voluntary activity with no negative implication:

- (133) *na rhau-è yât na öyari*  
 3SG hit-3SG backwards SM child  
 ‘The child hits himself (involuntarily, and may get hurt).’

Ajië and Paicî reflect in their morphosyntax the close relationships which often exist between the reflexive and the reciprocal domains. It is hard to tell whether the structures found in these languages are due to recent developments triggered by contact with languages spoken further to the south, where the sole ‘return/again’ strategy is found for reflexivity, or if it reflects an influence of the languages further to the north, in which the affixal construction has completely extended its use to the reflexive domain.

Other Oceanic languages present the same kind of complex picture. In Toqabaqita, for example (cf. Lichtenberk 1991), the reciprocal marker *kwailiu*, which means ‘back and forth’ (prefix *kwai-* + *liu* ‘walk, take a walk, walk about’), is used to disambiguate between three possible situations (non-symmetric, reciprocal and reflexive) in transitive constructions with verbs such as ‘frighten’, ‘leave definitively’, ‘hurt’, ‘love’, which cannot take the verbal prefix *kwai-*:

- (134) Toqabaqita (Lichtenberk 1991: 172–173)
- a. *keero'a keko thatham i keero'a*  
 3DU 3DU like 3DU  
 'They liked each other' or 'They liked themselves' or 'They liked them.'
- b. *keko thatham i keero'a kwailiu*  
 3DU like 3DU back.and.forth  
 'They liked each other.'

Whereas 'backwards' is used in Kanak languages for reflexive situations, 'back and forth' is, unsurprisingly, used in Toqabaqita for reciprocal situations.

#### 4.6. The 'downwards' directional strategy

Besides the use of 'return/again' as a marker of reflexive coreference, other dynamic morphemes are found to express reflexivity which manifest much more extended functions: as intensifiers, on the one hand, and as markers of reciprocity, on the other. Indeed, Eastern Polynesian languages such as Marquesan, Hawaiian and Tahitian have lost reflexes of Proto Oceanic \**paRi-*, and the constructions with intensifiers have been extended to the reciprocal domain. The developments in Eastern Oceanic languages seem to be just the opposite of the ones that must have taken place in New Caledonia. Instead of the Proto Oceanic prefix expanding its use to the reflexive domain, it is the reflexive marker that expanded its use to the reciprocal domain.

The originally Tahitian directional *iho* 'downwards'<sup>21</sup> (historically related to *hifo* 'go down') functions as an intensifier in adnominal (cf. [135]), exclusive adverbial (cf. [136]), and attributive (cf. [137]) uses:

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21. The Polynesian Outlier Fagauvea has two different markers of identity, depending on the polarity of the sentence. One of them is the directional *ifo* 'downwards' used in negative sentences, while the emphatic particle *lava* occurs in positive sentences, as in Samoan and Tokelauan:

Fagauvea

- (vii) *no seke de aliki ko ia lava ataata o fagailoaina*  
 FUT come ART chief PRED 3SG INT tomorrow COMP inform  
*gitatou*  
 IPL.INCL

'The chief himself will come tomorrow to inform us.'

- (vii) *no hee ko ia ifo de aliki no seke ataata*  
 FUT NEG PRED 3SG DIR ART chief FUT come tomorrow  
 'The chief himself will not come tomorrow'.

- (135) Tahitian (Lazard and Peltzer 2000: 173)  
 'o te 'orometua **iho** tē haere  
 PRED ART parson INT ART.NSPC go  
 mai (adnominal)  
 DIR  
 'The parson himself will come.'
- (136) *nā'u* **iho** i tātai i ta'u  
 POSS.ISG INT PRF repare OBL my  
*pereo'o* (exclusive adverbial)  
 car  
 'I repaired my car myself.' (P. Vernaudon, p.c.)
- (137) *ta'u* **iho** tamaiti tēi taparahi iā-'u (attributive)  
 my INT son ART.PRF hit OBL-ISG  
 'My own son hit me.' (idem)

In Tahitian, the directional particle following the oblique argument also occurs as a marker of reflexivity, indicating coreference between S and pronominal O:

- (138) 'o tēi aroha i tāna iho vahine 'ua aroha  
 PRED ART.PRF love OBL his INT woman PRF love  
*ia iā-na* **iho**  
 ANPH OBL-3SG INT  
 'He who loves his own wife loves himself.' (Coppentrath and Prevost 1975: 168)

Coppentrath and Prevost (1975: 168) note that “[m]alheureusement, cette tournure est aussi utilisée pour exprimer le verbe réciproque” and give the following example:

- (139) *e* aroha tātou iā tātou **iho** (reciprocal)  
 IMPF aimer IPL.INCL OBL IPL.INCL INT  
 'Let's love each other.'

Tahitians may, however, make a difference between reflexive and reciprocal constructions by juxtaposing the pronouns when reciprocity is expressed (cf. [140]), while the reflexive construction differentiates the arguments, the oblique one being followed by *iho* (cf. [141]):

- (140) 'ua taparahi rātou rātou **iho**  
 PRF hit 3PL 3PL INT  
 'They hit each other.'
- (141) 'ua taparahi rātou iā rātou **iho**  
 PRF hit 3PL OBL 3PL INT  
 'They hit themselves.' (P. Vernaudon, p.c.)

This possibility was also noted by Copenrath and Prévost (1975: 168), with as many as three occurrences of the pronoun:

- (142) 'ua pe'ape'a rātou, rātou rātou **iho**  
 PRF be.annoyed 3PL 3PL 3PL INT  
 'They argued with each other.'

According to Du Feu (1996: 93), the extension of a marker of reflexivity into the reciprocal domain is also attested in Rapanui, which has an emphatic demonstrative 'a. This marker, which is “necessarily anaphoric in that it points to a previously mentioned element”, has a reflexive use:

- (143) Rapanui (Du Feu 1996: 97–98)  
 e hapa'o koe ia koe 'a  
 IMPF care.for 2SG OM 2SG DEIC  
 'Look after yourself!'

In Rapanui, the reflexive marker is also used to indicate reciprocity:

- (144) e hogihogi ro a maua ia maua  
 IMPF kiss in fact ART.PERS IDU.EXCL OM IDU.EXCL  
 'a  
 DEIC  
 'We shall kiss each other.'

## 5. The quantificational strategy

There is one more strategy to investigate, which is specific to the reciprocal domain. The “quantificational strategy” – as König and Kokutani (2006) call it – is not sufficient by itself in Oceanic languages to express reciprocity without ambiguity, except perhaps in Kusaiean or in West Futunan where, at least with a few verbs, a reciprocal interpretation is associated with such phrases as Kusaiean *sie sin sie*, lit. ‘one of one’ and West Futunan *tasi ma tasi*, lit. ‘one and one’:

- (145) West Futunan (Capell 1984: 41)  
*akirea no-kaniani tasi ma tasi*  
 3PL PROG-love one and one  
 ‘They love each other.’

- (146) Kusaiean (Lee 1975: 107, 201–202)  
*eltahl luhngse sie sin sie*  
 3PL like one of one  
 ‘They like each other.’

However, the construction using a circumfix (whose prefix part is a reflex of the now famous Proto Oceanic prefix) is more widely used in Kusaiean:

- (147) *Macrike ac Sacpacinis a-mweun-i ke 1942*  
 America and Japan PREF-fight-SUF in 1942  
 ‘America and Japan fought against each other in 1942.’

Both strategies may also be combined:

- (148) *Sah Nwenah a-futfut-i sie sin sie*  
 Sah Nwenah PREF-kick-SUF one of one  
 ‘Sah and Nwenah are kicking each other.’

In Tuvaluan, an unmarked transitive construction may express reciprocity, but a non-symmetric interpretation is also allowed:

- (149) Tuvaluan (Besnier 2000: 213)  
*koi fai vaa ssuaa maaloo ki ssuaa*  
 INC have poor.relation INDEF.other state to INDEF.other  
*maaloo*  
 state  
 ‘These states are still in conflict with one another’ or ‘One state is still in conflict with the other state.’

Either the circumfix strategy (as in example [50b]) or the quantificational strategy has to be added to the (pre)verb *fakatau* ‘exchange’, ‘compete’ in order to get a non-ambiguous reciprocal interpretation. The quantificational strategy consists of two identical arguments, one in the absolutive (unmarked) and the other in the ergative case preceded by the ergative marker *nee*:

(150) Tuvaluan (Besnier 2000: 215)

*koo fakatau tuli nee te isi tino te isi*  
 INCH compete chase ERG ART other person ART other  
*tino*  
 person  
 ‘They are chasing one another’.

In Iaaï, the quantificational strategy occurs in combination with the circumfix strategy. The construction is complex<sup>22</sup> and may be used with arguments referring to inanimates:

(151) Iaaï

*e û-hakekeny-köu umödrin jee uma ke hnyaatr*  
 3SG PREF-near-SUF CLSF.3PL PL house INDEF persons  
*baaten ke hnyaatr*  
 his.side INDEF persons  
 ‘Their houses are close to one another.’

The quantificational strategy certainly exists in other languages as well, but very probably never as a primary strategy if an unambiguous reciprocal interpretation is intended.

## 6. Typological considerations

As I hope the preceding discussion has shown, there are various constructions expressing reflexivity in Oceanic languages, just as there are various reciprocal strategies, even if the relevant markers are also used in other functions, viz. as intensifiers or as adverbs in non-symmetric states or events (cf. Section 4). Besides, we have seen that Oceanic languages often have several strategies to encode reciprocal or reflexive situations. The diversity of the Oceanic constructions is amazing, but still representative of what is found elsewhere in the languages of the world. Oceanic languages offer interesting combinations of affixal, deverbal and pronominal strategies, showing that reflexive (and to a lesser extent reciprocal) constructions may remain overtly transitive.

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22. *Ke hnyaatr baaten ke hnyaatr* literally means ‘certain persons his side certain persons’.

None of these affixal, adverbial or adjunct strategies is clearly specialized for a semantic domain, even if each strategy manifests a close affinity with one semantic domain or another:

- (i) the affixal strategy is used preferably with middle and reciprocal domains;
- (ii) intensifiers and adverbial strategies are preferably used for the reflexive domain.

Concerning the different deverbal/adverbial strategies, remember that the ‘again/return/downwards’ adjuncts are found in constructions expressing both reflexive and reciprocal situations, whereas the ‘exchange’ and ‘back and forth’ strategies are only found for reciprocal situations. By contrast, ‘true’, ‘exact’, ‘only, alone’ and contrastive particles are used as intensifiers and reflexive markers, but not as reciprocal markers. The use of ‘return/again/backwards’, which in Oceanic languages seem to mark more often reflexivity than reciprocity, poses major problems for any attempt at an explanation. It is not even clear if we are dealing here with an inherited feature or with parallel evolutions, and more research also needs to be done in order to find an answer to this particular question.

At this point, I would like to summarize the major points of the preceding analyses, and to show how Oceanic languages may contribute to the typology of intensifiers, reflexives and reciprocal markers.

### 6.1. Summary of the various ways of expressing the middle voice and reciprocity

#### a) The affixal strategy

A prefix only (intransitive construction) is used to encode a few inherently reciprocal situations, for reciprocal situations limited to two participants and for middle situations (grooming actions, sociative/collective, depatientive, habitual, etc.). This option is found in all languages except those of Eastern Polynesia. A prefix + a pronominal object are used in transitive constructions mainly for reciprocal situations (in most Mainland Kanak languages). A circumfix (intransitive constructions if a reciprocal meaning is intended, except for dative coreference and, in Iaai, with the addition of a pronominal object) is mainly used in Loyalty Islands and Western Polynesian languages.

#### b) Verbal, adverbial and intensifier strategies

The ‘return/again’ strategy is attested in a few Kanak languages (Xârâcùù, Tîrî, Haméa), in Northern Vanuatu languages and in Māori, while ‘back and forth’ is used with some verbs in Toqabaqita. The ‘compete/exchange’ or ‘simultaneously’ strategies are used in Tuvaluan and in East Futunan. In Eastern Polynesian

languages, constructions expressing reflexivity with intensifiers are extended to the reciprocal domain.

c) The quantificational strategy

The quantificational strategy is attested at least in Tuvaluan, Iaaï and Kusaïean.

## 6.2. Summary of the various ways of expressing reflexivity

- a) Adjunct reflexive markers of verbal or adverbial origins that fulfil no other intensifying functions; they may be (ad)verbs derived from notions such as ‘again, backwards, return’ as in Kanak languages (Ajië *yâi*, Iaaï *hmetu*, Paicî *cöwâ*, Xârâcùù and Xârâgurè *mûgé*, Numèè *mwê*, ‘Orôê *bwiri*, Haméa *mwâi*, Tîrî *mwâgi*, etc.), where they are not used as intensifiers.
- b) Adjunct reflexive markers of verbal origin which are identical to lexical intensifiers (‘true, exact’),<sup>23</sup> used in attributive or/and adnominal function, e.g. *to(to)nu* in East Uvean or Tongan.
- c) Adjunct reflexive markers of verbal origin such as ‘be like’ (Fijian *vakātaki*), which are also used as exclusive adverbial intensifiers.
- d) Adjunct reflexive markers with the lexical origin ‘alone, only’<sup>24</sup> (Māori, Fagauvea, Taba, Fijian, Chamorro, Bislama . . .), which also have an exclusive adverbial use, such as *hage* (Fagauvea) or an attributive use such as *(an)ake* (Māori).
- e) Restrictive or emphatic particles used as reflexive marker and intensifier (adnominal, exclusive adverbial and attributive functions), for which no lexical origin has been found (East Futunan *fa’i*, East Uvean, Niuafu’ou and Tongan *pē*, Samoan and Tokelauan *lava*, Tuvaluan *loa*, Nengone *ko*, Drehu *kö*, etc.).
- f) Reflexive markers that are identical to intensifiers with the same range of uses, but with a directional origin (Tahitian, Marquesan and Hawaiian *iho* ‘downwards’).
- g) Reflexive markers derived from a deictic origin (Rapanui ‘*a*’).
- h) Verbal modifiers of unknown lexical origin, used at least as adverbial exclusive and attributive intensifiers and in reflexive constructions (Nêlêmwa *daa*, Caac *ja[e]*, Nyêlayu *jiwa*).
- i) Head reflexives like *ham-* ‘responsibility’, ‘duty’ + possessive suffix in Iaaï, used as intensifiers in adnominal and exclusive adverbial functions.

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23. Similar to English ‘very’ < Old French *verai* ‘true’, in expressions as ‘the very man I want to see’.

24. Of course, other languages in the world use ‘only/alone’ as intensifier and reflexive marker, for example Ute (Colorado).

- j) The nominal adjunct *ketre* ‘other’ (Drehu), which is used as a reflexive marker and exclusive adverbial intensifier for unexpected participants.
- k) A verbal modifier meaning ‘spontaneously’ (Fagauvea, Ura, Sye).
- l) There are only few cases of reflexive markers derived from expressions for body parts (Kwaio; and in non-Oceanic Austronesian languages as in Bahasa Indonesia).
- m) A derivational (affixal) strategy, due to the extension of a reciprocal marker into the semantic domain of reflexivity (languages of the North and Centre of New Caledonian Mainland).

### 6.3. Diversity of the intensifier functions

Intensifiers in Oceanic languages do not seem to have an inclusive adverbial use; a focus particle meaning ‘also, too’ will always be required in this semantic context,<sup>25</sup> even if the intensifier may be added to reinforce it. The attributive identity function (English *own*) is expressed either by the relevant intensifier or by an adjunct meaning ‘true’.

Note that several markers that play a role in constructions expressing reflexivity may co-occur in one language, and are moreover often polysemous, for instance: East Uvean restrictive *pē* and *totonu* ‘true, exact’; Ajië *yâi* ‘backwards’ and *tëë* ‘again’, Māori *anō* ‘again’ and (*an*)*ake* ‘alone’, Drehu *ketre* ‘other’, *sipu* ‘true’ and emphatic *kō*; Fagauvea *pusu/supu* ‘spontaneously’ and *hage* ‘alone’; Fijian *gā* ‘alone’, *vakātaki* ‘be like’ and *dui* ‘each’, etc.

There are no fully grammaticalized reflexive anaphors in Oceanic languages, since the constructions invariably include a pronominal object in addition to the reflexive markers, whereas reflexive anaphors typically replace the object. However, it would not be surprising to find that some of the intensifiers evolve towards reflexive anaphors, especially those whose position is already fixed after the object pronoun; the present situation of the Oceanic languages is similar to the way Middle English evolved from Old English, with the progressively obligatory presence of *self/seolf/sylf* in contexts where the reflexive interpretation was not obvious, i.e. with “other-directed” predicates (e.g. verbs of communication or denoting violent actions) and with 3rd person arguments.

We also found confirmation of König’s (2001) hypothesis that “[i]f a language uses the same expression both as an intensifier and as a reflexive anaphor, this expression is not used as a marker for derived intransitivity”, i.e., as middle marker (König 2001: 752). None of the languages considered in this article has

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25. For example, Samoan *fo’i*, Tuvaluan *foki eiloo*, Tokelauan, East Futunan and East Uvean *foki* (which in some languages also means ‘return’), as well as Tahitian *ato’a* have the inclusive adverbial intensifying function.

extended their reflexive markers into the middle domain. Even in those cases where the reflexive construction has expanded its territory into the reciprocal domain, it has never extended into the middle domain.

#### 6.4. Ambiguities

Oceanic languages exhibit different sorts of syntactic ambiguity, which are not linked to the strategy in question. There is always a way of disambiguating an utterance by adding an adverb, or by using a combination of different strategies which makes the situation more explicit, but it is mainly world knowledge and the linguistic context that help to select a specific interpretation (cf. also Heine and Miyashita this volume). Ambiguity may arise between the following types of contrasting situations.

##### 6.4.1. *Non-symmetric versus reciprocal versus reflexive situations*

This is the most extreme case of ambiguity, found, for example, in Toqabaqita:

- (152) Toqabaqita (Lichtenberk 1991: 172)  
*keero'a keko thathamī keero'a*  
 3DU 3DU like 3DU  
 'They liked them/each other/themselves.'

##### 6.4.2. *Non-symmetric versus reflexive situations*

This is the most frequent case, found in Fijian and in Māori, among other languages:

- (153) Fijian (P. Geraghty, p.c.)  
*era<sub>x</sub> katī ira<sub>x/y</sub> na kolī<sub>x</sub>*  
 3PL bite 3PL.OBJ ART dog  
 'The dogs are biting them/themselves.'
- (154) Māori (Bauer 1997: 636)  
*i tapahi a Marama<sub>x</sub> ia ia<sub>x/y</sub>*  
 PRF cut ART.PERS Marama OM 3SG  
 'Marama cut her', 'Marama cut herself.'

Note that this situation also exists in French, but concerns the secondary reflexive strategy with oblique object verbs in sentences such as 'Il<sub>x</sub> n'a pas confiance en lui<sub>x/y</sub>'; 'A présent il<sub>x</sub> travaille pour lui<sub>x/y</sub>'; 'Mon fils<sub>x</sub> fait toujours bien attention

à lui<sub>x/y</sub>', etc., i.e. in all sentences in which 'même' is not required for a reflexive meaning, whereas the corresponding English examples are never ambiguous: 'He<sub>x</sub> has no confidence in him<sub>\*x/y</sub>'; 'He<sub>x</sub> is now working for him<sub>\*x/y</sub>'; 'My son<sub>x</sub> always takes good care of him<sub>\*x/y</sub>', etc.

#### 6.4.3. *Non-symmetric versus reciprocal situations*

With dual or plural arguments, we found examples of ambiguity between non-symmetric and reciprocal situations<sup>26</sup> in a few Kanak languages, like Numèè (cf. [20]) and Xârâcùù (cf. [115]).

#### 6.4.4. *Reciprocal versus reflexive situations*

In contrast to the preceding cases, this kind of ambiguity is not due to a low degree of grammaticalization but to the use of the same marker for two different situations. Ambiguity is limited to dual or plural arguments. With singular arguments, the interpretation can only be a reflexive one. And even with dual or plural arguments, the meaning of the predicate or our world knowledge is often sufficient to get the right interpretation. In Eastern Polynesian languages, where the construction expressing reflexivity has been extended to the reciprocal domain, a difference is showing up, with reduplication of the pronoun for reciprocals. This seems to confirm the assumption that constructions expressing reflexivity in Oceanic languages are likely to be more transitive than the ones used for reciprocity.

#### 6.4.5. *Reflexive versus iterative situations*

The 'return/again' strategy may cause ambiguity between reflexive and iterative interpretations. In some languages, this strategy was extended to the reciprocal domain, adding another possible ambiguity (see [115]).

### 6.5. *Dynamicity of the constructions*

The fact that informants recurrently insist on the dynamic meaning of the circumfixed constructions led me to the following hypothesis: the suffixed part of the Loyalty Islands circumfix could come from the directional preposition meaning 'towards', e.g. Nengone *jew(e)* > *-jeu*, Drehu *kowe* > *-keu*, Iaaï *köö*

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26. Could such an ambiguity occur in French? Can a sentence such as *ils sont fiers d'eux* lead to three different interpretations: 'they are proud of them', 'they are proud of themselves', 'they are proud of each other'? Personally, I would not exclude any of these interpretations.

> *-kōu*. We have encountered many languages which use dynamic (ad)verbs (‘return/again’), or directionals such as ‘downwards’ for both reflexive and reciprocal situations; ‘backwards’ is used as a reflexive marker, and ‘back and forth’ is a reciprocal strategy in Toqabaqita. In West Futunan, a Polynesian Outlier, the adverb marking reciprocity is *nanoa* ‘all around’:

(155) West Futunan (Capell 1984: 41)

*akirea ni-sireia nanoa i akirea*  
 3PL PRF-look.TR all.around at 3PL  
 ‘They looked at each other.’

According to Harrison (1976: 200–201), the Mokilese (Micronesia) suffix *-pene* “indicates either motion of separated objects towards one another or some reciprocal (shared) relationship or activity”. This dynamic way of expressing reciprocity and/or reflexivity – which is quite recurrent in Oceanic languages – contrasts with the use of the Proto Oceanic prefix *\*paRi-* when it is used by itself. Finally, it may be interesting to note that *\*(C)aki*,<sup>27</sup> i.e. the suffixed part of the Proto Polynesian circumfix used to express reciprocity, takes the same form as the instrumental and comitative preposition, in languages such as East Futunan, Tongan and East Uvean. This kind of affinity can also be found in the languages described by Maslova (2000) or in Bantu languages between reciprocals and comitative markers.

## 7. Historical hypothesis

As we have seen, reflexives and reciprocals are not expressed by the same morphological markers in most Kanak languages, nor in most Polynesian languages. The exceptions are the following:

- (i) A few Kanak languages in the North of the Mainland of New Caledonia, which use reflexes of the POC prefix *\*paRi-* as both reciprocal and reflexive markers;
- (ii) Very few Kanak languages in the South of the Mainland, where an (ad)verb meaning ‘again/return’ is used in both cases (for reciprocals and reflexives), as well as in Eastern Polynesian languages, where intensifiers mark both

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27. The Proto Oceanic suffix *\*-aki(ni)* had the same meanings: comitative, instrumental and beneficiary. In Polynesian languages, the suffix *-(C)aki* has no reciprocal use by itself, but it may have a comitative use, as in East Uvean (*fai* ‘do’ > *fai’aki* ‘agree’, lit. ‘do with’; *hola* ‘flee’ > *holafaki* ‘flee with’).

reflexives and reciprocals. But in these latter cases, the Proto Oceanic prefix *\*paRi-* is not involved.

I will try to formulate a few hypotheses on the historical development of these markers. According to Lichtenberk (2000: 57), “in the Oceanic case, there is evidence that it was a plurality of relations that was historically the primary factor”. Starting from the plausible hypothesis that the POc *\*paRi-* prefix initially encoded a plurality of relations, we can make two different assumptions:

- (i) A marker originally denoting a plurality of relations has extended its use to the domain of reciprocity, by adding a pronominal object or a suffix. Later on, a ‘reciprocal towards reflexive’ evolution occurred at least in a few Kanak languages.
- (ii) Alternatively, reciprocals may have developed from transitive constructions, through the addition of the middle prefix in order to avoid ambiguity with non-reciprocal events, an ambiguity that still persists in a few Kanak languages (e.g. Numèè) and with some verbs in Toqabaqita.

Both hypotheses seem equally plausible. The latter hypothesis is supported further by the following consideration: According to Frajzyngier and Curl (2000b: viii), “a test of whether a given marker is reciprocal or not is with singular subjects. If such deployment is possible, then the marker is not reciprocal, i.e., its inherent function is not to code the reciprocal”. The fact that Proto Oceanic *\*paRi-* may appear with singular subjects could be regarded as an indication of the fact that it was originally a middle marker. However, according to Lichtenberk (1991: 181), the depatientive function of the Toqabaqita *kwai-* prefix is more recent than its reciprocal function; therefore, Lichtenberk opts for a ‘reciprocal towards middle’ evolution.

Another hypothesis has been put forward by Kemmer (1993: 231–232): If there is a middle and it does not express reflexivity, this is due to loss. Applied to Oceanic languages, we would have to assume the following, very specific, scenario. Supposing that the Proto Oceanic middle/reciprocal prefix was also used to mark reflexives, it would have disappeared entirely as a reflexive marker in many languages (e.g. most of New Caledonian languages, all the Polynesian and many other Oceanic languages), even though it was retained in some languages as a middle marker and, more widely, as a reciprocal marker. Intensifiers would then have appeared in those cases where ambiguity arose between non-symmetric and reflexive situations, after the prefix had been lost. In Eastern Polynesian languages, the prefix was even lost in its reciprocal use.

The opposite (and more plausible) hypothesis assumes the existence of a middle/reciprocal marker which was originally not used for reflexivity. In those

languages where reflexivity is presently marked by a reflex of the POC prefix *\*paRi-*, we could imagine that it was the middle/reciprocal marker that extended in its use to the domain of reflexivity. This hypothesis would also account for the fact that very few Oceanic languages use the POC prefix for reflexivity. However frequent the historical development ‘reflexive > middle’ might be worldwide (cf. Heine and Miyashita this volume), it does not seem to be attested in Oceania.

Another point worth mentioning is that according to Brill (2005), the considerable degree of polysemy of the reflexes of *\*paRi-* in Kanak languages of the Mainland to mark reciprocity and related values is due to the loss of the suffix and of reduplication, thus associating the prefix with “a number of the meanings (especially distributive and dispersive) usually devolved to the combined POC affixes *\*paRi-...-aki* or to combined reduplication in other Oceanic languages” (Brill 2005: 70). However, reflexes of *\*paRi-* also show a wide range of polysemy in some languages which have lost neither the suffix nor reduplication. The use of the prefix only (i.e. Drehu *i-* or East Futunan *fe-*, as shown in Moyse-Faurie 2001 and 2007) may express depatientive, grooming, collective, chaining, emotive actions or plurality of participants. Besides, the range of functions and meanings of the Polynesian affixes is as large as is the combination of the prefix with the coreferential pronominal object in Kanak languages.

Just as in Kanak languages of the Mainland, there are other Oceanic languages, like Saliba or Roviana, in which reciprocal meanings are conveyed by transitive constructions, with pronominal objects but without suffixes. As pointed out by Waterhouse (1928, updated by L. Jones 1949: 232), in Roviana “the reciprocal prefix is *vari*, with the objective suffix agreeing with the subject. The word base is often reduplicated”.

Maybe it is more adequate to assume that reciprocal constructions in Proto Oceanic were either transitive with a coreferential pronominal object, or intransitive with a circumfix, so that the languages spoken today represent one or the other of these two options, or a combination of both, as Iaaï does (cf. Section 3.3.2). Reduplication would then only be a subsidiary phenomenon, which may (i) reinforce a reciprocal interpretation, (ii) carry a basic frequentative, intensive or diminutive meaning, as is still the case in Polynesian languages, or (iii) indicate a plurality of participants, without being able to express reciprocity by itself. In Proto Oceanic there may thus initially have been an intransitive construction with merely a verbal prefix for the middle voice, to which either a suffix or a co-referential object pronoun was added to express reciprocity and related situations, and became associated with reduplication.

Finally, I would like to raise the question of whether it is possible to reconstruct reflexive constructions in Proto Oceanic. Although the middle/reciprocal markers are clearly related (reflexes of the POC *\*paRi-* prefix), we have seen

that the reflexive markers have many possible origins, some of which reflect universal cognitive schemas.

Once again, we can see the importance of body parts in the development of intensifiers and reflexive markers (cf. [58] above). Even though only very few Oceanic languages use that strategy for marking reflexivity, a Proto Oceanic reflexive marker of exactly this sort (POc *\*sibwa-*) has been reconstructed by John Lynch (p.c.). There are traces of this marker in Vanuatu languages (Anejoñ *isp<sup>w</sup>a*, cognate with Sye *ehpe-* and Lolovoli *sibo-*, according to Lynch p.c.).

Nonetheless the ‘alone’ and the ‘return/again’ strategies are the more widely attested ones in Oceanic languages and could be regarded as either areal or inherited features used to express reflexivity.

## 8. Conclusions

The major results of this study are the following:

- (i) In contrast to what is widely assumed in the relevant literature, there *are* markers for the encoding of reflexivity in Oceanic languages. More often than not, these markers exhibit the different uses and interpretations of intensifiers identified in the typological literature (cf. König and Gast 2006) and can therefore be subsumed under this category. Note that reflexive constructions in Oceanic languages are typically transitive.
- (ii) In most languages, reciprocal situations are expressed by the same prefixal strategy as middle ones, often in combination with coreferential pronominal objects or with verbal suffixes.
- (iii) Reciprocal constructions generally exhibit a higher degree of grammaticalization than reflexive ones.
- (iv) In spite of the enormous variation found in reciprocal and in reflexive constructions it has been possible to advance new hypotheses on their historical development. Oceanic languages provide evidence that not only the development from reflexive to reciprocal meanings is found in the languages of the world (cf. Heine and Miyashita this volume), but also an extension of reciprocal meanings into the reflexive domain.

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# The intersection between reflexives and reciprocals: A grammaticalization perspective

*Bernd Heine and Hiroyuki Miyashita*

## 1. Introduction: reflexives and reciprocals

Constructions expressing reflexives and reciprocals tend to involve a range of different conceptual situations (see e.g. Lichtenberk 1985, 2000; Geniušienė 1987; Kemmer 1993; McGregor 2000). The present paper will be confined to a few prototypical situations, which are depicted in (1): (1a) describes a canonical reflexive situation, where a singular referent A acts on himself or herself (A).<sup>1</sup> The remaining situations involve multiple (typically plural subject)<sup>2</sup> referents: (1b) refers to a situation where there are two or more referents (A, B, etc.), each acting on himself or herself. (1c), finally, describes a simple inverse relation, where A acts on B and B on A.

- (1) Paradigm anaphoric relations (to the left of “>” = typically clausal subject; to the right of “>” = typically clausal object)
- a. A > A
  - b. A > A, B > B
  - c. A > B, B > A

Crosslinguistically, there are different ways in which the relations distinguished in (1) are encoded. (1a) and (1b) generally receive the same encoding and, as we will see below, (1c) is structurally distinguished from all other relations in the majority of languages. But there are other taxonomic divisions in addition to those in (1). In Hebrew, for example, there appears to be a threefold distinction: there is a reflexive category combining (1a) and (1b), but (1c) distinguishes two

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1. The phrase “acts on” is not meant to be restricted to actions and agent-patient relations; rather, it includes activities and states as well as a range of other case roles.

2. Note, however, that the antecedent in reflexive or reciprocal situations need not be a subject referent, even if in the vast majority of cases it is.

kinds of reciprocal situations, using, respectively, the plural demonstrative (*éle*, cf. [2a]), and the singular demonstrative (*ze*, cf. [2b]).

- (2) Hebrew (Glinert 1989: 69)
- a. *ha-toshavim san'u éle et éle*  
 the-inhabitants hated these OM these  
 ‘The inhabitants hated one another  
 (i.e. one group hated the other).’
- b. *ha-toshavim san'u ze et ze*  
 the-inhabitants hated this OM this  
 ‘The inhabitants hated one another  
 (i.e. each person hated the other).’

The threefold distinction proposed in (1) can be conceptually complex: It may be opaque with reference to the distinction “reflexive” vs. “reciprocal”, in that it essentially implies both. For example, the Swahili sentence (3a), using the reflexive prefix *ji-*, clearly has a reflexive reading but does not exclude a reciprocal interpretation in specific contexts, even though Swahili makes a rigid distinction between reflexive and reciprocal marking (the latter being expressed by the verbal suffix *-an*). Accordingly, (3b) is odd or even ungrammatical,<sup>3</sup> since the second clause excludes a reciprocal reading.

- (3) Swahili (p.k.)
- a. *tu-na-ji-ona katika kioo*  
 we-PRS-REFL-see in mirror  
 ‘We see ourselves (/each other) in the mirror.’
- b. *?tu-na-ji-ona katika kioo, lakini ha-tu-on-an-i*  
 we-PRS-REFL-see in mirror but NEG-we-see-RECP-NEG  
 (‘We see ourselves/each other in the mirror but we don’t see each other.’)

Quite a number of languages make a categorical distinction between (1c) on the one hand and all other situations on the other, referring to the former as a “reciprocal” and to the latter as a “reflexive” category. Our interest in this paper is with languages where all relations depicted in (1) are expressed by one and the same linguistic form – in other words, where there is reflexive-reciprocal

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3. The Swahili verb *-ona-na* has a second meaning ‘meet’. When this meaning is implied, (3b) is grammatical; hence, (3b) is grammatical with the meaning ‘We see each other in the mirror but we don’t meet.’

polysemy. We will say that such languages have a “REF-REC category”, that is, a grammatical form and associated construction used for both reflexive and reciprocal meanings.<sup>4</sup> What characterizes such categories is that they exhibit a high degree of ambiguity. The German *sich*-construction<sup>5</sup> is a case in point, as the following example may show: It includes, but is not restricted to, the meanings (4a), (4b) and (4c).

(4) German

*Sie hassen sich.*

they hate REFL/RECP

- a. ‘Each of them hates himself/herself.’
- b. ‘[Some or all people of group A] hate [some or all people of group B].’
- c. ‘They hate each other.’

We will be concerned with some structural properties of REF-REC categories and with how these properties can be explained; these issues will be addressed in Sections 2 and 3. For a better understanding of these categories, we will deal with the conceptual sources of reflexives and reciprocals in the remainder of the present section.

According to our data from roughly 150 languages, at least every third language has a REF-REC category. This is confirmed by a language survey of worldwide distribution by Maslova and Nedjalkov (2005), as Table 1 shows.<sup>6</sup> As the analysis of these authors suggests, languages distinguishing between reflexive and reciprocal constructions clearly constitute the majority of the world’s lan-

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4. This does not mean that in such languages there are no other means for expressing reflexivity and reciprocity.

5. The German invariable particle *sich*, which does not discriminate between case or number, is used only with third person referents. Otherwise, personal pronouns are used. In its reflexive uses, the construction may be strengthened by the intensifier *selbst* or *selber*, and in its reciprocal uses by *gegenseitig* or *wechselseitig* ‘mutually’. Reciprocal *sich* has *einander* ‘each other’ as an optional variant in many, though not all, contexts (cf. Gast and Haas this volume).

6. In the sample of Maslova and Nedjalkov (2005) there are actually 177 languages. The authors include a fourth type, consisting of 19 languages, which have “no non-iconic reciprocal constructions”. With “iconic reciprocal construction” they refer to a reciprocal situation encoded by the repetition of the main verb (or of the clause). Maslova and Nedjalkov observe that the distinction between languages having no non-iconic reciprocal construction and other languages is of limited theoretical significance, and we have excluded these 19 languages from our calculation in Table 1.

*Table 1.* Types of reciprocal constructions in 158 languages (based on Maslova and Nedjalkov 2005).

	Type of construction	Number of languages	Percentage
1	All reciprocal constructions are formally distinct from reflexive constructions	97	61.4 %
2	There are both reflexive and non-reflexive reciprocal constructions	15	9.5 %
3	The reciprocal and reflexive constructions are formally identical (= REF-REC)	46	29.1 %
	Total	158	100.0 %

guages (61.4%), while languages with REF-REC categories form a significant minority (29.1%). If one adds the languages of type 2, which have a REF-REC construction in addition to a distinct reciprocal construction, a total of 38.6% of the world's languages have a REF-REC category.

### Similarities between reflexives and reciprocals

We will assume that reflexivity and reciprocity are universal concepts insofar as all languages can be expected to have some grammaticalized expression for both. Still, this assumption is in need of qualification, since there are a few languages that appear to be exceptional. For example, the Portuguese-based São Tomé Creole is said to have no productive means of expressing reflexivity (Ferraz 1979: 72), and while all languages appear to dispose of some grammatical or lexical means for encoding reciprocal events, not all have productive constructions for doing so. In the Papuan East Central Highlands language Yagaria there are only two verbs (*ami*- 'to give', *nuki*- 'to embrace') that employ a special reciprocal construction; otherwise, clause combining is used (Renck 1975: 147–148), and in the Central Malayo-Polynesian Kambera language of Eastern Indonesia the concept of reciprocity is not expressed by any specific syntactic construction or pronoun (Klamer 1994: 177).

As we just observed, the defining property of REF-REC categories is the presence of a reflexive-reciprocal polysemy. The use of the term "polysemy", however, is not without problems and has been the subject of controversies; we will use the term in a loose sense. Reflexives and reciprocals are functionally similar and tend to behave syntactically alike. Both denote what McGregor (2000: 109) refers to as "self-directed" actions,<sup>7</sup> and in many frameworks of linguistic cate-

7. For a different use of this term, see König and Vezzosi (2002: 213–4), for whom self-directed actions correlate positively with reflexivity but not usually with reciprocals (see also Section 3.1).

gorization they tend to be allocated to one and the same general syntactic taxon. Both tend to have the same syntactic effect, namely that of reducing the valency frame of the verb by one participant, which typically is the direct object, and in a number of languages reflexives and reciprocals have morphosyntactic properties of intransitive verbs (see e.g. McGregor 2000 on Nyulnyulan languages). In the binding theory of syntax, reflexives and reciprocals are treated on a par, both being anaphors subject to binding principle A of the Binding Theory (see e.g. Everaert 2000: 73). Still, there are structural differences, pointed out in some grammatical descriptions; we will return to them in Section 2.1.

Most grammars remain silent on the polysemy vs. homonymy issue, that is, the authors concerned do not commit themselves to deciding on which of the two is involved. Still, there are some who favour an approach in terms of homonymy; Helbig and Buscha (1988: 217), for example, treat the reflexive and reciprocal meanings of German *sich* as homonyms. Others again view the relationship of reflexives and reciprocals essentially as one of “sameness”, hence, as one which can be captured neither in terms of polysemy nor of homonymy. In his detailed survey of reflexive-reciprocal constructions in the Nyulnyulan languages of Dampier Land, Western Australia, McGregor (2000: 118) concludes “that specific senses such as reflexive, reciprocal, chaining, etc. are contextual senses of the general meaning of the reflexive/reciprocal; the construction is not polysemous, and there is no ambiguity – merely vagueness [...]”

Assuming that McGregor’s analysis is a correct account of the situation found in the languages studied by him, we will nevertheless maintain that reflexive and reciprocal are conceptually distinct, and that in cases where one and the same utterance can be interpreted either way we are dealing with cases of ambiguity, for the following reasons. First, as our depiction in (1) suggests, and as has also been pointed out by a number of authors, reciprocals are conceptually more complex than reflexives insofar as they combine expressions for two simple situations ( $A > B$  and  $B > A$ ), and all languages appear to have the option of encoding reciprocal situations by means of a conjunction of two predications (Maslova and Nedjalkov 2005). In some languages, this option appears to form the primary or the exclusive strategy for encoding reciprocity; for an example from the Trans-New Guinean language Amele of Papua New Guinea, see Maslova and Nedjalkov (2005, example [4]).

Second, even in languages where one and the same expression is used for both reflexives and reciprocals, speakers are nevertheless fully aware of the conceptual difference between the two. Third, crosslinguistic observations show that in many languages (including English) the two are formally distinguished. And fourth, even if there is only one construction used for both in a given language, that is, if there is a REF-REC category, there are usually conventionalized means

of distinguishing the two (see Section 2.6). Note furthermore that according to Maslova (this volume) there is no natural non-linguistic category subsuming both reflexives and reciprocals.

### 1.1. Sources of reflexives

A survey of some 150 languages of worldwide distribution suggests that there are four main strategies used to develop reflexive markers; they are summarized in Table 2 (see Heine 2000; Schladt 2000; Heine and Kuteva 2002). These strategies are defined in terms of conceptual discontinuities; with reference to morphosyntactic structure, this implies that reflexives can be derived from a range of quite different forms, in particular from pronouns, noun phrases, and adverbial modifiers (see Faltz 1977; Evans this volume; König and Kokutani 2006).

Table 2. The main strategies to develop reflexive markers.

<i>Label</i>	<i>Strategy</i>
a PRONOUN <sup>8</sup>	Use personal pronouns
b INTENSIFIER	Add an intensifier ('-self') to (a)
c BODY <sup>9</sup>	Use a body-noun (plus possessive attribute)
d ALONE	Use an adverbial 'alone' or 'only'
e Other sources	Mostly opaque

The strategy labels used in Table 2 are not entirely satisfactory, since they refer to entities that are syntactically disparate. Our reason for proposing them nevertheless is that we wish to use terms that are as conceptually specific as possible. This means that in the case of BODY and ALONE we are able to narrow down the conceptual sources of reflexives to a highly specific range of concepts, while in the case of the PRONOUN strategy we had to decide on a fairly general morphosyntactic notion since it is the entire range of personal pronouns that is associated with this strategy. The pronoun strategy can be illustrated with the following example, where plain personal pronouns are used for reflexive reference:

#### (5) German

*Ich habe mich verletzt.*

I have me hurt

'I've hurt myself.'

8. The PRONOUN strategy is commonly called the [uR] ("unmarked reflexive") strategy.

9. This strategy is called the "noun strategy" in Heine (2003).

Most languages using the pronoun strategy restrict it to first and second person referents. Only a minority uses it for third person referents in addition, documented cases being Old English, Frisian, Harway (a non-Austronesian language of Papua New Guinea), a number of Malayo-Polynesian languages, as well as some pidgins and creoles (cf. Carden and Stewart 1989: 85; Heine 2003).

An example of the intensifier strategy is provided in (6) from Irish, where “the word *féin* added after a pronoun indicates that that pronoun is reflexive” (Faltz 1977: 34). At least in the genesis of intensifier constructions, the intensifier (variously referred to as an “emphatic reflexive” or “intensive reflexive”) is added to the pronoun strategy (see Faltz 1977: 239ff.; König and Siemund 2000).

- (6) Irish (Faltz 1977: 34)
- a. *ghortaigh Seán é*  
hurt Sean him  
'Sean hurt him.'
  - b. *ghortaigh Seán é féin*  
hurt Sean him self  
'Sean hurt himself.'

The paradigm conceptual source of the body (or noun) strategy is to use a noun for ‘body’, less commonly ‘head’, with (or without) appropriate possessive attribute to grammaticalize a reflexive marker, cf. (7):

- (7) Yagaria (Papuan, East Central Highlands; Renck 1975: 148)
- d-ouva-di begi-d-u-e*  
my-body-my beat-PST-1SG-IND  
'I hit myself.'

In addition, a few other nouns may serve as conceptual sources of reflexive markers, such as ‘skin’, ‘bone’, or ‘heart’, ‘soul’ and ‘breath’ in Semitic languages (e.g., Maltese *nifs*, PL *nfûs* ‘breath’ and *rûh* ‘soul’; cf. Sutcliffe 1936: 172).

The ALONE strategy subsumes restrictive adverbial modifiers denoting ‘alone’ or ‘only’, where a proposition of the type [A acts only on A] is reinterpreted as [A acts on A himself]. Thus, the Amerindian language Ute of Colorado (Burch 1980: 149) uses the reflexive word *nanóq-s*, apparently derived from the adverb *nanóq-s* ‘alone, by oneself’, which is still ambiguous between the two uses (in addition, it appears to include that of an intensifier):

- (8) Ute (Burch 1980: 149)

*ta'wá-cí 'u nanóq-s nḡká-y*  
 man-SM he self hear-IMM

(a) 'The man heard himself.'

(b) 'The man himself/alone heard (something).'

In the English-based pidgin Bislama, the modifier *nomo* 'only' serves as an optional modifier when a reflexive meaning is intended:

- (9) Bislama (English-based pidgin; Crowley 1990: 311)

*tufala gel ia i sakem paoda long tufala (nomo)*  
 two girl the PTC tip powder LOC two only

'The two girls tipped powder over themselves.'

As we observed above, the strategies listed in Table 2 are not mutually exclusive; rather, they may combine. This appears to be obligatory in the case of the intensifier strategy, but it may as well affect other strategies, such as the noun and the intensifier strategies, as in (10).

- (10) Seychelles Creole (French-based creole; Corne 1988a: 75)

*i n koriz soñ lekor li-mem*  
 he TAM improve his heart him-self

'He improved himself.'

These appear to be the main sources of reflexive markers, but there are a number of additional sources whose conceptual status needs further research.

Opaque markers are highly grammaticalized reflexive forms whose etymology is unknown. Most of them are verbal affixes. A typical case is provided by the Swahili reflexive prefix *ji-*, illustrated in (3) above. There are some hypotheses on its non-reflexive origin, but none of the hypotheses is entirely convincing; we therefore list it under "other sources" in Table 2.

## 1.2. Sources of reciprocals

The term "reciprocal" is used here in its standard format (for definitions, see e.g. Kemmer 1993: 102; Lichtenberk 1994; Heath 1999: 343; Lichtenberk 2000: 34). Antecedents of reciprocal situations are almost invariably plural or conjoined singular subject referents ('A and B'). This, however, is not an absolute requirement. First, there may be collective or abstract participants triggering reciprocal marking, even though they are morphosyntactically singular:

(11) German (Starke 1993: 233)

*Als die Familie sich geküsst, sich umarmt*  
 when the family REFL/RECP kissed REFL/RECP hugged  
*hatte [...].*  
 had

‘When the family had kissed and hugged one another [...].’

And second, there appear to be languages, such as the Pama-Nyungan language Ngiyambaa of Australia, where reciprocity requires a single noun phrase, that is, where a conjunction of noun phrases does not trigger reciprocity; rather than two noun phrases, different clauses are required for reciprocity in Ngiyambaa (Maslova and Nedjalkov 2005, Evans this volume).

In some languages, further number distinctions are made. For example, in the Yuman language Hualapai of Arizona (Watahomigie et al. 2001: 331) some speakers distinguish between a dual (-*b*) and plural (-*v*) reciprocal, cf. (12); see also our Hebrew example in (2).

(12) Hualapai (Yuman; Watahomigie et al. 2001: 331)

*u:k* ‘to see’  
*jij’u:bk* ‘(two persons) to look at each other’  
*jij’u:yk* ‘(three or more persons) to look at one another’

Typically there are specific functional categories that serve to express reciprocity, and our interest in this paper will be with such categories. Still, there are various other means of encoding reciprocity; for example, an expression like *We are brothers* may be taken to be an instantiation of this concept. According to Kemmer (1993: 48) reciprocals are crosslinguistically a “minor prototype”, insofar as they tend to be subsumed under alternative functions such as “reflexive” or “collective”; we will return to this issue below.

A crosslinguistic survey suggests that there is a small range of conceptual strategies that tend to develop into reciprocal markers (see also Heine and Kuteva 2002). We will now discuss each of these strategies in turn.<sup>10</sup>

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10. We are not concerned here with morphosyntactic parameters, for which see Evans (this volume), König and Vezzosi (2004), König and Kokutani (2006). The reason for focussing on conceptual parameters is that, first, our survey suggests that there are specific mental templates that appear to be recruited time and again to express reciprocity, and, second, that morphosyntactic structures take a wide range of different formats, many of which can be accounted for in terms of the conceptual parameters. As we will see below, for example, there are reciprocal markers that are historically derived from nouns meaning ‘comrade’, ‘neighbour’, and the like. Depending on their

**COMRADE**

The first strategy concerns nouns whose meaning implies a reciprocal relation, such as ‘comrade’, ‘mate’, ‘companion’, ‘friend’, ‘fellow’, or ‘neighbour’, typically used as verbal object complements.<sup>11</sup> For example, in the Gur language Koromfe (Rennison 1996: 110), “[t]he reciprocal pronoun is the word *dono*, PL. *dombΛ* ‘comrade’, which exists as a noun in its own right”; cf. (13):

- (13) Koromfe (Gur, Niger-Congo; Rennison 1996: 112)

ɔ            dāĩ            hũ    jellΛΛ        dombΛ  
 PRON.1PL   house.PL   two   see.PROG   comrade.PL  
 ‘Our two houses see one another.’

The Songhay language Koyra Chiini (Heath 1999: 341) has a decategorialized form of the noun *čere* ‘friend, peer, mate’ as a reciprocal marker, taking no possessor, no definite marker *di*, and no plural marker *yo*;<sup>12</sup> the decategorialized noun is indefinite or generic. Example (14a) illustrates the nominal and (14b) the reciprocal use of *čere*.

- (14) Koyra Chiini (Songhai, Nilo-Saharan; Heath 1999: 342–343)

a. *boro foo si yadda ŋgu čere ma koy*  
 person one IMPF.NEG consent LOG.SG friend SBJV go  
*ka nan ŋgu*  
 INF leave LOG.SG.OBJ

‘No man<sub>i</sub> will accept that his<sub>i</sub> friend goes (to work) and leaves him<sub>i</sub> behind.’

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relative degree of grammaticalization, such markers may exhibit the morphosyntax of nouns in one language, that of pronominal or adverbial elements in a second, that of verbal clitics in a third, and that of verbal affixes in a fourth language. If one wants to understand why such markers take the form they do, a morphosyntactic approach ignoring the relative degree of grammaticalization of these markers is only of limited use.

One may also wonder why such disparate expressions as quantifiers and manner adverbs are associated with one and the same strategy. The reason is that what we are concerned about with the ONE-ANOTHER strategy is that there are two contrasting participants conceived of as interacting with one another in one and the same situation – irrespective of which particular lexical or morphosyntactic encoding is involved.

11. For an example of incipient grammaticalization involving a noun for ‘brother’ (*brata*) in Tok Pisin, see Evans (this volume).
12. Heath (1999: 341) observes that in Koyra Chiini “there are several nouns meaning ‘friend’ or the like, most of them indicating a strong or more specific social and emotional bond than *čere*.”

- b. *wor o faaba čere*  
 2.PL.SBJ IMPF help friend  
 ‘You (PL) help each other.’

In the Mande language Tigemaxo (or Bozo), the reciprocal marker *bɔlɔ*, also used for the collective function (‘do together’), is derived from the noun *bɔlɔ* ‘comrade, companion’ (see example [46]; Blecke 1996: 111). The reciprocal marker of the Chadic language Kwami appears to be derived from a noun for ‘mate, friend’: Leger (1994: 169) notes that the reciprocal marker *ʔáppé* has a plural form *ʔáppín* meaning ‘mates, friends’. Assuming that this hypothesis is sound, *ʔáppé* has been decategorized to the extent that it no longer shows agreement in number with the subject, that is, the singular form has been generalized.

- (15) Kwami (Chadic, Afroasiatic; Leger 1994: 168–169)

*yìn shimmángò ʔáppé*  
 they have.met RECP  
 ‘They have met each other.’

In the West Atlantic language Gola, the noun *ódàyé* ‘comrade’ is used in a decategorized form (*dáyé*) as a reciprocal marker (cf. [16]), and in Central African Ubangi languages (Santandrea 1965: 87), a noun for ‘neighbour’ appears to have developed into a reciprocal marker, cf. (17).

- (16) Gola (Atlantic, Niger-Congo; Westermann 1921: 51)

*kpɔma dáyé*  
 they help comrade  
 ‘They helped each other.’

- (17) Gabu (Ubangi, Niger-Congo; Santandrea 1965: 87)

*sí dra sí akúsi*  
 they insult them their.neighbours  
 ‘They insulted each other.’

A number of additional examples can be found in creole languages. In the French-based Seychelles Creole, the noun *kamarad* has developed into a reciprocal marker (cf. [18]), and much the same has happened in the Portuguese-based Kabuverdiano creole, where Portuguese *companheiro* ‘comrade’ has given

rise to the reciprocal marker *kúmpañeru* (cf. [19]). In the Dutch-based creole Berbice, the reciprocal marker *mati* is also a noun meaning ‘companion, friend’, and Kouwenberg (1994: 183) observes that this gives rise to some ambiguity. For example, in (20), where there is no antecedent, either the nominal or the reciprocal reading may be intended.

- (18) Sechellois (French-based creole; Papen 1978: 303)

*nu a kapav trôp kamarad ê zur*  
 we FUT able cheat RECP one day  
 ‘We’ll be able to cheat each other one day.’

- (19) Kabuverdiano (Portuguese-based creole; Reiter 2000: 36)

*ez ta kre kúmpañeru cew*  
 they ASP love RECP much  
 ‘They love each other very much.’

- (20) Berbice Dutch (Dutch-based creole; Kouwenberg 1994: 184)

*o suk horo mati bere ka*  
 3SG want hear mate/RECP story NEG  
 ‘He doesn’t want to hear each other’s stories.’

### ONE-ANOTHER

This conceptual strategy, relating to the “quantificational strategy” of König and Vezzosi (2004) or the “bipartite-quantifier” structure of Evans (this volume), is more complex, consisting of two contrasting participants combined in one, and taking forms such as ‘the one the other’, ‘one opposed to the other’, ‘one against the other’, ‘one another’, sometimes reduced to ‘another’ or ‘one, one’. English *each other* and *one another*, German *ein-ander* (lit.: ‘one-another’), Spanish *uno al otro*, Italian *l’un l’altro*, Surselvia *in l’auter (ina l’altra [FEM])*, Russian *drug druga* and Amharic *əñña bääñña* ‘we among us, we against we’ (Goldenberg 1991: 537) are examples of this strategy.

For a scenario of grammaticalization of certain instances of the ONE-ANOTHER strategy in western European languages, see König and Vezzosi (2002: 215–216; Plank this volume). The same strategy has also been employed in many other languages, e.g. in Georgian (Hewitt 1995: 85, 564), which has the following two reciprocal pronouns: *ert+man+ert-i* (‘one+ERG+one-NOM’) and *ert+i+me+or+e* (‘one+NOM+the.second’), or in Kenzi Nubian (Hofmann 1983: 95), where reciprocity is “circumscribed” by *weer weer.na, weer week.ki* ‘the one the other’.

Evidence for this strategy also comes once more from pidgins and creoles, where words for ‘the other’ have given rise to reciprocal markers, e.g. in the Portuguese-based creoles Angolar *ô tô* ‘other’ and Papiamentu *otro* ‘each other’ (Kouwenberg and Murray 1994: 40). Likewise, in the English-based Ndyuka creole, reciprocity ‘is also expressed by the use of *taa wan* ‘other one, others’ as the reciprocal element or, more commonly as both antecedent and reciprocal’ (Huttar and Huttar 1994: 283). The strategy is also used in Nigerian Pidgin English, at least in acrolectal speech, possibly a borrowing from Standard English: There are two forms, *ich ɔda* and *won ànoda* (‘each other’; Faraclas 1996: 106).

Instead of quantifiers, demonstratives may be employed for contrasting participants, as e.g. in Hebrew (Glinert 1989: 68–69), which uses the neutral demonstrative (*ze* [MASC], *zo* [FEM], *éle* [PL]):

(21) Hebrew (Glinert 1989: 68)

*raínu ze et ze*  
we.saw this OM this  
‘We saw one another.’

Contrasting two (or more) participants with one another can also be expressed by means of expressions highlighting the relationship between participants rather than the participants themselves, where this relationship is presented as involving two opposite sides of a spatial situation. The German reciprocal marker *gegen-seit-ig* (‘opposite side, mutually’, lit. ‘against-side-ADJ’) is an example of this, and the Latin reciprocal *inter sē* (‘between/among themselves’) is possibly another one (Kemmer 1993: 103; cf. also Gast and Haas this volume). A perhaps equally obvious instance of this strategy might be seen in the grammaticalization of Gola *fémãã* ‘space in between’ to a reciprocal marker, cf. (22), and in the Korean reciprocal marker *phicha*, which has the literal meaning ‘each other, both sides, you and I’ (Sohn 1994: 293).

(22) Gola (Atlantic, Niger-Congo; Westermann 1921: 51)

*se bulia fémãã*  
we beat space.in.between  
‘We beat each other.’

Concerning the evolution of the ONE-ANOTHER strategy from a combination of two separate quantors (‘one’ and ‘another’) to reciprocal marker, see Plank (this volume) and König and Vezzosi (2002: 215–216).

**TOGETHER**

Another source of reciprocals can be seen in expressions denoting actions carried out collectively ('together [with]'). In combination with specific verbs, such expressions may assume a reciprocal function, and in some languages they have given rise to reciprocal morphologies. For example, Frajzyngier remarks on the adverb *šak* (or *siak*) 'together' of the Chadic language Mupun: "When this adverb occurs with a plural subject and a verb that allows a reciprocal event, the meaning is reciprocal" (Frajzyngier 2000: 190; 1993: 278ff.). Example (23a) illustrates the use of the adverb and (23b) the reciprocal use.

(23) Mupun (Chadic, Afroasiatic; Frajzyngier 1993: 278–279)

- a. *wur a siak kə mat fin*  
 3M COP together PREP wife 3M  
 'He<sub>i</sub> is together with his<sub>i</sub> wife.'
- b. *mo tu siak*  
 3PL kill RECP  
 'They killed each other.'

Imbabura Quechua has a REF-REC category, but in addition the reciprocal situation can be expressed with a suffix having collective meaning ('jointly, together'; cf. Maslova and Nedjalkov 2005), and in Japanese, the phrase *tomo-ni* (comrade-with) 'together' may trigger a reciprocal interpretation in specific contexts.

Both the evidence for, and the exact nature of, this strategy of grammaticalization are still unclear; it appears to involve a conceptual mechanism whereby grammatical markers denoting actions carried out jointly invite an inference to the effect that in combination with verbs implying mutual actions such as 'marry', 'agree', 'meet', etc. they are reinterpreted as reciprocal markers.

**REPETITION**

As we observed in Section 1, reciprocals are conceptually more complex than reflexives insofar as they can be, and have been, understood to combine expressions for two simple situations. This hypothesis is supported by the observation that there are languages whose canonical expression for reciprocity consists of a propositional conjunction of the kind 'A acts on B, B acts on A'; see Maslova and Nedjalkov (2005, cf. [4] above) for an example from the Trans-New Guinean language Amele.

Presumably related to this observation is the fact that one of the most common strategies to mark reciprocity is to use a repetitive expression of some kind, frequently in combination with some other strategy. Perhaps most commonly

it is the verb that is reduplicated, and Maslova and Nedjalkov (2005) refer to a reciprocal situation encoded by the repetition of the main verb (or the clause) as the “iconic type”, “since the complex structure of the reciprocal situation is straightforwardly reflected in the structure of grammatical reconstruction”, and they use iconicity as their main typological parameter (see below). Verb reduplication may be the only means of encoding reciprocity; as in the West African Kru language Godié of the Niger-Congo family: *wa wà-wà* (‘they love-love’) ‘They love each other’. Perhaps more commonly, there is some additional strategy used for expressing reciprocal situations. For example, in the West Atlantic Gola language of Niger-Congo, reduplication is used as a reinforcing device for reciprocals:

(24) Gola (Atlantic, Niger-Congo; Westermann 1921: 51)

*a kpɔma kpɔma fémáãã*  
 they help help space.in.between  
 ‘They helped each other.’

In the Ethio-Semitic language Amharic, both reflexives and reciprocals use the verbal prefix *tä-*, but reciprocals are distinguished by partial reduplication of the verb stem (at least with most verbs):

(25) Amharic (Semitic, Afroasiatic; cf. Leslau 1995: 468–470)

a.	<i>gäddal-u</i> kill-3PL.SBJ ‘They killed (someone).’	b.	<i>tä-gädaddäl-u</i> RECP-kill.RDP-3PL.SBJ ‘They killed each other.’
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In the Muna language of Sulawesi, Indonesia, there is a reciprocal prefix *po-* usually having dual reference (e.g. *do-po-intara* [‘they-REC-hold’] ‘the two hold each other’), but plural reference when the verb is reduplicated (*do-po-tumbu-tumbu* [‘they-REC-hit-hit’] ‘they hit each other’; cf. van den Berg 1989: 309–310). A similar structure is found in the Austronesian language Paiwan of Taiwan, which uses a prefix *ma<sup>R</sup>a-* (or *pa<sup>R</sup>a-*) plus partial reduplication to form reciprocal verbs (cf. Egli 1990: 102–104). Note also that in the Athapaskan language Slave (or Dene; see Rice 1989: 272) the verb is often plural when the object of the verb is acted on in some reciprocal manner.

The following is an example from a pidgin/creole: In the English-based Bislama pidgin, the pronoun strategy (see Table 2) is used but, in addition, the verb is reduplicated to form a reciprocal (26); no reduplication appears to be used when reflexivity is involved.

- (26) Bislama (English-based pidgin; Crowley 1990: 311)

*bislama nao i mekem se yumi savsave yumi*  
 Bislama FOC PTC make that we know.RDP we

‘It is Bislama that makes us know each other.’

That there is a conceptual source of repetition underlying this strategy is suggested e.g. by the fact that in Mandarin there is a reciprocal construction which is derived from a structure *V-lai-V-qu*. The literal meaning of this construction is ‘V-come-V-go’, but its actual meaning is ‘to do something repeatedly’. (27) illustrates its grammaticalized use as a reciprocal marker.

- (27) Mandarin (Liu 2000: 124)

*tamen da lai da qu*  
 they hit come hit go

‘They hit each other.’

Instead of the verb it may be the complement pronoun, or both the subject and the complement pronoun, that are reduplicated. In the West African Niger-Congo language Twi, the reflexive marker *hɔ̃* (< ‘body’) “is reduplicated to form the reciprocal construction” (Kemmer 1993: 103). In Siroi of Papua New Guinea (Wells 1979: 38), the reciprocal marker consists of the reduplicated possessive pronoun, e.g. *sikile sikile* (our.DU our.DU) ‘we (dual) to each other.’

The following is an example of pronoun reduplication from a pidgin/creole:

- (28) Nigerian Pidgin (English-based pidgin; Faraclas 1996: 106)

*wi(-wi) ko=m wund wi-wi*  
 we(-we) come hurt we-we

‘We hurt one another/each other.’

A strategy resembling pronoun reduplication can be found in some sign languages. For example, in the German sign language (DGS), *WE-BOTH TRUST<sub>1</sub>PAM<sub>2</sub>PAM<sub>1</sub>* ‘We trust each other’, reciprocity is expressed by reduplication of the Person Agreement Marker (PAM), where the two subscripts refer to different points in the signing space (R. Pfau, p.c.).<sup>13</sup>

13. Presentation on “Disentangling modality-independent and modality-specific aspects of grammaticalization in sign languages.” Paper presented at the seminar “Restricted Linguistic Systems as Windows on Language Genesis”, Netherlands Institute for Advanced Study (NIAS), Wassenaar, November 1–2, 2004.

Furthermore, both the verb and the pronoun may be reduplicated. In Yagaria of Papua New Guinea, verbal (cf. [29a]) and pronominal reduplication (cf. [29b]) are used, even if the language does not seem to have any productive reciprocal marker:

- (29) Yagaria (Papuan, East Central Highlands; Renck 1975: 147–8)
- a. *i'ami a'ami hu-* 'to give each other, to exchange'  
*i'nuki a'nuki hu-* 'to embrace each other'
  - b. *lapagae-tipi lapagae-tipi game' a-si-io*  
2PL-yourselves 2PL-yourselves fight NEG-do-IMP.PL  
'Do (PL) not fight against each other!'

Finally, REPETITION may concern the reflexive marker, insofar as the reciprocal is a reduplicated form of the reflexive. For example, in the Uto-Aztecan language Comanche of Oklahoma (Robinson and Armagost 1990: 272–273), the verbal prefix *na-* serves as a reflexive and passive marker, while the verbal reciprocal prefix *nanah-* appears to be a reduplicated form of the reflexive marker.

Another manifestation of the REPETITION strategy can be seen in the use of iterative or frequentative morphologies for reciprocals. In the West Nilotic language Anywa, reciprocal readings of the reflexive pronoun *rê-* require the verb to be in the frequentative form (Reh 1993: 167). Degema, an Edoid language of Niger-Congo spoken in south-eastern Nigeria (Kari 2004: 144–151), has two reflexive forms: *-ene* and *-veñine* (both sensitive to vowel harmony). The former is used for singular actions and the latter for plural actions, irrespective of whether singular or plural subject referents are involved. But *-veñine* is also the reciprocal marker of Degema, and when there is a plural subject, there is often ambiguity between a reflexive and a reciprocal interpretation. In West Greenlandic (Fortescue 1984: 166), an iterative suffix can be used to reinforce a clearly reciprocal sense, or to distinguish it from the reflexive one.

As these observations suggest, REPETITION appears to be conceptually similar to the ONE-ANOTHER strategy (see above), and some of the examples presented can be interpreted with reference to both strategies.

## REFLEXIVE

Finally, one of the most salient strategies to form reciprocals can be seen in the extension of reflexives to also mark reciprocals. Such reciprocals differ from other reciprocals in that they are ambiguous between a reflexive and a reciprocal reading in many contexts. The use of this strategy entails that all sources that were identified in Table 2 as conceptual templates for reflexives can ultimately

also be sources of reciprocals. The following are examples of the three main reflexive strategies.

(30) is taken from German, where the reflexive based on the pronoun strategy in the first and the second (though not in the third) person also marks reciprocals. (31) is an example of the intensifier strategy in Mauritian Creole, where the plural personal pronoun in combination with the intensifier *-mem* forms both a reflexive and a reciprocal, and in (32) it is the grammaticalized noun *rū* ‘body’ of Ma’di that serves both as a reflexive and a reciprocal marker.

- (30) German (= [4])

*Wir hassen uns.*

we hate us

(a) ‘We hate ourselves.’ (b) ‘We hate each other.’

- (31) Mauritian Creole (French-based creole; Corne 1988b: 77)

*zot koz ar zot-mem*

they talk to they-self

(a) ‘They talk to themselves.’ (b) ‘They talk to each other.’

- (32) Ma’di (Central Sudanic, Nilo-Saharan; Blackings and Fabb 2003: 93, 118–119)

*ká kî rù dzè*

3 PL RR wash.NPST

(a) ‘They are washing themselves.’ (b) ‘They are washing each other.’

### Other possible sources for reciprocals

Even though the conceptual sources listed above account for most of the reciprocals for which some information is available, there are also some less common additional sources. One of these sources concerns concepts expressed by verbs. For example, Ebert (1994: 54) reports that in the Kiranti language Bantawa reciprocity is expressed by the inflected verb *mí* ‘do’ with the main verb taking the form of an active participle. Furthermore, in Mandarin the combination of verbs for ‘come’ (*lai*) and ‘go’ (*qu*) in serial verb constructions may be employed for the expression of reciprocity (Liu 2000), a construction that we discussed above under REPETITION. But perhaps more commonly, there are verbs denoting some intrinsically reciprocal action that may grammaticalize and acquire the status of reciprocal markers, possible examples being Japanese *au* ‘to meet’ or the verb *banj(i)* or *wanj(i)* ‘to exchange’ in Nyulnyulan languages of Australia (cf. König and Vezzosi 2002: 218; McGregor 2000). Finally, there are markers

such as adverbs or derivational affixes whose meanings include that of denoting reciprocal actions. For example, in West Greenlandic (Fortescue 1984: 166), instead of the canonical reflexive-reciprocal pronoun *immi-*, derivational affixes expressing reciprocal actions may be used, e.g. *qatigiig* ‘do mutually’ or *niqqisaat(i)* ‘compete at -ing’.

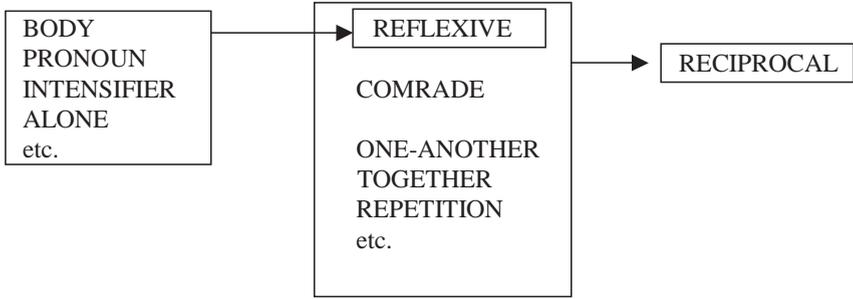
### 1.3. Conclusions

The various strategies of reciprocals discussed above are not mutually exclusive. First, several strategies can be at work in one and the same language; for example, German has recruited both the REFLEXIVE (e.g., *sich*) and the ONE-ANOTHER strategies (*einander*, *untereinander*, *gegenseitig*, *wechselseitig* ‘each other’) for the expression of reciprocals. And second, one and the same construction may be based on more than one strategy; for example, as we saw in the Gola example (24), the ONE-ANOTHER strategy and REPETITION may be used jointly.

A problem associated with the present treatment is that for the majority of languages there is no diachronic information on the development of reflexive and reciprocal markers. What Lichtenberk observes with reference to reciprocal and related markers in Oceanic languages applies in a similar fashion to many other languages: “Since the present-day PR [plurality of relations; B.H.] constructions are typically polysemous, and since some such polysemies are not uncommon elsewhere, it is difficult to tell – in the absence of direct historical evidence – how the Oceanic polysemies arose diachronically” (Lichtenberk 2000: 55).

Still, there is some evidence supporting the hypotheses proposed above (see also Section 2). For example, there is evidence to show that nouns meaning ‘body’ or intensifiers such as English *-self* or Mauritian creole *-mem* have been grammaticalized to reflexive markers, while we are not aware of any language where a reflexive marker developed into a noun or an intensifier. On the basis of the strategies sketched in the preceding sections, the evolution of reflexives and reciprocals can be summarized as in Figure 1. What this figure shows is that there are five main sources for reciprocal forms, namely REFLEXIVE, COMRADE, ONE-ANOTHER, TOGETHER, and REPETITION. However, since reflexives can themselves be traced back to at least three main conceptual sources, reciprocals may eventually derive as well from the BODY, the PRONOUN, and the INTENSIFIER strategies. One of the pathways summarized in Figure 1, namely BODY > REFLEXIVE > RECIPROCAL, has been pointed out by König and Siemund (2000: 59).

We mentioned in Section 1.2 that Maslova and Nedjalkov (2005) propose the term “iconic type” to refer to reciprocal situations encoded by the repetition of the main verb (or of the clause). In doing so, they restrict the use of the



*Figure 1.* A conflated grammaticalization chain of reflexives and reciprocals.

term to one sub-group of constructions that we discussed in Section 1.2 as having REPETITION as their source of grammaticalization. It would seem that their term “iconic coding” could be used in a more extended way, referring to all sources of grammaticalization implying two separate participants, since reciprocity also presupposes joint actions of two (or more) participants. In this way, all sources – with the exception of REFLEXIVE – could be interpreted as being “iconic” in nature. This diachronic distinction is reflected in the synchronic structure of reciprocals: It is only reciprocals having REFLEXIVE as their source that participate in REF-REC categories; in other words, reciprocal markers that are not part of RER-REC categories are unlikely to be historically derived from reflexive markers.

## 2. REF-REC categories

The generalizations proposed in Section 1 were intended to prepare the reader for the main concern of this paper, which is with REF-REC categories, that is, with constructions whose meanings include those of a reflexive and a reciprocal, even if there may be other meanings in addition expressed by these categories (see below).

### 2.1. Properties

The structure of these categories can be characterized by the following properties:

- (a) With singular antecedent referents, the category expresses reflexivity only.
- (b) With multiple antecedents (i.e. plural or conjoined subject referents), the category is likely to be ambiguous, expressing both reflexivity and reciprocity.

- (c) With multiple antecedents of certain verbs (i.e. “inherently reciprocal” verbs) or in specific contexts, the category expresses reciprocity only.
- (d) In view of their overlapping structure (cf. [b]), there is no categorial boundary setting reflexive and reciprocal readings apart.
- (e) Accordingly, essentially the same syntactic construction is employed for both reflexive and reciprocal functions (but see Section 2.3).
- (f) There are no restrictions on the morpho-phonological or morpho-syntactic form that the functional marker characterizing the category may take.
- (g) Compared to reciprocals which are not part of REF-REC categories, the reciprocal use does not exhibit any high-degree functional variation.
- (h) In the relevant literature, the reflexive meaning tends to be portrayed as the basic one, or as being more basic than the reciprocal one.

There is a large range of variation across languages with regard to how these properties are manifested in a given language. We will now look at some of these properties.

(a) While singular antecedents are almost invariably associated with reflexivity, there may nevertheless be singular antecedents that trigger a reciprocal reading, e.g., when collectives treated morphologically as singular nouns are involved (see example [11]).

(d). Some languages may have morphosyntactic parameters for distinguishing reflexive and reciprocal readings; in the West Nilotic language Anywa, reciprocal readings of the reflexive pronoun *ré-* require the verb to be in the frequentative form (Reh 1993: 167), and in Amharic both reflexives and reciprocals use the verbal prefix *tä-*, but reciprocals are in most cases distinguished by partial reduplication of the verb stem.

(e) In most grammatical descriptions, the various uses of REF-REC categories are portrayed as being structurally indistinguishable. Accordingly, in the Mayan language Tzutujil of Guatemala (Dayley 1985: 336), both reflexive and reciprocal uses occur only with active transitive verbs, and both are expressed by the relational noun *-ii?* (*rii?iil* in the absolute form) ‘self, each other’. Still, there are occasional differences. Faraclas (1996: 107) observes that the same possibilities exist for reciprocal and reflexive relations in Nigerian Pidgin, except that reciprocal pronominals may not fill the object slot of copular verbs. In more general terms: Reciprocal uses tend to be associated with a more restricted set of syntactic and pragmatic options than reflexive ones; we will return to this issue in Section 2.3.

(f) REF-REC markers may be free forms, clitics, or affixes. For example, the reflexive-reciprocal marker *-ii?* of Tzutujil is a relational noun which follows the transitive verb in the normal patient position and is inflected with a possessive

ergative prefix coreferential with the ergative prefix on the verb (cf. Dayley 1985: 336). Similarly, in the Arauan language Paumarí of western Amazonia (Chapman and Derbyshire 1991: 177), the reflexive/reciprocal marker *abonoi* ‘self’ is an inalienably possessed noun agreeing with the subject in person and number. In other languages it behaves like a clitic or particle, or a noun-like pronoun (e.g., the item <sup>h</sup>*úol* in the East Cushitic language Dhaasanac; cf. Tosco 2001: 224). In yet other languages it has the status of a (verbal) affix, be it a prefix, like *tä-* in the Ethio-Semitic language Amharic, or a suffix, like *-ma* in the Australian Pama-Nyungan language Yanhangu (Waters 1989: 89). Accordingly, it would seem that the presence of REF-REC categories is fairly independent of the morphological means used for their expression.

(g) REF-REC categories tend to include occasional uses such as collective (e.g. with verbs such as ‘to gather’), distributive (‘to separate’), or chaining situations (‘to follow’), but we are not aware of any pronounced degree of polysemy as it can be found with reciprocals which are not part of REF-REC categories (see Lichtenberk 2000 for a range of meanings commonly associated with such reciprocals).

(h) That the reflexive reading is considered to be more basic is suggested, e.g., by the fact that REF-REC categories are not seldom described as “reflexives”; for example, Geniušienė (1987: 255) refers to them as “reciprocal reflexives”. Accordingly, reciprocals tend to be presented as special uses of reflexives, and in interlinear glosses “reflexive” is likely to be used for both (see e.g. Craig 1977: 110 for Jacalteco, Reh 1993: 166–8 for Anywa, *Duden Grammatik* 1998: 332–5 for German, or van Driem 1987: 86 for the Sino-Tibetan language Limbu). Note, however, that there is at least one exception: Waters (1989: 149) proposes the term reciprocal for the REF-REC category in the Pama-Nyungan language Djinang (see Section 2.3).

## 2.2. A survey

According to König and Vezzosi (2002: 215), REF-REC categories are widespread in Europe, though not in languages of Europe’s periphery, where intensifiers and reflexive anaphors take the same form (e.g. English *oneself*). Such peripheral languages include English, Finno-Ugric, Celtic, and Turkic languages. Furthermore, the majority of Australian Aboriginal languages have a REC-REC category (cf. Dixon 1980: 433; McGregor 2000: 89). The following examples illustrate the genetic diversity and worldwide distribution of the category.

In the Gur language Supyire, the marker *-ye* is suffixed to the respective personal pronoun. Example (33a) illustrates the reflexive-only reading, (33b) has a plural referent with a reflexive meaning and (33c) one with a reciprocal meaning.

- (33) Supyire (Gur, Niger-Congo; Carlson 1994: 416–7)
- a. *u a ù-yé bání*  
 he PRF he-REFL wound  
 ‘He has wounded himself.’
  - b. *kà pi í pí-yè kéénjè fyì*  
 and they NARR they-REFL change pythons  
 ‘Then they turned themselves into pythons.’
  - c. *pi a pì-yé kánù*  
 they PRF they-REFL love  
 ‘They loved each other.’

The Kenyan language Luo employs a verbal suffix that is sensitive to personal deixis: The suffix is *-râ* 1.SG, *-rî* 2.SG, *-rû* 2.PL, and *-rê* otherwise<sup>14</sup> (cf. Tucker 1994: 158ff.): “In the Singular the action of the Verb is Reflexive, but in the Plural it may be interpreted as Reflexive or Reciprocal according to the context” (Tucker 1994: 158).

- (34) Luo (West Nilotic, Nilo-Saharan; Tucker 1994: 159)
- a. *a-lwóko-râ*  
 1SG-wash.PRF-REFL.1SG  
 ‘I have washed myself.’
  - b. *wá-lwóko-rê*  
 1PL-wash.PRF-REFL/RECP.1PL  
 (i) ‘We have washed ourselves.’  
 (ii) ‘We have washed each other.’

A similar situation is found in the closely related language Lango, where the “middle” suffix *-rê*, like the Luo marker being historically derived from a noun meaning ‘body’ (Noonan 1992: 277), is said to be primarily a reflexive marker but to also have a reciprocal reading. Accordingly, (35) is ambiguous, and the intensifier *kén-* is added to reinforce the reflexive reading.

- (35) Lango (West Nilotic, Nilo-Saharan; Noonan 1992: 133)
- gín ògóyê*  
 they 3.PL.beat.MID.PRF  
 (a) ‘They beat themselves.’  
 (b) ‘They are beating each other.’

---

14. The suffix *-rê* is sensitive to vowel harmony.

In the fellow Nilotic language Maa (Maasai), the verbal suffix *-a/o* covers a range of functions, including reflexive (cf. [36a]) and reciprocal functions (cf. [36b]). The suffix is referred to variously as the “neuter-passive”, “quasi-passive”, “reflexive” or “reciprocal” verb (Tucker and Mpaayei 1955: 135).

(36) Maasai (Tucker and Mpaayei 1955: 134–6)

- a. *á-ísuj-a*  
1SG-wash-REFL  
‘I am washed, I wash myself.’
- b. *e-isuj-a* (*nmce*)  
3-wash-REFL 3PL  
(i) ‘They wash themselves.’  
(ii) ‘They wash each other.’

The following is an example from the Americas: In the Mayan language Jacalteco, the marker *-ba*, preceded by an element of personal deixis coreferential with some antecedent, is used for both reflexive and reciprocal functions (cf. [37]); both are glossed “reflexive” by Craig (1977).

(37) Jacalteco (Mayan; Craig 1977: 110, 272)

- a. *x-w-il hin-ba*  
ASP-ERG.1-see ERG.1-REFL  
‘I saw myself.’
- b. *tzalalal cu-yamba-n cu-ba*  
happy ERG.1PL-gather-SUF ERG.1PL-REFL  
‘It is *fun* to get together.’<sup>15</sup>

In the Pama-Nyungan language Djinang of Australia, the REF-REC category includes what Waters (1989: 150–151) calls the “mutualis” function (cf. [38c]), which is suggestive of a distributive function.

(38) Djinang (Pama-Nyungan; Waters 1989: 150–152)

- a. *nyani-bi-nydji wangi-ni*  
3SG.NOM-ORG-RECP speak-TPST  
‘He spoke to himself.’

---

15. Italics here indicate focus.

- b. *ingk-inydji bil nya-nyiri, inydji bil*  
 NEG-RECP 3DU.ERG see-RPI RECP 3DU.ERG  
*nya-ngin* [...] [*...*]  
 see-RPA  
 ‘They didn’t see each other, they really didn’t see each other [...].’
- c. *ngil ingk-inydji bultji-gi*  
 1DU.INCL NEG-RECP tell-FUT  
 ‘We will each not tell (him).’

The following is an example of a REF-REC category from a Sino-Tibetan language:

(39) Limbu (Kiranti, Sino-Tibetan; Ebert 1994: 52)

- a. *warum-siŋ-aŋ*  
 wash-REFL/RECP-1SG.PST  
 ‘I washed myself.’
- b. *warum-ne-tchi*  
 wash-REFL/RECP-DU  
 (i) ‘They (DU) washed themselves.’  
 (ii) ‘They (DU) washed each other.’
- c. *mε-bi:-siŋ-ε*  
 3PL.A-give-REFL/RECP-PST  
 ‘They (PL) gave to each other.’

Finally, we present an instance of a REF-REC category from Papua New Guinea. The Imonda pronominal suffix *-f*, called the “emphatic” and used on personal pronouns (Seiler 1985: 43–45), serves as a reflexive (cf. [40a]) and a reciprocal marker (cf. [40b]), and in addition to that has the function of an intensifier (cf. [40c]):

(40) Imonda (Seiler 1985: 45)

- a. *ehe-f-m lapi-fan*  
 3-EMPH-G shoot-PRF  
 ‘He has shot himself.’
- b. *ehe-f-m e-kse-ual-puhō e-f-fn-b*  
 3-EMPH-G DU-fuck-DU-HAB DU-do-PROG-DUR  
 ‘They were fucking each other all the time.’

- c. *be-f*      *ne-u*  
 2-EMPH eat-IMP  
 ‘You eat it yourself!’

### 2.3. On directionality

The data presented in the preceding section suggest that underlying the presence of REF-REC categories there is some general principle, and we argue that this principle is grammaticalization. More specifically, we argue that these categories are the result of a unidirectional process of grammaticalization involving the following stages of evolution (cf. Heine 2003; see also Section 2.7 below):

- (41) Stages in the transition from reflexive to reciprocal markers
- I There is a grammatical marker (and an associated construction) having a reflexive meaning when used with singular antecedent referents.
  - II When used with multiple antecedents, the marker may receive a reciprocal meaning in addition – the result being ambiguity.
  - III When used with multiple antecedents in specific contexts (e.g., with symmetric predicates), reciprocal is the only meaning.

Presumably, most languages with a REF-REC category have a number of verbs exclusively associated with a Stage-III, reciprocal-only, reading. Verbs used in Stage-III contexts tend to be referred to by labels such as inherently reciprocal verbs, symmetric predicates, etc., typically including items such as ‘chat’, ‘follow’, ‘greet’, ‘kiss’, ‘marry’, ‘meet’, ‘shake hands’, etc.

In the remainder of this section we provide evidence to support our hypothesis that REF-REC categories are the result of a unidirectional process from reflexive to reciprocal marking (but see Moyse-Faurie this volume, who claims that the opposite process has taken place in some Oceanic languages).

**Diachrony.** Evidence to support this hypothesis is on the one hand diachronic: Wherever there is historical information it turns out that in the development of REF-REC categories there was a Stage-I situation, where the marker served as a reflexive before it acquired Stage-II uses. The Proto-Indo-European (PIE) marker *\*s(w)e* appears to have been a reflexive marker, while in many daughter languages of PIE the marker also has reciprocal uses. In Latin, *sē* was a reflexive marker; thus, *se amant* could only mean ‘they love themselves’ (Nigel Vincent, p.c.; cf. also Gast and Haas this volume). Reciprocity could be expressed either by ONE-ANOTHER forms such *alter alterum* or *uterque utrumque* or by *inter*

*sē* ('among REFL'), while naturally reciprocal events were expressed by *-r* (the passive suffix of Classical Latin, a former middle marker). Reciprocal uses of *sē* are sporadically attested in some authors during the classical age (e.g. Caesar, Sallustius, Virgil), though apparently mainly with the intensifier *ipse* 'himself'.<sup>16</sup> It was not until the second century AD that the reflexive marker *sē* became widely used also as a reciprocal marker<sup>17</sup> (Nigel Vincent, p.c.; Michela Cennamo, p.c.).

The reciprocal use of the German reflexive pronoun *sich* developed from verbs such as (*sich*) *einigen*, *gesellen*, *treffen* ('agree', 'associate', 'meet'), where the pronoun refers to different persons. At the stage of Middle High German, the REF-REC category was already well established (Behaghel 1923: 167, 306; Lockwood 1968: 69; König and Vezzosi 2002: 215; Gast and Haas this volume). Accordingly, Geniušienė (1987: 347) posits a historical pathway of development where reflexivity is temporarily prior to reciprocity. Conversely, we are not aware of any evidence suggesting that reciprocal markers have developed into reflexive ones (but see Moyse-Faurie this volume).

**Polysemy.** Another kind of evidence concerns the conflated grammaticalization chain that we proposed in Figure 1. According to this chain, there are four main sources for reciprocals, which in addition to reflexives are the concepts COMRADE, ONE-ANOTHER, and REPETITION. In line with this chain, we find polysemy patterns combining reflexive and reciprocal meanings, as well as the meanings from which reflexives are derived. But in our database there is no single language which exhibits a polysemy pattern combining reflexivity and any of the other sources of reciprocals, that is, COMRADE, ONE-ANOTHER, REPETITION, or TOGETHER. Thus, there are many examples where reflexivity is part of a polysemy pattern that also includes the meaning 'body', or that of an intensifier or of plain personal pronouns (see Section 2.5), but we have found no example where reflexivity is part of a polysemy pattern that includes meanings such as 'comrade' or 'one another', or one that involves reduplication. Such observations suggest that, while reflexives frequently give rise to reciprocals, there is no development in the opposite direction.

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16. As in the following example from Caesar: *Cum angusto exitu portarum se ipsi premerunt* 'As they crowded one another at the narrow passage of the gates' (Caesar, B.G. 7, 28, 3; Michela Cennamo, p.c.).

17. A paradigm example is the following: *ut se ament efflictim* 'so that they love each other passionately' (Apuleius, *met.* 1,8; Michela Cennamo, p.c.).

**Decategorialization.** A third piece of evidence concerns the nature of grammaticalization. New grammatical use patterns<sup>18</sup> and categories arise in specific contexts, and they are in some way decategorized vis-à-vis the old use pattern. Accordingly, they tend to be restricted to these contexts, even if – at a more advanced stage – their use can be extended to new contexts. With respect to REF-REC categories this means that the less grammaticalized reflexive use patterns occur in a wider range of contexts, while the more grammaticalized reciprocal use patterns are in some way or other restricted to contexts associated with their rise as new grammatical meanings. Crosslinguistic evidence on the evolution of REF-REC categories suggests that the extension from reflexive to reciprocal meanings is constrained significantly by the category of number: The new meaning arises in contexts where the antecedent is a plural referent; most grammatical descriptions of REF-REC categories point out that a reciprocal meaning arises only when there is a plural or conjoined subject referent. Another constraint concerns transitivity: Reciprocal meanings tend to arise in contexts where transitive verbs are used. As this evidence suggests, instances of the category involving intransitive verbs are significantly more likely to trigger a reflexive than a reciprocal meaning.

Accordingly, the German REF-REC *sich*-category is rather widely used reflexively but much less so reciprocally, as the following facts show. First, the category freely allows for coordination of the complement in its reflexive (cf. [45a]), but not really in its reciprocal uses (cf. [45b]) (see Kunze 1997: 91, Gast and Haas this volume).

(42) German

- a. *Karl hasst sich und die ganze Welt.*  
 Karl hates REFL/RECP and the whole world  
 ‘Karl hates himself and the whole world.’
- b. ?*Karl und Anna hassen sich gegenseitig und ihre Verwandten.*  
 Karl and Anna hate REFL/RECP mutually and their  
 relatives  
 ‘Karl and Anna hate each other and their relatives.’

Second, compared to its reflexive uses, the German category allows only for a smaller set of pragmatically defined functions in its reciprocal uses. Thus, when topicalized, the marker *sich* can only have a reflexive meaning:

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18. Concerning the term “use pattern”, see Heine and Kuteva (2005).

(43) German (Gast and Haas this volume: 318)

*Sich* *konnten die Spieler nicht leiden, aber sie*  
 REFL/RECP.EMPH could the players not bear but they  
*mochten den Trainer.*

liked the coach

(a) 'The players couldn't stand themselves, but they liked the coach.'

(b) ?'The players couldn't stand each other, but they liked the coach.'

Third, the grammaticalization from reflexive to reciprocal concerns antecedents that are not subject referents: The German REF-REC category may take non-subject antecedents in its reflexive uses, but König and Vezzosi (2002: 214) observe that this is not possible in the case of its reciprocal uses; rather, the reciprocal-only marker *einander* 'one another' has to be used instead.<sup>19</sup>

And fourth, when used with intransitive verbs where the complement is presented as a prepositional phrase (called *Präpositionalobjekt* in the tradition of grammarians of German), the category is, with a few exceptions, restricted to the reflexive meaning. Accordingly, in (44), where the complement is introduced by the preposition *über* 'over, about', there is a reflexive (cf. [44a]) but no reciprocal interpretation (cf. [44b]):

(44) German (König and Vezzosi 2002: 211)

*Die Spieler reden nicht mehr über sich.*

the players talk not more about REFL/RECP

a. 'The players no longer talk about themselves.'

b. \*'The players no longer talk about each other.'

To summarize, compared to its reflexive uses, the reciprocal uses of the German REF-REC category exhibit a number of decategorializations, being restricted to a smaller set of syntactic and pragmatic contexts.

**Erosion.** Another mechanism of grammaticalization concerns erosion, whereby forms undergoing grammaticalization tend to lose phonetic substance and/or complexity. Erosion may concern segmental phonological structures but it may as well concern suprasegmental properties, such as distinctions of tone or stress.

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19. Note, however, that the REF-REC category can be used in German with infinitival complements, e.g.,

*Er erlaubte ihnen, sich zu küssen.*

he allowed to.them REFL/RECP to kiss

'He allowed them to kiss.'

For example, the German REF-REC category allows the marker *sich* to be stressed in its reflexive but not in its reciprocal uses, that is, the latter have lost the ability to distinguish stress:<sup>20</sup>

(45) German (Gast and Haas this volume: 320)

*Die Spieler lobten sich.*

the players praised REFL/RECP.EMPH

(a) ‘The players praised themselves.’

(b) \*‘The players praised each other.’

**Markedness.** A fifth piece of evidence comes from morphology and concerns markedness. While frequently exhibiting less phonetic substance as a result of erosion, reciprocal markers may be morphologically more complex than the corresponding reflexive ones: Wherever reflexive and reciprocal are expressed by the same form but differ in the degree of morphological marking used for their expression, it is reflexive that is likely to be the unmarked one – that is, it tends to be morphologically (and/or phonetically) less complex.<sup>21</sup> A few examples may illustrate this. In Latin, *sē* was a reflexive marker while prototypical reciprocals were expressed by *inter sē* (‘among -self’). In Huallaga Quechua (Weber 1989: 167–170), the verbal reflexive suffix *-ku* is less marked than the reciprocal suffix *-naku*. In Amharic, both reflexives and reciprocals use the verbal prefix *tä-*, but reciprocals in most cases require partial reduplication of the verb stem in addition:

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20. Note that we are concerned here exclusively with REF-REC categories. For obvious reasons, the situation is different in cases where reciprocal markers are derived from other channels of grammaticalization. For example, when that channel is REPETITION (Section 1.2; see also under “markedness” below), the outcome is the opposite of what we observe here: When a reciprocal marker is derived from a reflexive by means of morphological reduplication, it goes without saying that it contains more phonetic substance than the reflexive marker.

21. There are a few exceptions, though. For example, in the Nyulnyulan languages of Western Australia, there is both a prefix *ma-* and a suffix *-nyji* used for the REF-REC category. In the Nyulnyulan language Yawuru, the presence of a prefix and a suffix on inflecting verbs allows for both reflexive and reciprocal interpretations, but the absence of a prefix allows only for reciprocal interpretations (McGregor 2000: 92–93).

- (45) Amharic (Semitic, Afroasiatic; cf. Leslau 1995: 463)
- a. *t-aṭṭäb-ä*  
RR-wash-3SG.M.PRF  
'He washed (himself).' (also 'He was washed.')
  - b. *tä-gädaddäl-u*  
RR-kill.RDP-3PL.SBJ  
'They killed each other.' (= [25b])

In the Arauan language Paumarí of western Amazonia (Chapman and Derbyshire 1991: 179), both the reflexive and the reciprocal use the inalienably possessed noun *abonoi* 'self', but the reciprocal use requires the discontinuous verbal affix sequence *ka...-khama*, having a distributive function, in addition. In the East Cushitic language Alaaba of Ethiopia (Gertrud Schneider-Blum, p.c.), the reciprocal marker *-ak-'am-* is a verbal suffix consisting of a combination of the reflexive marker *-ak'* and the passive marker *-am-*. The Uto-Aztecan language Comanche of Oklahoma (Robinson and Armagost 1990: 272–273) has a verbal prefix *na-* serving both as a reflexive and a passive marker, while the verbal reciprocal prefix *nanah-* appears to be a reduplicated form of the reflexive marker. In the Sahu language of the West Papuan Phylum (Visser and Voorhoeve 1987: 26), the reflexive marker is *ma-*, while the reciprocal marker has the phonetically more complex form *ma'u-*.

What this suggests is that there appears to be a widespread process whereby the use of reflexives is extended to mark reciprocals with multiple antecedents. In order to distinguish the new use from the old one, some specifying morphological element is added, thereby giving rise to more complex markers (see Section 2.6). For example, in the Mande language Tigemaxo of Niger-Congo, the “unmarked reflexive” construction uses plain plural personal pronouns, while reciprocal meanings are expressed by using the COMRADE strategy (see Section 1.3), adding a grammaticalized form of the erstwhile noun *bɔlɔ* 'comrade':

- (46) Tigemaxo (Mande, Niger-Congo; Blecke 1996: 245)
- |           |           |             |             |           |
|-----------|-----------|-------------|-------------|-----------|
| <i>ye</i> | <i>ye</i> | <i>taŋa</i> | <i>bɔlɔ</i> | <i>te</i> |
| 3PL       | 3PL       | measure     | RECP        | POST      |
- 'They tried each other out.'

The following case might be taken as providing counter-evidence to our hypothesis. In his discussion of the REF-REC item *inydji* in Djinang, Waters (1989: 88–9) argues for reciprocal to be the “proto-function” since the particle *inydji* appears to be cognate with the dyadic suffix *-manydji* (e.g. *wuwi-manydji*

‘mutual brothers’) and both concern the notion of reciprocation.<sup>22</sup> He therefore concludes:

What must have happened diachronically is that a noun + DYAD particle (possibly at the time of the Djinang vowel shift) came to be reinterpreted as noun + reciprocal marker for the clause; that is, the Reciprocation function was shifted from the nominal to the predicate which followed. The initial *m* was lost as well, or possibly reanalysed as a KINPROP suffix on the noun. (Waters 1989: 89)

From a grammaticalization perspective, such a scenario would seem to be plausible indeed since noun phrase morphologies are commonly extended to also mark verb phrase or clausal morphologies. Still, there are problems: What is unclear in particular is the etymology of the initial element *ma-* of the dyadic marker. But the main problem is with the fact that Waters’ hypothesis would entail that the affix *-manydji* developed into the (free) particle *inydji* – a development that is unlikely to happen. To conclude, this hypothesis is in need of further analysis.

#### 2.4. A grammaticalization chain

In accordance with the observations made in Section 2.3 we propose to describe REF-REC categories as grammaticalization chains that have the properties listed in (47).

- (47) Properties of REF-REC categories
- a. There is one form and essentially one and the same construction used to express both reflexive and reciprocal meanings.
  - b. With singular antecedent referents, there is reflexivity only (Stage I).
  - c. With multiple (plural or conjoined) antecedents, the category is ambiguous, expressing either reflexivity or reciprocity (Stage II).
  - d. With multiple antecedents of certain verbs or in specific contexts, the category expresses reciprocity only (Stage III).

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22. “I call the particle ‘reciprocal’ because this was probably the proto-function. Certainly, considering the etymology of the Djinang particle (from the kinship dyadic affix – see Section 3.2), the Reciprocal function is the semantic link between the particle and the DYAD affix. However, the Reciprocal function obtains less often than the Reflexive or Mutualis functions. In my shorter database, the frequencies of occurrence of the various functions are reflexive 36%, mutualis 33%, reciprocal 16% and intransitiviser 15%.” (Waters 1989: 149)

- e. There is no categorical boundary separating reflexive from reciprocal readings: Stage II shares properties with both Stage I and Stage III, even if there are morphosyntactic devices for disambiguation.

In a simplified format, the structure of REF-REC categories can be described as a grammaticalization chain as depicted in Figure 2.

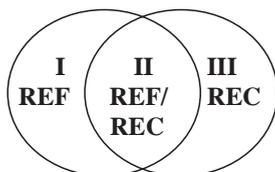


Figure 2. The structure of REF-REC categories.

It is possible that some of the languages discussed have not proceeded beyond Stage II, that is, that there are no situations where “reciprocal” constitutes the only possible reading. The Fon (Fongbe) language of Benin may be such a language, as is suggested by the description of Lefebvre and Brousseau (2001: 74–77) (cf. [48]): “When the antecedent is plural, the pronoun + *-dèè* is ambiguous between a reflexive and a reciprocal interpretation” (Lefebvre and Brousseau 2001: 76). Example (48c) is an instance of Stage II, but there is no evidence of a Stage-III situation; still, there is no detailed information on this issue for any of the languages concerned.

(48) Fon (or Fongbe, Kwa, Niger-Congo; Lefebvre and Brousseau 2001: 74–77)

- a. *bàyi<sub>i</sub> m̀̀̀ é-dèè<sub>i</sub>*  
 Bayi see her-ANPH  
 ‘Bayi saw herself.’
- b. *yé<sub>i</sub> d̀̀̀xó nú yé-dèè<sub>i</sub>*  
 3PL tell word them- ANPH  
 ‘They spoke to themselves.’
- c. *yé<sub>i</sub> m̀̀̀ yé-dèè<sub>i</sub>*  
 3PL see them-ANPH  
 (i) ‘They saw themselves.’  
 (ii) ‘They saw each other.’

There is no information on the relative frequency of occurrence associated with each of these stages. Overall estimates suggest that in any given language, the highest frequency is expected to be found with Stage-I situations, followed by Stage-II situation. This is suggested by the fact that verbs associated with Stage III – that is, unambiguously reciprocal verbs – tend to form a restricted set; in the REF-REC category of Modern Hebrew, for example, there are said to be no more than ten to fifteen such verbs (Maslova and Nedjalkov 2005).

We hypothesize that grammaticalization chains characterizing the structure of REF-REC categories are the result of a unidirectional process, whereby the use of reflexive markers is extended to also express reciprocity when there are multiple antecedents. As elsewhere in the evolution of functional categories there is an intermediate stage, technically known as the “bridging stage” (Heine 2002), where the marker and the construction concerned can be interpreted simultaneously with reference to the (reflexive) source meaning and the (reciprocal) target meaning.

It is to be expected in linguistic typology that there are instances that correspond to the category proposed in every detail while others correspond to it only to a certain extent. Lithuanian is a language of the latter kind: It has a REF-REC category covering Stages I and III, but apparently not Stage II.<sup>23</sup> This situation is in need of explanation.

### 2.5. Extended chains

REF-REC categories are minimal grammaticalization chains combining two salient grammatical functions, and the present paper is confined to such minimal chains. In many languages, however, the category is more extensive. It would be beyond the scope of this paper to discuss all the various types of extended chains that occur crosslinguistically; it may suffice to point out two salient kinds of extension. First, the chain may include the lexical source from which the reflexive meaning is derived, that is, any of the conceptual sources of reflexives summarized in Figure 1. For example, there is one type of extended chain that appears to be particularly common in African languages, namely one that includes an intensifier (INT; commonly called the “emphatic reflexive”) as part of the REF-REC category; hence, the category takes the form sketched in Figure 3 (see Simeoni 1978: 41 for an example from the West Nilotic language Pãri [rok]).

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23. Maslova and Nedjalkov (2005) describe this situation as follows: “In Lithuanian, for instance, ambiguous reciprocal-reflexive clauses are impossible; although it has a single marker that can express both meanings, only one meaning is possible for any given verb.”

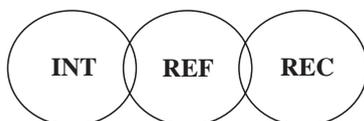


Figure 3. An INT-REF-REC chain.

A second kind of extension includes more strongly grammaticalized functions such as intransitivizing, deobjective, anticausative, potential passive, and passive functions (Kemmer 1993; Haspelmath 1990).<sup>24</sup> The following example from the Central Sudanic language Ma'di (Blackings and Fabb 2003) illustrates such an extended chain, which, in addition to reflexive and reciprocal, contains the lexical source of the chain, namely the noun *rū* 'body', as well as a passive function. That such extensive structures exhibit the same chain-like behaviour that we observed in minimal REF-REC categories is suggested by the fact that the various functions are interconnected by means of the same kind of ambiguity that we encountered in the preceding section. Thus, example (49a) illustrates the ambiguity stage between the lexical ('body') and the reflexive meaning, (49c) that between reflexive and reciprocal, and (49d) between reflexive and passive. The resulting chain structure can be represented as in Figure 4.

- (49) Ma'di (Central Sudanic, Nilo-Saharan; Blackings and Fabb 2003: 93, 117–120)
- |    |                                     |           |
|----|-------------------------------------|-----------|
| a. | <i>má má ?à rū dʒè.</i>             | N/REFL    |
|    | ISG ISG POSS body/REFL wash.NPST    |           |
|    | (a) 'I am washing my body.'         |           |
|    | (b) 'I am washing myself.'          |           |
| b. | <i>ʒí ǝ-dʒè rū rá</i>               | REFL      |
|    | Opi 3-wash REFL AFF                 |           |
|    | 'Opi has certainly washed himself.' |           |
| c. | <i>ká kî rù dʒè</i>                 | REFL/RECP |
|    | 3 PL REFL wash.NPST                 |           |
|    | (a) 'They are washing themselves.'  |           |
|    | (b) 'They are washing each other.'  |           |

24. That there is a fairly widespread historical development from reflexive via anticausative (agent deletion) to passive constructions has been established independently in a number of publications (e.g. Reichenkron 1933; Geniušienė 1987; Kemmer 1993; Cennamo 1993).

- d.  $\bar{5}$ -d $\bar{3}$  $\bar{1}$  r $\bar{u}$  ád $\bar{3}$  $\bar{1}$  $\bar{1}$  REFL/PSV  
 3-take REFL yesterday  
 (a) ‘He took himself yesterday.’  
 (b) ‘It was taken yesterday.’
- e. è $\bar{b}$  $\bar{1}$   $\bar{5}$ -p $\bar{a}$  r $\bar{u}$  r $\bar{a}$  n $\bar{1}$  PSV  
 fish 3-eat REFL AFF FOC  
 ‘It is fish that has certainly been eaten of all the things.’ (p. 93)

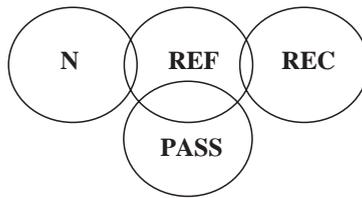


Figure 4. An extended grammaticalization chain of Ma'di rū.

One may wonder why we hypothesize the passive meaning of the Ma'di category to be a grammaticalized extension of the reflexive rather than of the reciprocal. The reason is the following: There is an overlap stage of ambiguity between the reflexive and the passive reading of the category, as (49d) shows, but not between reciprocal and passive (see Blackings and Fabb 2003: 120).

A crucial role in the transition from reflexive to passive meaning can be seen in the nature of the subject referent: Whenever there is a human (or animate) subject referent, the resulting meaning is likely to be reflexive, while with inanimate subjects a passive or intransitivizing reading may surface. Such a situation is crosslinguistically not uncommon (see e.g. Blackings and Fabb 2003: 120 for Ma'di); the following example from the Oceanic language Tinrin of New Caledonia (Osumi 1995: 248ff.) illustrates a similar situation. Tinrin uses what we called in Table 2 the PRONOUN strategy (“unmarked reflexive”), where personal pronouns serve to express reflexivity, cf. (50a). With third person singular referents, however, the construction exhibits the ambiguous reflexive-passive situation: When the subject is human (e.g., with first and second person referents) there is a reflexive reading, while with (third person) inanimate subject referents the reading is passive or spontaneous, cf. (50b).

(50) Tinrin (Oceanic, Austronesian; Osumi 1995: 255)

- a. *u sevirro-rò*  
 1SG turn-1SG  
 ‘I turned around (I turned myself).’
- b. *nrâ sevirro-nrî*  
 3SG turn-3SG  
 (a) ‘He turned around (he turned by himself).’  
 (b) ‘It turned around by itself’; ‘it is turned around (by somebody).’

In a number of languages, the ambiguity situation obtains with human subject referents while contexts with inanimate subject referents exhibit exclusively the passive or passive-like one; the following example from the Cameroonian language Baka illustrates this structure.

(51) Baka (Ubangi, Niger-Congo; Kilian-Hatz 1995: 158)

- a. *wó gbðe tó*  
 3PL hit REFL.3PL  
 (i) ‘They hit themselves.’  
 (ii) ‘They were hit.’
- b. *bèlà à mɛ̀lè tɛ́*  
 work PRF make REFL.3SG  
 ‘The work was done.’

In the Yuman language Hualapai (Watahomigie et al. 2001: 333, 337), the verbal suffix *-v* denotes reflexivity with animate subjects but the “resulting state” (or agentless passive) in combination with inanimate or non-agentive subjects. Hualapai also exhibits the ambiguity stage which, as in Baka, is present in the context of animate subjects, e.g.:

(52) Hualapai (Yuman; Watahomigie et al. 2001: 342)

- jibék* ‘to cover with’  
*jibévk* (a) ‘to cover oneself’, (b) ‘to be covered with’

It would seem that there is in fact a universally well-attested evolution from reflexive (via anticausative and related functions) to passive markers (Haspelmath 1990: 54), while there is no convincing evidence to suggest a reciprocal > passive evolution. Polysemies involving reflexives and passives are fairly common while those involving reciprocals and passives but not reflexives are uncommon.

In the Gramcats sample (see Bybee, Perkins and Pagliuca 1994 for details), there is only one language exhibiting the latter polysemy, namely the Berber language Tuareg (*mə-*; cf. Haspelmath 1990: 36). That this case provides no convincing evidence for a reciprocal > passive evolution is suggested by the fact that in the closely related Berber language Tamasheq there is a verbal prefix *m-* or *n-*, which is presumably etymologically related to Tuareg *mə-*, and which has a polysemy pattern that includes the reflexive, that is, there is a REF-REC-PASS category. Sudlow (2001: 87–88) observes on the prefix *m-* or *n-* in Tamasheq: “This form is usually described as ‘reflexive’ in Berber grammars although in practice the resultant derived verb is often identifiable as passive or reciprocal in meaning” (Sudlow 2001: 87–88).

Evidence against a hypothesis according to which there is a regular evolution from reciprocal to passive also comes from a number of other languages, which exhibit reflexive-passive polysemy without allowing a reciprocal reading. And even if the reflexive and the reciprocal markers are etymologically related, it is often possible to demonstrate that the passive use is derived from the reflexive rather than the reciprocal. For example, in the Uto-Aztecan language Comanche of Oklahoma (Robinson and Armagost 1990: 272–273), the verbal prefix *na-* serves both as a reflexive and passive marker, while the verbal reciprocal prefix *nanah-* appears to be a reduplicated form of the reflexive marker.

What surfaces from the kind of comparative evidence just surveyed is that there are two salient contextual frames that may affect the evolution of reflexive markers: One contextual frame concerns plural subject referents which are a prerequisite for the transition from reflexive to reciprocal meaning, and another frame with inanimate subject referents triggering the transition to passive-like uses.

## 2.6. On disambiguation

In dealing with the structure of REF-REC categories we were confronted with a wide range of cases of ambiguity, in particular with cases where one and the same form and construction can be interpreted with reference to both reflexive and reciprocal meanings. This, however, does not mean that there is no way of distinguishing between the two; rather, there is usually some productive means of disambiguation, such as an appositional or adverbial marker added to the construction; Maslova (2005) considers it to be a universal constraint that even if reflexivity is the major means of reciprocal encoding, there is always a grammatical item for reciprocity to resolve ambiguity if necessary, let us call this the “disambiguator”.

Disambiguators tend to be taken from the pool of sources that we proposed in Figure 1. For example, in the Adamawan Niger-Congo language Bviri, (53a) is ambiguous, and the COMRADE strategy (using the noun *kau* ‘neighbour’) is recruited optionally in (53b) for highlighting the reciprocal meaning. And the same purpose is served in German by the ONE-ANOTHER strategy, where the particle *gegenseitig* (or *einander*, replacing the reflexive marker) ‘one another’ is employed (54b) as a disambiguator to distinguish the reciprocal meaning from the ambiguous construction (57a).

(53) Bviri (Ubangi, Niger-Congo; Santandrea 1961: 63–4)

- a. *ndi nji ti-ndí*  
they kill REFL-their  
(i) ‘They kill themselves.’  
(ii) ‘They kill each other.’
- b. *ndi nji ti-ndí ta kau*  
they kill REFL-their with his.neighbour  
‘They kill each other.’ (\*‘They kill themselves.’)

(54) German (cf. [4])

- a. *Sie hassen sich.*  
they hate REFL/RECP  
(i) ‘They hate themselves.’  
(ii) ‘They hate each other.’
- b. *Sie hassen sich gegenseitig.*  
they hate REFL/RECP mutually  
‘They hate each other.’ (\*‘They hate themselves.’)

In the same way as reciprocal uses, reflexive ones are distinguished by means of disambiguators. In European languages, the INTENSIFIER strategy (see Figure 1) is frequently used, adding an intensifier (e.g. French *même*, German *selbst*) to the reflexive, and the same can be observed in a number of creoles. But eventually, disambiguators may turn into obligatory markers.

To conclude, the disambiguation strategy may, but need not, result in another grammaticalization chain defined by the stages proposed in (55).

(55) From marker of disambiguation to obligatory reflexive or reciprocal marker:

- I There is no way of formally distinguishing between reflexive and reciprocal uses of a construction.

- II There is a marker which is used as an optional disambiguator to distinguish the two meanings.
- III The disambiguator becomes the new obligatory form for the reflexive or reciprocal category. It is either added to the existing marker or else replaces the latter.

We have found no clear crosslinguistic evidence for a Stage-I situation: Whenever detailed information is available there appears to be some productive means for disambiguating reflexive and reciprocal readings. Most of the data discussed in this paper are suggestive of Stage II – that is, while there is ambiguity, it is always possible to rely on conventionalized markers of disambiguation. We also discussed a number of Stage-III situations; it may suffice to draw attention to our Amharic example (Section 2.3), where the REPETITION strategy appears to have been employed to set reciprocal uses off from reflexive ones, with the effect that (partial) reduplication has become a grammaticalized means of distinguishing reciprocal from reflexive uses of most verbs.

## 2.7. Discussion

On the basis of the observations made in the preceding sections we hypothesize that the rise of REF-REC categories is the result of a gradual transition from reflexive to reciprocal uses, while a process in the opposite direction is unlikely to happen. It would seem that in this process there is an intermediate stage where a reflexive category does not rule out a reciprocal interpretation under certain circumstances: If I say *John and Mary see themselves in the mirror*, then in specific contexts this may not only mean that John sees John and Mary sees Mary but also that John sees Mary and vice versa. Once such a situation is generalized, reciprocity can become a regularly distinguished reading of the reflexive category. In other words, we argue for a transitional process of the following kind (cf. [47]):

- I With multiple (plural or conjoined) antecedents, the category is reflexive only.
- IIa With multiple antecedents in specific (collective) contexts, the category, while still reflexive, does not exclude a reciprocal interpretation.
- IIb Reflexive and reciprocal are equally relevant options with multiple antecedents.
- III With multiple antecedents of certain verbs (“symmetric verbs”) or in specific contexts, the category expresses reciprocity only.

Note, however, that this scenario has so far not been tested by means of diachronic evidence. It is based on crosslinguistic findings on grammatical evo-

lution made on categories other than REF-REC ones; further research is needed on this issue.

We observed in this section that there is massive evidence to suggest that there is a crosslinguistically widespread category, that is, a REF-REC grammaticalization chain being characterized by a set of properties that we summarized in Section 2.1. As we saw in Section 2.5, however, REF-REC chains are not seldom part of more extensive chains. We provided two examples of the latter, but what the exact range of such chains is remains to be established by future research. In particular, such research needs to establish how functions like collective, distributive, and chaining, frequently associated with reciprocal uses, relate to REF-REC categories. Such research also has to establish how exactly reciprocal markers being part of REF-REC categories differ from other reciprocal markers.

Frajzyngier (2000: 186–187) argues that in Chadic languages “there is no indication that the reciprocal markers belong to the same grammaticalization chain as reflexive markers”. While this is presumably correct for a number of cases discussed by him, there is reason to doubt whether this really applies to all Chadic languages. A survey of languages of this branch of the Afroasiatic family, using the data provided by Frajzyngier, yields observations such as the following: (a) In Margi, the reflexive marker is coded by means of the noun *kər* ‘head’, while the reciprocal consists of the reflexive marker plus plural participants;<sup>25</sup> (b) In Xdi, both reflexive and reciprocal are encoded by a noun for ‘body’, even if the form of the noun is slightly different, being *ugbá* in the case of the reflexive and *vghá* in the case of the reciprocal; (c) In Mina, both the reflexive and the reciprocal are encoded by the noun *ksəm* ‘body’; (d) In Lele, the reflexive is encoded by the noun *cà* ‘head’ and the reciprocal by the noun *kūsū* ‘body’. However, the data provided by Frajzyngier himself tell a slightly different story: *kūsū* is used for both reflexives (cf. [56a]) and reciprocals (cf. [56b]) (and also as an intensifier).

(56) Lele (Chadic, Afroasiatic; Frajzyngier 2000: 189)

- a. *tèy-dī kūs-ī*  
hit-3M body-3M  
‘He hit himself.’
- b. *éjè-gé kòlò ój-è kūs-ī-gē*  
come-3PL because help-NOM body-3PL  
‘They came to help each other.’

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25. But see Hoffmann (1963: 152–154) for a slightly different analysis.

This survey suggests that in most of these cases we seem to be dealing with extended grammaticalization chains of the form (NOUN-)REF-REC(-PSV), that is, with extended REF-REC categories made up in some way or other of body-part, reflexive, and reciprocal meanings, in some cases also of passive or passive-like meanings. The evidence available does not allow us to determine whether or how the range of grammatical functions expressed by a REF-REC category affects the nature of each of these functions.

### 3. The pragmatic basis of REF-REC categories

On the basis of the observations made in Section 2.1 we may say that, ignoring special uses such as lexicalized and idiomatic structures, REF-REC categories have a reflexive meaning with singular antecedents (Stage I), are ambiguous between reflexive and reciprocal with plural antecedents of many verbs and/or contexts (Stage II), and are exclusively reciprocal with plural antecedents of other verbs and/or contexts (Stage III). This suggests that the internal structure of such categories is defined primarily with reference to the grammatical parameters “number” and “verb subcategorization”. While such an analysis holds true for many canonical uses of the category, it would seem that these grammatical parameters are not sufficient to define the structure of the category, as we will show in the present section, where we are restricted to one instance of the category, namely to the German *sich*-construction. To start with, consider the following examples:

- (57) German
- a. *Sie waschen sich die Hände.*  
they wash REFL/RECP the hands  
‘They wash their hands.’
  - b. *Sie waschen sich den Rücken.*  
they wash REFL/RECP the back  
‘They wash their backs.’

The two examples exhibit exactly the same structure, and both can have a reflexive and a reciprocal meaning; the only difference is that the direct object referent is a different body part. Still, the two tend to evoke contrasting analyses: While (57a) is very likely to be understood as a reflexive sentence, (57b) is more likely to be interpreted as a reciprocal sentence. This suggests that the distinction “reflexive vs. reciprocal” does not relate to syntactic or morphological parameters in such examples. In the present section we argue that this distinction in REF-REC

categories can only be described satisfactorily in terms of pragmatic parameters and, to this end, we will sketch a pragmatically based model that is intended to account for the main structural properties of these categories.

### 3.1. Contextual frames

In a number of grammatical descriptions, the authors refer to the pragmatic factor of “context” in describing REF-REC categories. A typical example is Waters (1989: 149), who concludes in his description of the category in the Australian language Djinang that “if there is no overt indication of coreferentiality, then only the context can disambiguate between Reciprocal and Reflexive interpretations”. Based on such observations, we propose to analyze REF-REC categories in terms of “contextual frames”, which are defined as “the total information accessible to the speaker and the hearer for developing templates on how to create and/or interpret utterances” (see Heine 1993: 113–116; 1995: 26ff.). A contextual frame has the following components:

- (58) Types of knowledge determining contextual frames
- a. Encyclopedic knowledge (E-knowledge)
  - b. Speech-context knowledge (S-knowledge)
  - c. Knowledge of functional concepts (F-knowledge)
  - d. Knowledge of propositional concepts (P-knowledge)

E-knowledge consists of the total range of mental contents that we have acquired in the course of our life, and that we are able to activate in a given situation. In particular, it includes information on the culture concerned, on the effects of physical laws, cultural norms, of past experiences, etc. S-knowledge consists of information relating to a given speech situation; it includes, in particular, information on the previous context and co-text and on the participants and events figuring in that situation. F-knowledge concerns the inventory of functional concepts, that is, schematic, grammatical templates such as the ones distinguished in (1) that serve to structure linguistic discourse. These concepts appear to be discrete and stable, in the sense that they are fairly independent of the linguistic context in which they are used. Thus, the functional concepts that we are concerned with in this paper, REFLEXIVE and RECIPROCAL, are not affected by the context in which they occur. For example, we observed in Section 2 that REF-REC categories are notoriously ambiguous in many contexts with multiple subject referents; still, speakers are usually aware which of the two concepts is involved, and if neither the co-text nor the context make it clear which of the two interpretations is intended, speakers may use disambiguating expressions or other means to distinguish between the two. P-knowledge relates to what speakers

and hearers know about the conceptual structure of texts and their constituents. With reference to examples such as (57), P-knowledge includes information to the effect that there is a proposition expressed by a transitive clause consisting of an action (*waschen* ‘wash’), an agent (*sie* ‘they’), and a patient (*die Hände* ‘the hands’, *den Rücken* ‘the back’).

The relevance of contextual frames can be illustrated with an example involving grooming situations. Grooming or body-care situations typically involve actions such as dressing, washing, shaving, cleaning one’s teeth, combing one’s hair, which have either one particular body part or the whole body as their target (see e.g. Kemmer 1993: 16, 54–55). On the basis of E-knowledge that is available to speakers and hearers, most grooming situations are expected to be performed on oneself rather than reciprocally. Accordingly, verbs denoting grooming actions are likely to evoke the functional concept REFLEXIVE. German grooming verbs such as *rasieren* ‘to shave’, *Zähne putzen* ‘to brush teeth’, or (*sich*) *anziehen* ‘to dress’ therefore have reflexivity as their focal reading, even if there are multiple referents, as in example (57a) above.

But the positive correlation that exists between grooming and reflexivity is not an absolute one, as (57b) shows. Past experience, that is, E-knowledge, tells us that washing one’s hands is usually performed on oneself, while washing one’s back is not an easy exercise, and is therefore not infrequently performed receiving external assistance. Utterances such as (57b) may therefore also evoke the functional concept RECIPROCAL, since the action of washing can as well be conceived as mutual.

To conclude, on the basis of E-knowledge, German grooming verbs have a focal reflexive meaning even if some verbs have a non-focal reciprocal meaning in addition. A predicate like *Zähne putzen* ‘to brush one’s teeth’ is very likely to be performed on oneself, and is therefore strongly associated with reflexivity; while *waschen* ‘to wash’ is less strictly self-directed and therefore less rigidly associated with reflexivity.

E-knowledge not only determines which of the two readings is focal but also which verbs are associated with the REF-REC category in the first place. For example, there are some transitive verbs, such as *gebären* ‘to give birth to’, that on account of the E-knowledge available to speakers of German allow neither for self-directed nor for mutual actions (see Kunze 1997: 108), and that are therefore barred from the category. Other verbs have no ambiguity-stage (Stage II) because they are associated exclusively with either self-directed or mutual actions: German verbs such as *unterwerfen* ‘to subjugate’ or *beherrschen* ‘to rule, reign over’ denote asymmetric social relations and thus do not allow

for mutual actions; hence, they exclude a reciprocal reading,<sup>26</sup> while verbs such as *ähneln* ‘to resemble’ or *begegnen* ‘to meet’ exclude self-directed actions and may therefore not receive a reflexive reading.

Finally, E-knowledge also determines the exact significance that functional concepts have in a given situation. For example, on the basis of this knowledge we are aware that the utterance *Frenchmen and Germans like each other* (see Section 1) does not necessarily imply that every Frenchman likes every German and vice versa; that is, this knowledge enables us to establish which particular meaning the concept RECIPROCAL (‘A acts on B and B on A’) will take in some specific context.

But the structure of REF-REC categories cannot be exhaustively described with reference to E-knowledge only; what is required – at least in a number of cases – is S-knowledge as a second parameter. For example, German *kämmen* ‘to comb’, being another grooming verb, denotes an action that is normally performed on oneself and, hence, is strongly associated with reflexivity, as in (59a). Given the right S-knowledge, as provided by (59b), however, an interpretation in terms of reciprocity is not excluded.

(59) German

- a. *Maria und Anna kämzten sich.*  
 Maria and Anna combed REFL/RECP  
 ‘Maria and Anna combed themselves.’
- b. *Maria besuchte Anna, und die beiden kämzten sich.*  
 Maria visited Anna and the two combed  
 REFL/RECP  
 ‘Maria visited Anna and the two combed each other (or themselves).’

Still, there are situations where S-knowledge is irrelevant, i.e. where E-knowledge provides the only parameter for assigning meanings. A case in point can be seen, for instance, in the presence of symmetric predicates (‘A acts on B’ = ‘B acts on A’) such as *heiraten* ‘to marry’ or *ähneln* ‘to resemble’, which do not reasonably allow for contexts with a reflexive reading.

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26. A reciprocal interpretation is possible, however, with *versuchen* ‘to try’ as a matrix verb (Ekkehard König, p.c.).

## 3.2. Self-directed vs. other-directed actions

Perhaps the main parameter determining the pragmatic nature of REF-REC categories is provided by the distinction between what König and Vezzosi (2002: 213–214; 2004) propose to call “self-directed” vs. “other-directed actions”. We noted above that grooming situations are prototypical instances of the former, while paradigm cases of other-directed actions can be found with verbs of social interaction. On the basis of E-knowledge, many of the latter verbs cannot possibly be interpreted as denoting self-directed actions; hence, their focal meaning is indisputably reciprocal in cases of reference identity.

In their analysis of reciprocal constructions of German, König and Vezzosi (2002) observe that actions such as *schützen* ‘to protect’, *verteidigen* ‘to defend’, *verstecken* ‘to hide’, *vorbereiten* ‘to prepare’, *nachdenken über* ‘to think about’, as well as all actions of body-care, are prototypically self-directed; they concern the individual sphere of the subject referent, that is, they are not directed outwards. Conversely, predicates such as *meiden* ‘to avoid’, *grüßen* ‘to greet’ *bekriegen* ‘to fight’, *jdm. schreiben* ‘to write to’, *helfen* ‘to help’ are prototypically directed outside, to other persons; REFLEXIVE is therefore less likely to be evoked as a functional concept. If, however, a reflexive meaning is intended, some disambiguator (see Section 2.6) is employed.

Crosslinguistic evidence suggests that this distinction presumably provides one of the main parameters for understanding the nature of REF-REC categories. Accordingly, example (60a) is highly likely to evoke the concept RECIPROCAL, since *küssen* is an other-directed action. Still, there may be S-knowledge to the effect that the action described in (60a) is self-directed, hence, where REFLEXIVE is evoked (60a ii), e.g., when there is specific information of the kind illustrated in (60b).

## (60) German

- a. *Und dann küssten sie sich.*  
and then kissed they REFL/RECP  
(i) ‘And then they kissed.’  
(ii) ?‘And then they kissed themselves.’
- b. [*Sie gingen zum Spiegel, pressten ihre Lippen an*  
they went to.the mirror pressed their lips at  
*das Glas, ...*]  
the glass  
‘They went to the mirror, pressed their lips against the glass, ...’

#### 4. Conclusions

Our main concern in this paper was with REF-REC categories and the structure associated with them. We observed in Section 1.3 that reciprocal markers tend to be historically derived from a limited pool of conceptual sources, and we argued that reciprocals derived from reflexives are likely to exhibit a specific structure, namely that of REF-REC categories. These categories are characterized in particular by the fact that there is no clear-cut boundary separating reciprocal from reflexive interpretations, and a substantial range of uses of these categories involves ambiguity between the two meanings. Which of these meanings is involved is determined not by morphological or syntactic, but by pragmatic factors, in particular by what we described in Section 3 as “contextual frames”: Encyclopedic knowledge provides the primary parameter for assigning focal meanings, but Speech-context knowledge also plays some role for shaping the semantic interpretation of the category.

In our discussion of REF-REC categories we were confined to a limited spectrum of the manifestations of such categories. By concentrating on productive mechanisms we ignored the fact that a number of uses of these categories are not determined by contextual frames (cf. Section 3), but rather by morphosyntactic or lexical templates no longer subject to pragmatic manipulation.

What the findings made in this paper suggest is that reciprocal markers are crosslinguistically of two kinds: There appears to be a striking typological difference between reciprocals that are part of REF-REC categories and those that are not. We hypothesize that this difference in behaviour is due to the fact that reciprocals belonging to REF-REC categories constitute the endpoint of grammaticalization, i.e. what König (1988: 150) calls, with reference to concessives, “a dead-end street for interpretative augmentation”, which means that they may not give rise to new grammatical meanings.

Previous work on this subject has been preoccupied to a large extent with particular languages that are not necessarily typologically representative. For example, there have been attempts to derive the semantics of reciprocals from the properties of items such as English *each* on the one hand and *other* on the other – in other words, some of the semantic properties of the English reciprocal *each other* are said to be derived from the morphosyntactic properties of each of the elements of this item (see Everaert 2000). While such a proposal may be justified in languages that have recruited the ONE-ANOTHER strategy (see Section 1.3), which tends to involve a combination of morphemes (e.g. ‘one’ + ‘another’, ‘each’ + ‘the other’), there is no morphosyntactic or semantic basis for such a proposal in languages that have drawn on other strategies, where reciprocal markers are not based on such patterns of morphological composition.

Finally, the observations made in this paper also allow us to understand why certain polysemy patterns are commonly encountered in the languages of the world, while others are unlikely to occur. Since reflexives may grammaticalize into reciprocals, whereas reciprocals do not seem to grammaticalize into reflexives, we find polysemies involving reflexives, reciprocals plus any of the source meanings of reflexives, i.e. those of personal pronouns, intensifiers, or body-nouns. Conversely, we will not expect to find polysemies involving reflexives and reciprocals derived from the COMRADE or the ONE-ANOTHER strategy (e.g., 'one another', 'each other') (see Figure 1). On the basis of this unidirectional behaviour we can predict with a certain degree of probability that the English reciprocal marker *each other* is unlikely to ever give rise to a reflexive marker.

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# Reflexive encoding of reciprocity: Cross-linguistic and language-internal variation

*Elena Maslova*

## 1. Introduction

The encoding of reciprocity and reflexivity by either identical or different forms is a genuine typological variable, insofar as both the presence of formally indistinguishable reflexive and reciprocal markers in some languages and their absence in other languages can hardly be interpreted as accidental. On the one hand, there are multiple independent instances of formal identity across linguistic families and areas, which suggests that this phenomenon must be motivated by universally relevant factors. On the other hand, the phenomenon is obviously not universal: in many languages, there is simply no formal overlap between reciprocal and reflexive encoding. In a third type of languages, reflexive and non-reflexive strategies of reciprocal encoding are combined in various ways. It seems plausible to assume that universal factors motivating language-specific choices of one encoding option over another in individual speech situations ultimately determine diachronic tendencies of reciprocal encoding, thus shaping the overall cross-linguistic distribution of these options. It is therefore a theoretical challenge to account in a unified fashion for cross-linguistic and language-internal variation along this typological parameter, i.e. whether or not there is formal overlap in the encoding of reflexivity and reciprocity.

The paper is organized as follows: Section 2 introduces a cross-linguistic classification of reciprocal constructions based on their formal similarity with reflexive constructions. The structural similarity between these construction types obviously goes deeper than the well-known and cross-linguistically recurrent use of formally identical overt markers: an overwhelming majority of reciprocal constructions exhibit the essentially reflexive-like property of decreasing the number of referentially independent nominal slots even if they do not actually contain a reflexive marker. The cross-linguistic predominance of this type of reciprocal construction can hardly be directly motivated by the semantics of reciprocity, which, in contrast to reflexivity, does not involve any reduction in the number of participants. In Section 3, I argue that this phenomenon suggests

that reciprocal constructions are unlikely to arise from grammaticalization of a reciprocal meaning, that is, from compositional strategies of encoding specific reciprocal submeanings. Instead, the most likely diachronic root of grammaticalized linguistic reciprocity is reflexive encoding, more specifically, the reciprocal/reflexive duality inherent in multiple-participant reflexives. The lack of overt signs of this diachronic origin in many reciprocal constructions with reflexive-like syntactic structure does not contradict this hypothesis because such structures can be inherited by newly emerging reciprocal constructions from older reciprocal/reflexive constructions. By the same token, the multiple-participant reflexive construction can be thought of as a possible candidate for expressing at least some reciprocal sub-meanings even if it is not conventionalized in this function in a given language. This assumption justifies an OT-style approach to modeling the cross-linguistic and language-internal variation in the role of reflexive markers in reciprocal encoding (Section 4). The central hypothesis of this section is the existence of a universal constraint which requires that all clauses where two variables of a binary predicate are linked to a single referential index be marked as reflexive, independently of the intended meaning. In a specific language, this constraint can be outweighed by more general and independently established universal constraints that penalize structural markedness and ambiguity. These constraints are responsible both for the diachronic emergence and cross-linguistic recurrence of non-reflexive reciprocal constructions, and for the language-internal context-dependent preferences for such constructions in languages where both reflexive and non-reflexive reciprocal constructions are available.

Empirically, this paper relies mainly on the database on the role of reflexive in reciprocal encoding compiled in cooperation with Vladimir Nedjalkov for the World Atlas of Language Structures (cf. Maslova and Nedjalkov 2005); in particular, all statistical observations are based on the cross-linguistic data collected for this project. Theoretically, the paper is informed by numerous discussions with Joan Bresnan on the possibilities of closing the unfortunate gap between formal and functional approaches to typology opened by recent developments in Optimality Theory (OT) and the obvious conceptual similarities between OT-style conflicting constraints and competing motivations in functional typology.

## 2. Reflexive encoding of reciprocity: a cross-linguistic overview

### 2.1. Definitions

As a starting point, I adopt the traditional approach to the problem of cross-linguistic comparability, based on the isolation of a relatively transparent and easily identifiable meaning and/or context as a criterion for the identification of comparable constructions in different languages. For reflexive constructions, the obvious diagnostic meaning is the identity of two participants in the event frame, or, in another terminological framework, of two variables of a binary predicate: a construction counts as reflexive if it contains a slot for a binary predicate  $P(x,y)$  and can be used under the condition that  $x$  and  $y$  are identical ( $x = y$ ). Two aspects of this definition seem worth stressing. On the one hand, it does not exclude non-specialized pronominal expressions from the domain of reflexivity, i.e. it is not required that the construction be available *only* under the condition of referential identity of two participants. If the same expression can be used for reference to a distinct participant as well, it still counts as reflexive. On the other hand, the definition does not exclude so called “middle”, or “detransitive”, constructions (cf. Lyons 1968: 373–374; Kemmer 1993; Dixon and Aikhenvald 2000: 11–12). In particular, if an expression can be used to encode not only referential identity of two distinct variables, but also certain valence-decreasing modifications (anticausative, autocausative, etc.), it is still considered reflexive. This entails that a language-specific reflexive marking strategy can amount to using a unary (e.g. intransitive) argument structure in combination with a binary predicate.

There are three major reasons for these extensions with respect to more classical and restrictive definitions of “reflexive”, as adopted, for example, by Faltz (1985). First, they ensure that every language has at least one reflexive construction. Accordingly, the question of whether a reflexive construction can be used to encode reciprocity can be asked of any particular language. Secondly, these extensions effectively dispense with multiple blurred borderline cases, which tend to obstruct any cross-linguistic investigation, without having to go into details about whether the recurrence of the relevant cases is due to insufficient analysis of specific languages, or to dubious theoretical distinctions. Such questions are irrelevant in the context of this paper. Last but not least, the broad definition ensures that all expressions that can be used to encode both reflexivity and reciprocity are taken into consideration. On the one hand, it is well known that reflexive/reciprocal expressions often have a variety of other valence-decreasing meanings and can thus be classified as “middle markers” (Nedjalkov 1975; Kemmer 1993). On the other hand, reflexive and reciprocal

expressions need not be specialized as coreference markers. For instance, the following To'aba'ita sentence contains two identical pronouns, which can, but need not have identical referents. In the case of a coreferential interpretation, the intended meaning can be either reciprocal (as in this example) or reflexive:

- (1) To'aba'ita (Lichtenberk 2007: 1553)

*Keero'a keko thathami keero'a 'a-fa bongi 'eri.*  
 3DU 3DU.SEQ like 3DU at-CLSF day that  
 'The two of them liked each other on that day.'

For reciprocal constructions, the traditional diagnostic meaning is the conjunction of two instances of the same binary predicate with inverse distributions of variables or, in other words, a combination of two tokens of the same event type with cross-coreferential participants. This meaning will be denoted as “RECP<sup>&</sup>” and can be represented in the following simplified form (which is intended to remain neutral with respect to whether RECP<sup>&</sup> modifies the predicate or the proposition):

- (2) RECP<sup>&</sup>[P(x,y)](a,b) ≡ P(a,b) & P(b,a)

Just as in the previous case, this definition excludes neither “middle” reciprocal constructions, nor constructions that might be available under other conditions on the referential identity of participants. However, this study is limited to so-called “subject-oriented” reciprocal constructions, that is, the first variable of P(x,y) is supposed to correspond to the primary syntactic slot in the basic (non-reciprocal) argument structure.

It will be convenient to begin with a classification of reciprocal constructions into two major types, which can be referred to as *unary* and *binary* constructions. A reciprocal construction counts as “unary” if all reciprocants must be referred to within a single morphosyntactic slot (Section 2.2); a reciprocal construction is “binary” if it retains two referentially independent morphosyntactic slots of the underlying non-reciprocal argument structure (Section 2.3).<sup>1</sup>

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1. This two-way classification in effect disregards so-called “discontinuous reciprocal constructions”, which have two slots for distinct reciprocal participants (as in binary constructions), but a fixed intransitive valence frame different from that associated with P(x,y). This is because such constructions, insofar as they are available in a language, appear to imply the existence of a unary construction with exactly the same reciprocal marker (but not vice versa) (cf. Maslova 1999: 169). In the context of this paper they can be treated, therefore, as a secondary encoding strategy derived from the unary reciprocal structure.

## 2.2. Unary reciprocal constructions

The class of unary reciprocal constructions can be further subdivided into two formal subtypes. The first subtype comprises constructions that retain all morphosyntactic slots of the non-reciprocal argument structure, but one of these slots is instantiated by a fixed simple or bipartite reciprocal expression; the Bamana sentence in (3) exemplifies a simple reciprocal expression, and its English translation, a bipartite expression.

- (3) Bamana (Vydrine 2007: 1921)

*Nzànga ní à mùsô bìla-là jógon ná*  
 Nzanga and his wife.ART lean-PNCT RECP upon  
 ‘Nzanga and his wife insulted each other.’

The second subtype comprises valence-decreasing constructions, where one of the nominal slots of the corresponding non-reciprocal argument structure is absent, and two semantic roles of the main predicate are linked to a single morphosyntactic slot. The reciprocal meaning is expressed by a free or bound verbal modifier, as in (4) and (5), or, in some cases, just by the unary valence frame (cf. [6]).

- (4) Nivkh (Otaina and Nedjalkov 2007: 1739)

*əmək-xe ətək-xe orxorχ t'axta-d'-yu*  
 mother-COM.DU father-COM.DU RECP get.angry-FIN-PL  
 ‘Mother and Father got angry with each other.’

- (5) Kuuk Thaayorre (Gaby this volume: 260)

*ngal nhaanhath-rr*  
 1DU.INCL watch.RDP-RECP  
 ‘We two are looking at each other.’

- (6) West Greenlandic (Fortescue 1984: 166)

*kunip-put*  
 embrace-3PL.INTR  
 ‘They embraced.’

This sub-classification is not intended to be categorical; there are some intermediate cases (most of them probably corresponding to halfway steps of the grammaticalization path from the first subtype to the second one), as well as

combinations of these two strategies.<sup>2</sup> Essential in the present context are the following similarities between all unary reciprocal constructions: all constructions of this type invoke (i) a binary predicate  $P(x,y)$  – either directly or, if the reciprocal expression is derivational, indirectly; (ii) reference to a set providing the intended values for both variables  $x$  and  $y$ , which formally corresponds to the first argument of  $P$ ; and (iii) a reciprocal expression, which can but need not formally instantiate the second argument of  $P$ . The fundamental property of these constructions is the decrease in the number of morphosyntactic slots suitable for independent nominal reference with respect to the number of distinct semantic roles, and, accordingly, with respect to the valence frame of  $P(x,y)$ .

### 2.3. Binary reciprocal constructions

Binary reciprocal constructions are constructions that retain the valence frame associated with the basic predicate  $P(x,y)$ , with the values of two variables being specified in distinct morphosyntactic slots. The most common subtype of binary reciprocal constructions comprises structures containing a non-reciprocal clause and an additional component expressing reciprocity; this can be another clause, a fixed expression, or a combination of these.

- (7) Cantonese (Matthews and Yip 1994: 87)  
*Ngóh béi-min kéuih kéuih béi-min ngóh.*  
 I give-face him he give-face me  
 ‘He and I respect each other.’

- (8) *Her friends do not like me and vice versa.*

It seems that the reciprocal expression of a binary construction can also be a clause-internal verbal modifier (e.g. an affix), but such constructions are very rare cross-linguistically and their status can be somewhat controversial; for instance, the following Tonga sentence instantiates the transitive argument structure, but the cross-reference prefix on the verb indicates plurality of the subject:

- (9) Tonga (Bantu; Collins 1962: 74)  
*Joni ba-la-yand-ana amukaintu wakwe.*  
 John 3PL-PRS-love-RECP wife his  
 ‘John and his wife love each other.’ (lit. ‘John mutually loves his wife.’)

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2. In West Greenlandic, for instance, the mandatory detransitive form of the main verb (as in [6]) can be accompanied by a pronoun in the ablative case form (see [11]).

While some sort of binary encoding of reciprocity must apparently be available in all languages (one can hardly imagine a grammatical constraint against biclausal sequences like the one in [7] under any reference-related conditions on participating NPs), unary structures are overwhelmingly predominant cross-linguistically as reciprocal constructions, i.e. as conventionalized means of expressing reciprocity (cf. Maslova and Nedjalkov 2005).<sup>3</sup> Moreover, if binary reciprocal structures are grammaticalized, they tend to develop into unary constructions, with a single slot for reference to the set of reciprocants and “frozen” (and, possibly, subsequently reduced), originally distinct slots. An example of this development is the reciprocal construction in Amele, illustrated in (10). A certain degree of grammaticalization of this construction is manifested by the “frozen” 3SG cross-reference suffixes on both forms of the lexical verb, which are used independently of the actual relation between reciprocants and interlocutors.

(10) Amele (Trans-New Guinea; Roberts 1987: 307)

*Ele ew-udo-co-b ew-udo-co-b ow-a.*  
 1DU despise-IO.3SG-DS-3SG despise-IO.3SG-DS-3SG 1DU.SBJ-PST  
 ‘We (two) despise each other.’

#### 2.4. Reciprocal/reflexive polysemy

Obviously, the phenomenon of reciprocal/reflexive polysemy is limited to the domain of unary reciprocal constructions. To put it the other way round, if a reflexive construction can be used to express reciprocity, the result is a unary reciprocal construction. From this point of view, unary reciprocal constructions fall into three major subtypes. The first subtype subsumes genuinely ambiguous reflexive/reciprocal constructions, as exemplified in (11)–(12).

(11) West Greenlandic (Eskimo-Aleut; Fortescue 1984: 166)<sup>4</sup>

*Immin-nut tuqup-pu-t.*  
 REFL-ALL kill-IND-3PL  
 ‘They killed themselves.’ or ‘They killed each other.’

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3. The cross-linguistic frequency of binary reciprocal constructions is hard to estimate, because descriptive grammars often do not contain sufficient information to distinguish conventionalized binary constructions from compositional biclausal strategies in languages without reciprocal constructions. Based on the data presented in Maslova and Nedjalkov (2005), the frequency of binary constructions among the world’s reciprocal constructions lies somewhere between 2% and 15%.

4. Throughout this paper, “REFL” is used as a gloss for polysemous reflexive/reciprocal expressions.

- (12) Wari (Chapacura-Wanham; Everett and Kern 1997: 191)

*para mana' xujuhu'?*

therefore angry REFL.2PL

'Why are you angry with each other?' or 'Why are you angry with yourselves?'

In what follows, such constructions will be referred to as *reflexive reciprocals*.

Secondly, there are reciprocal constructions that can be thought of as containing a reflexive marker and an additional disambiguating expression, which enforces a reciprocal interpretation. Such constructions will be referred to as *reflexive-based reciprocals*. The disambiguating expression can, but need not be capable of functioning as an autonomous reciprocal marker: In (13), the disambiguating expression is an iterative suffix, in (14), a reciprocal suffix.

- (13) West Greenlandic (Eskimo-Aleut; Fortescue 1984: 166)

*Immin-nut tuqu-rar-pu-t.*

REFL.PL-ALL kill-ITER-IND-3PL

'They killed each other.'

- (14) Evenki (Nedjalkov and Nedjalkov 2007: 1620)

a. *Nuɣartən merwer aw-žara-∅.*

they REFL wash-PRS-3PL

'They wash themselves.' or 'They wash each other.'

b. *Nuɣartən merwer aw-maat-čara-∅.*

they REFL/RECP wash-RECP-PRS-3PL

'They wash each other.'

More frequently, the disambiguating component of a reflexive-based construction is a free form, e.g.:

- (15) Djaru (Tsunoda 2007: 876)

a. *mawun-tu nga=lu=nyunu pung-an*

man-ERG C=3PL.SBJ=RECP/REFL hit-PRS

'The men are fighting.' or 'The men are hitting themselves (in mourning).'

b. *nga=rnalu=nyunu pirrirrki yaan-inyurra*

C=PL.EXC.SBJ=REFL shoot-PST.NARR

*wayininy mirni-mirni=lu*

in.return

'We shot at one another in return.'

(16) To'aba'ita (Oceanic; Lichtenberk 2007: 1555)

*Roo wane kera ngata-fi keero'a kwailiu.*

two man 3PL.FACT berate-TR 3DU RECP

'The two men berated each other.' (cf. [1])

Finally, there are unary reciprocal constructions that exhibit no formal overlap with their reflexive counterparts (the English construction with *each other* being a case in point). These constructions will be referred to as *non-reflexive unary reciprocals*. The reciprocal expressions of non-reflexive reciprocal constructions can, but need not be compatible with reflexive markers, i.e. they can but need not serve as disambiguating expressions of reflexive-based constructions. For example, Russian *drug druga* and German *einander* do not occur in reflexive-based constructions, whereas Bulgarian *edin drug* and French *l'un l'autre* do.

### 3. Reflexive roots of linguistic reciprocity

#### 3.1. Reciprocity, reflexivity and unarity

As mentioned in Section 2, an overwhelming majority of reciprocal constructions are unary. In fact, unary reciprocals are so familiar and pervasive that it generally remains unnoticed in the literature that this structural property conflicts with the semantic structure of reciprocity. This conflict becomes obvious if we compare reflexive and reciprocal constructions: For reflexives, the unary structure is directly and transparently motivated by the very essence of reflexive meaning, which entails the reduction of the number of participants in the event frame. In contrast to this, reciprocity does not reduce the number of participants, as shown by its semantic representation (see [2]), as well as by the very existence of binary reciprocal constructions in some languages (see Section 2.3). If we take RECP<sup>&</sup> not only as a convenient heuristic device intended solely for establishing cross-linguistic comparability, but also as a genuine semantic "core" (or "prototype") of linguistic reciprocity (cf. Lichtenberk 1985: 21; Kemmer 1993: 96–97), binary structures (in particular, various biclausal sequences) would appear to be the most transparent and presumably universally available strategy of reciprocal encoding. The question is, then, why are reciprocal constructions predominantly unary? The answer I am going to argue for in this section is, informally, that the roots of linguistic reciprocity are reflexive; to be more accurate, I suggest that the multiple-participant reflexive constructions constitute the most likely diachronic source of conventionalized reciprocal constructions.

Although the possibility of a reflexive-to-reciprocal diachronic path is established beyond reasonable doubt (see Heine and Miyashita this volume for a

detailed discussion and references), it is usually reconstructed only for reflexive and reflexive-based reciprocal constructions. It seems, however, that unary *non-reflexive* reciprocal constructions can also be traced back to a reflexive source. The first step of such a development involves the conventionalization of a reflexive-based reciprocal construction, whereby an additional expression is introduced into a reflexive reciprocal construction for disambiguation purposes (see Section 2.4). At the next stage, the reflexive marker can be dropped, and the disambiguating expression begins to function as an autonomous reciprocal marker. A clear example of such a development is provided by the history of German, where the reciprocal expression *einander* appeared as a disambiguating component of *sich*-based reciprocal construction in the twelfth century (cf. Lockwood 1968: 69f.), and was used in this function till the seventeenth century (cf. Vernaleken 1861: 93; Behaghel 1923: 306). In such a situation, the inherited unarity of the resulting reciprocal construction would be the only visible trace of its reflexive source. This indicates that the likelihood of reflexive-to-reciprocal development can be significantly higher than suggested by the synchronic frequency of reflexive and reflexive-based constructions<sup>5</sup> and can account for the cross-linguistic predominance of unary reciprocal constructions in general.

Before I present my arguments for this hypothesis, a note is in order. The notion of a “conflict” between the semantics of reciprocity and its predominant structural manifestation, as outlined above, is based on the assumption of the central role of RECP<sup>&</sup> in the network of reciprocal meanings. This assumption, albeit common in functional typology, is far from being self-evident. Most importantly in the present context, the reciprocal semantics can also be construed as being inherently unary. The details of such construal would, of course, depend on the theoretical framework adopted, but the general idea is that the reciprocal meaning combines a *set* of entities and a binary predicate with both variables ranging over this set, with the general structure as follows (cf. Dalrymple et al. 1998: 83):

$$(17) \quad \text{RECP}(\{a, b, c, \dots\}, \lambda x \lambda y [P(x, y)])$$

A set-based representation of reciprocal semantics does not single out RECP<sup>&</sup> (as opposed to multiple-participant reciprocity) and provides a more adequate semantic description of unary reciprocity. Indeed, there seem to be no languages

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5. The synchronic frequency of these construction types significantly varies depending on the geographical macro-area: In Eurasia, they are present (mostly along with non-reflexive constructions) in about thirty percent of the languages; elsewhere, they constitute about half of the world's reciprocal constructions (cf. Maslova and Nedjalkov 2005).

that have a productive unary reciprocal construction and at the same time limit the potential number of reciprocants: multiple-participant reciprocity can always be expressed (Maslova 1999: 169–171). This suggests that if a language has a unary reciprocal construction, then this construction has a set-based reciprocal semantic structure like in (17) (rather than just a conjunction-based structure like in [2]). However, this cannot account for the cross-linguistic predominance of unary reciprocal constructions unless we assume that unary reciprocity is a universal linguistic feature, present in a language independently of whether or not it has a unary reciprocal construction, or indeed any productive reciprocal construction at all. Since the set-based semantic representation of reciprocity (like in [17]) seems to be motivated exactly by the structure and semantics of unary reciprocal constructions, such an assumption would create a conspicuous degree of circularity in the cross-linguistic analysis of reciprocity.

The approach adopted here is based on the idea that the speakers of a language without a conventionalized reciprocal construction would occasionally need to describe reciprocated events or relations, and would therefore resort to available means of doing so. However, the meanings of such sentences obviously cannot be equated with the meaning of a unary reciprocal construction: on each particular occasion, the intended meaning would be considerably more specific, and the choice of an appropriate encoding strategy would, as a rule, strongly depend both on the meaning itself and on its context (this state of affairs is described in some detail for a still reciprocal-less state of Germanic by Plank this volume). The rise of a conventionalized reciprocal construction can be thought of as the outcome of a competition between such strategies, which depends, among other things, on two interrelated factors, namely, the semantic potential of each strategy (i.e. the range of reciprocal meanings it can express) and its overall discourse frequency.<sup>6</sup> The latter would, in its turn, depend on the discourse frequency of specific meanings within the semantic domain of each construction, and of the range of contexts in which the relevant construction is likely to be chosen. The structural unarity of the resulting construction can be either inherited from the original strategy or acquired along the path of grammaticalization. My arguments for multiple-participant reflexivity being the most likely source of reciprocal constructions are therefore two-fold. On the one hand, multiple-participant reflexivity belongs to the universal set of exploratory strategies for expressing reciprocity and is likely to achieve a higher discourse frequency than

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6. The implied model of language change is based on Croft's (2000: 9–41, 87–116) "Theory of Utterance Selection" and Harris and Campbell's (1995) ideas about the role of productive grammar and exploratory expressions in language change (Harris and Campbell 1995: 72–75).

the competing strategies; on the other hand, it is the only strategy from which the structural unarity of the resulting construction can be inherited, and its inherent unarity endows it with certain functional advantages over competing strategies.

### 3.2. Compositional strategies of reciprocal encoding

There are two classes of reciprocal meanings for which compositional strategies appear to be universally available. To begin with the most obvious case, RECP<sup>&</sup> can be easily encoded in the absence of a conventionalized reciprocal construction: it can be safely assumed that every language has what can be referred to as a *biclausal reciprocal strategy*, available independently of whether or not a unary reciprocal construction is available as well, e.g.:

(18) Russian

- a. *Maša i Vanja zameti-l-i drug drug-a.*  
 Masha and Vanya notice-PST-3PL RECP RECP-ACC  
 ‘Masha and Vanya noticed each other.’
- b. *Maša zameti-l-a Van-ju, a on eje.*  
 Masha notice-PST-3SG.F V-ACC and he her  
 ‘Masha noticed Vanya, and he (noticed) her.’
- c. *Maša zameti-l-a Van-ju, a on eje net.*  
 Masha notice-PST-3SG.F V-ACC and he her NEG  
 ‘Masha noticed Vanya, but he didn’t (notice) her.’

The first sentence exemplifies a unary reciprocal construction, while the second renders the same meaning by means of a biclausal sentence, with the predicate of the second clause omitted because of its identity with the first one, and the proper names replaced with personal pronouns. The third sentence demonstrates that this simplified biclausal sequence is not a reciprocal construction, since the second proposition can be independently negated. However, sentences (18a) and (18b) are semantically virtually equivalent.

As shown by the binary reciprocal constructions attested in some languages (cf. Evans this volume), a biclausal strategy can be conventionalized as a reciprocal construction, and even eventually evolve into a unary construction (see Section 2.3). Such a development must apparently involve the combination of a reciprocal encoding strategy with some sort of topicalization strategy, with both reciprocants referred to by means of a single topic expression. Obviously, this is a necessary but not sufficient condition for semantic extension into the domain of multiple-participant reciprocity: any binary strategy, whether or not it is conventionalized, limits the number of reciprocants to two; even if this

structural constraint is circumvented (for example, by topicalization of the set of reciprocants), the original (and highly iconic) “two-events” semantics of a biclausal strategy may decrease the likelihood of its being used for descriptions of multiple-participant reciprocal situations and thus hinder its conventionalization in this function. The same property of biclausal strategies can also prevent them from being recruited for encoding of “single-event” reciprocal situations (see Section 3.4).

Multiple-participant reciprocal meanings can be encoded compositionally insofar as they can be reduced to a combination of two quantifiers, which are independently present in the lexicon. The canonical case of such a meaning is so-called “strong reciprocity”, which can, in a simplified form, be represented as follows:

$$(19) \quad \text{RECP}^{\forall}[P(x,y)](\mathbf{S}) \equiv \forall x \in \mathbf{S} \forall y \in \mathbf{S} \setminus \{x\} P(x,y)$$

The essential property of any specific reciprocal meaning of this sort is that it contains a separate quantifier for each argument (as shown in [19]) for strong reciprocity). This structure can be iconically rendered in a natural language. Example (20a) demonstrates the possibility to express the strong reciprocal meaning compositionally, without resorting to a conventionalized unary construction. Similar alternative expression, with other quantifiers, could easily be given for weaker reciprocal meanings as well (an example is given in [20b]):

(20) Russian

- a. *Každyj* *uèastnik* *horšo* *zna-l* *vse-h*  
 Each participant well know-PST.3SG.M all-ACC  
*ostal'n-yh*.  
 other-PL.ACC  
 ‘Each participant knew all the others well.’
- b. *Každyj* *uèastnik* *horšo* *zna-l* *nekotor-yh*  
 Each participant well know-PST.3SG.M some-PL.ACC  
*drug-ih*.  
 other-PL.ACC  
 ‘Each of them knew some of the others well.’

I will refer to this class of strategies of reciprocal encoding as “distributed”. Note that distributed strategies can also be used to express reciprocity in languages that also have unary reciprocal constructions, in those contexts where these constructions are not available due to syntactic constraints, e.g.:

(21) Russian

a. **Každyj** učeník *duma-l*, čto učitel'nica  
 each student think-PST.3SG that teacher  
*hvalit drug-ogo.*  
 praise-PRS.3SG other-ACC

b. \**Oni* *duma-l-i* čto učitel'nica *hvalit drug*  
 They think-PST-3PL that teacher praise-PRS.3SG RECP  
*drug-a.*  
 RECP-ACC

'Each thought that the teacher was praising the other.'

Distributed strategies of this sort are not conventionalized reciprocal constructions, insofar as the participating quantifiers need not quantify over the same set, even though in the absence of overt references to different sets the reciprocal interpretation is most likely in most contexts, cf. (20a) and (22):

(22) Russian

**Každyj** učastnik *horošo zna-l vse-h*  
 Each participant well know-PST.3SG.M all-ACC  
*ostal'n-yh dokladčik-ov.*  
 other-PL.ACC presenter-PL.ACC

'Each participant knew all the other presenters well.'

Even though bipartite reciprocal expressions reminiscent of distributed strategies (such as *each other*) occur as reciprocal markers of unary constructions, these strategies themselves are not unary in the same sense. Conversely, there seem to be no conventionalized unary reciprocal constructions with the component quantifiers located in their respective morphosyntactic slots. Instead, bipartite markers of unary reciprocal constructions invariably occur in the secondary morphosyntactic slot of unary reciprocal constructions, exactly like reflexive expressions do, and their quantifier-like components cannot be linked to distinct sets. In other words, the composite structures of the distributed type illustrated in (20) are apparently never grammaticalized in their genuinely iconic distributed form. Yet if a grammaticalization path starting with a distributed strategy and leading to a unary reciprocal construction had been at all common, at least some intermediate stages with the first quantifier still in its original position would have shown up in cross-linguistic surveys. As it is, the typological data available gives a distinct impression of discontinuity, with no visible "bridge" between compositional distributed strategies and fully conventionalized unary

reciprocal markers built from similar lexical material, which indicates that such a development is not very probable.<sup>7</sup>

Since bipartite markers of the same sort also occur cross-linguistically as disambiguating expressions of reflexive-based constructions, it seems reasonable to hypothesize that the lexical material of a distributed strategy can be recruited for the disambiguation of reflexive reciprocal construction, and will only then gradually be conventionalized as an autonomous reciprocal marker of unary constructions (see Section 3.1 for a documented example of such a development). In this case, the unary structure is inherited from the reflexive source, whereas the lexical material comes from a compositional distributed strategy. This hypothesis would explain the apparent discontinuity between distributed strategies and unary constructions. Another plausible explanation of the same phenomenon is grammatical borrowing: since bipartite reciprocal markers are fairly transparent semantically, they can be easily recreated in a borrowing language from its own lexical material; in this case, the ultimate source of the unary reciprocal construction belongs to the donor language.

Note that the availability of compositional reciprocal strategies along with reciprocal constructions demonstrates that the reciprocal meanings are never obligatory in the way fully grammaticalized meanings are; that is, reciprocity is apparently never grammaticalized to the point where the grammar requires every reciprocated event to be marked by means of a reciprocal construction. In contrast to this, the reflexive meaning tends to be strongly grammaticalized in this sense: if the language has a specialized reflexive expression, its use in descriptions of reflexive events is usually mandatory. This cross-linguistic difference between reflexivity and reciprocity appears to be semantically motivated: whereas a reflexive event differs from a same-type event directed towards another participant, a reciprocal event consists of its sub-events. Consequently, the lack of obligatory reflexive marking would lead to recurrent ambiguity between two quite different interpretations, whereas the lack of obligatory reciprocal marking just licenses as it were incomplete descriptions of complex situations (which are inevitable in any natural language anyway). An obvious result of this difference is a consistently higher degree of grammaticalization of the reflexive meaning; in particular, reflexive constructions are likely to be structurally simpler and occur more frequently than the corresponding non-reflexive reciprocal constructions (if there are any) and compositional expressions. As will be shown

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7. Alternatively, we have to assume that a combination of this strategy with a quantifier floating construction is prerequisite for its conventionalization in the reciprocal function, see also Plank (this volume).

in Section 4, this difference may play a significant role in the choice of reflexive encoding of reciprocity over non-reflexive options.

### 3.3. Multiple-participant reflexivity as an exploratory reciprocal-encoding strategy

Apart from compositional strategies, another grammatical construction can be used as an “exploratory expression” (cf. Harris and Campbell 1995: 54, 56) of reciprocity: A reflexive construction combined with reference to a set of participants seems to be universally available at least in this exploratory function, since reciprocity is an inherent aspect of its semantics. More specifically, such a combination can have two distinct submeanings: it can describe a set of reflexive events with different participants, or a single reflexive event with the whole set of participants playing both roles. The examples in (23) seem to provide contextual information sufficient to distinguish between these meanings:<sup>8</sup>

- (23) a. *People who choose citizenship in a different nation can take credit and justifiably **feel proud of themselves** for making that choice and for enduring the hardships it may have entailed (learning a new language, adopting new styles of dress and new standards of morality).*
- b. *But with increasing affluence and equality, most black people followed the path of Martin Luther King toward full integration, and began **calling themselves African-Americans** in the same way as Americans of Irish ancestry call themselves Irish-Americans.*

The second, collective, meaning (“REFL<sup>COLL</sup>”) corresponds to a complex set of events in which two distinct roles are played by members of the same set and thus differs from reciprocity proper only insofar as reflexive individual events are not explicitly excluded. To put it the other way round, this meaning encompasses reciprocity, since two participant roles are linked to the same set of referents and individual sub-events are not necessarily reflexive, i.e. they can involve different members of the set.

REFL<sup>COLL</sup> as a submeaning of reflexive construction differs from the semantics of a reflexive reciprocal construction in that reflexivity and reciprocity constitute two aspects of a single meaning, rather than two alternative meanings, one

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8. These examples are taken from: Kenneth R. Conklin. *Pride and Prejudice – What It Means To Be Proud of a Person, Group, Nation, or Race; Racial Profiling, Racial Prejudice, and Racial Supremacy.*

(<http://www.angelfire.com/hi2/hawaiiansovereignty/prideandprejudice.html>).



constructions, which can eventually evolve into non-reflexive unary constructions; for a detailed discussion of this diachronic path, see Heine and Miyashita (this volume).

It should be noted that some unary reciprocal constructions exhibit formal similarity or identity with other (i.e. non-reflexive) constructions, in particular, with collective constructions or various expressions of verbal plurality, e.g. iterative constructions (Kemmer 1993: 99–100, 1997; Lichtenberk 1985, 1999; Maslova 1999). In this paper, I will not discuss such possibilities, because I am primarily interested in the diachronic source of structural unarity, understood as linking two distinct roles of a binary predicate to a single referring expression, and neither collective nor iterative constructions are unary in this sense. It seems important to mention, however, that iterative markers can also function as reciprocal disambiguating expressions in reflexive-based constructions (see [13]), and thus can acquire their reciprocal meanings from such contexts (see Bybee, Perkins and Pagliuca 1994: 285–289 on this mechanism of semantic change).

### 3.4. Compositionally ineffable reciprocal meanings

There are two overlapping classes of meanings which are commonly encoded by unary reciprocal constructions and are ineffable compositionally. The first class (denoted as “RECP<sup>≈</sup>” below) encompasses loose, underspecified descriptions of sets of similar events where participants playing different roles are construed as a single set, but no fully specified reciprocal sub-meaning (which could be expressed by means of a distributed strategy) is intended. For instance, a sentence like (25) can loosely describe a set of simultaneous conversations between various groups of conference participants, which would be appropriate independently of whether all of them are actually talking or not. Any compositional near-equivalent of this sentence would make the meaning considerably stronger and more specific than intended.

- (25) Russian  
*Učastniki konferenci-i razgovariva-jut drug s*  
 Participants conference-GEN talk-3PL RECP with  
*drug-om.*  
 RECP-INST  
 ‘The conference participants are talking with one another.’

The ability of conventionalized reciprocal constructions to express the RECP<sup>≈</sup> meaning is related to the fact that they neutralize the semantic distinctions

between distributed compositional strategies. For example, the sentence in (26) constitutes a feasible alternative to both sentences in (20):

- (26) Russian  
*Učastnik-i horošo zna-l-i drug drug-a.*  
 participant-PL well know-PST-PL RECP RECP-ACC  
 ‘The participants knew each other well.’

In other words, the RECP<sup>~</sup> meaning appears to emerge as a result of grammaticalization, which inevitably neutralizes some semantic distinctions and thus opens the possibility of underspecified descriptions of reciprocal-like combinations of events. On the other hand, the distinctions between specific reciprocal meanings are also neutralized by the multiple-participant reflexive strategy of reciprocal encoding, that is, in contrast to compositional strategies, it can be used for RECP<sup>~</sup>-descriptions. This is illustrated by the examples in (24) above, where the reciprocal meaning remains underspecified.

The second class of compositionally ineffable meanings corresponds to what can be referred to as “single-event reciprocity” (denoted as RECP<sup>S</sup> below), where a reciprocal event can be construed as saliently different from a set of asymmetrical events (Dimitriadis this volume calls such events ‘irreducibly symmetric’). To the extent that this class of event types can be described in a language-independent fashion, it subsumes culturally and/or biologically salient interactions between participants with essentially identical roles (Kemmer 1993: 102–119). The most obvious and widely cited example of a salient distinction between RECP<sup>S</sup> and RECP<sup>&</sup> is probably *kissing*: a sentence like *They kissed* can, and usually does, refer to a single event quite different from two simultaneous reciprocal kisses. Another set of recurrent examples is provided by verbs of speech, insofar as a dialogue cannot be equated with two simultaneous monologues.

In the following discussion, it will be convenient to distinguish between “RECP<sup>S</sup>-predicates” and “RECP<sup>S</sup>-oriented predicates”. The former concept reflects the fact that the RECP<sup>S</sup>-meaning is usually to some extent integrated into the lexicon, so that such events are signified by symmetric predicates (as in *She married him*), sometimes derived from their asymmetrical counterparts by means of a non-productive derivation process (as in [27a]) or a lexicalized reciprocal derivation (cf. [27b]) (see also Siloni this volume).

- (27) a. Luvale (Horton 1949: 102)  
 -*íw-asana*  
 -hear-RECP  
 ‘consult, agree’

- b. Yakut (Pekarsky 1959: 312, 317)

*et-is-*

say-RECP-

‘speak with each other; quarrel, squabble’

Thus, the concept of “lexical reciprocal” is essentially language-specific. In contrast to this, RECP<sup>S</sup>-oriented predicates signify events that are asymmetrical, yet conceptually similar to, as it were, “one-way” components of common symmetrical events (like *kiss* or *talk*). This concept can also be viewed as language-specific, and, even more so, culture-specific, but it is much more uniform cross-linguistically, since such types of human interactions as fighting, talking, and, broadly speaking, loving, seem to be universally salient. The RECP<sup>S</sup>-oriented predicates serve as a natural lexical pool for single-event reciprocal descriptions, but only if a language has an appropriate strategy of reciprocal encoding. The essential property of an appropriate strategy is a “single-event” construal of the situation, which gives an obvious advantage to the reflexive strategy over the compositional strategies. On the other hand, the context of a RECP<sup>S</sup>-oriented predicate effectively counteracts the only functional disadvantage of this strategy, namely, the presence of the additional reflexive meaning: exactly because the corresponding symmetrical events are so common and salient, the RECP<sup>S</sup>-interpretation of a multiple-participant reflexive encoding is likely to be triggered by the lexical context. The major role of these contexts in the rise of reflexive reciprocal constructions is demonstrated by languages where this encoding is conventionalized only for RECP<sup>S</sup>-oriented predicates (cf. also Kemmer 1993: 119–123; Heine and Miyashita this volume).

The RECP<sup>S</sup>-meaning seems to constitute the genuine core of linguistic reciprocity. Cross-linguistically, this is demonstrated by the fact that some languages have reciprocal constructions only for RECP<sup>S</sup>-oriented verbs (it is difficult to estimate the frequency of such languages in a reliable way, since lexical constraints or lack thereof are often not mentioned in descriptive grammars). Preliminary estimates also show that this meaning occurs considerably more frequently in discourse than other reciprocal meanings.<sup>9</sup> Finally, it also appears to constitute the prototype of reciprocity, at least for authors of descriptive grammars, who sometimes provide examples of reciprocal constructions only for RECP<sup>S</sup>-oriented verbs. Although this practice often leaves the reader ignorant of the actual productivity of reciprocal constructions, it can also be viewed as an indi-

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9. Since these frequencies are highly likely to vary depending on the topic being discussed and speech register, and can also differ from one language to another, no reliable figures can be given at this point.

rect confirmation of the universally higher discourse frequency of this meaning. This suggests that an encoding strategy whose semantic range encompasses the  $\text{RECP}^{\text{S}}$ -meaning will generally achieve a considerably higher discourse frequency than a strategy that does not allow for a “single-event” construal.<sup>10</sup>

An important point here is that symmetry does not entail unarity, i.e. an appropriate strategy need not, strictly speaking, be unary. On the contrary, the very concept of symmetry is inherently linked to binary predicates, and can hardly be adequately applied to unary ones.<sup>11</sup> However, monoclausal binary reciprocal constructions of the type exemplified in (9), which would mirror the binary valence frame of symmetric predicates, are extremely rare cross-linguistically. Moreover,  $\text{RECP}^{\text{S}}$ -verbs commonly (if not invariably) have unary reciprocal valence frame, where participants referred to in the primary slot have to be interpreted as interacting with each other in the way signified by the verb (as in *They fought*). Furthermore, the unary valence frame can signify reciprocity with some  $\text{RECP}^{\text{S}}$ -oriented verbs (as illustrated for the verb *kiss* above). An obvious functional advantage of the unary valence frame is its suitability for encoding single reciprocal-like multiple-participant events (e.g. brawls or discussions), that is, in effect, to express  $\text{RECP}^{\text{S}}$  and  $\text{RECP}^{\approx}$  simultaneously (as in [25]). Apart from this, it also allows for encoding of both participants of a symmetric event by a single NP, as opposed to two distinct references required by the binary frame.

The unary valence frame associated with  $\text{RECP}^{\text{S}}$ -predicates constitutes a possible alternative to the reflexive origin of reciprocity as an explanation of the cross-linguistic predominance of unary reciprocal constructions. However, this class of constructions, i.e. unary (detransitivized) variants of binary predicates,

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10. This approach may seem to be in an irreconcilable contradiction with the notion of the cross-linguistically valid categorial distinction between “reciprocity proper” and “natural reciprocity” (see Kemmer 1993: 94–123 for an elaborate argumentation in favour of this distinction). However, as Ecclesiastes would have probably put it, there is a time to draw distinctions and a time to acknowledge affinities, and this is true not only for linguists answering different questions, but also for languages at different periods of developing reciprocity as a linguistic category. I contend that the single-event reciprocity plays a pivotal role at the initial stages of this process; it also has a palpable cross-linguistic tendency to split from “reciprocity proper” by virtue of further processes of grammaticalization and lexicalization after this category has been established. There is no real contradiction between these statements.

11. Notably, it is the discontinuous counterparts of unary reciprocal constructions (see Note 1), i.e. the closest cross-linguistically recurrent near-equivalent of monoclausal binary reciprocal constructions that is likely to be associated with the  $\text{RECP}^{\text{S}}$  interpretation (cf. Dimitriadis 2004, this volume).

is also characterized cross-linguistically by the reciprocal/reflexive ambiguity, which is usually resolved by the lexical context (cf. *They kissed* vs. *They shaved*). Accordingly, a lexical extension of this structure to subsume other predicates, if possible, must involve the rise of disambiguating reciprocal expressions, i.e. exactly the same process of “extracting” the reciprocal semantic structure from an ambiguous grammatical structure as outlined above for reflexive-based constructions. In other words, such a process can be viewed not as an alternative to the hypothesized reflexive-to-reciprocal development, but rather as a specific version of the same process, just as detransitivisation without overt reflexive marking can be viewed as a kind of reflexive construction (see Section 2.1).

### 3.5. Summary

Assuming that the likelihood of a non-conventionalized encoding strategy being conventionalized depends on its discourse frequency, it can be hypothesized that the apparently rather low probability of compositional reciprocal strategies turning into grammaticalized reciprocal constructions is determined, possibly among other factors, simply by a relatively low discourse frequency of the corresponding specific reciprocal meanings. As it seems, reciprocity is expressed frequently only with a relatively narrow class of RECP<sup>S</sup>-oriented predicates. To put it the other way round, single-event reciprocity seems to be by far the most frequent and cross-linguistically most significant reciprocal meaning. If that is true, a reciprocal encoding strategy is likely to achieve a discourse frequency sufficient to trigger grammaticalization processes only if it is employed to encode the RECP<sup>S</sup> reciprocity, possibly but not necessarily along with other reciprocal meanings. Yet exactly this class of meanings is scarcely compatible with compositional strategies, whereas the disadvantages of a reflexive strategy are effectively neutralized by the lexical context of RECP<sup>S</sup>-oriented predicates. Consequently, grammaticalized reciprocity is more likely to originate from multiple-participant reflexivity than from a compositional reciprocal strategy; once it is conventionalized as a reciprocal encoding strategy in some contexts and its reciprocal meaning is thus established, it can replace the compositional strategies in other contexts.<sup>12</sup>

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12. It can be hypothesized, in fact, that the likelihood of a reflexive strategy being conventionalized in the reciprocal function in a given language can depend on the extent to which the RECP<sup>S</sup>-meaning is integrated into the lexicon: if a language has a rich set of RECP<sup>S</sup>-predicates, then the reflexive strategy of reciprocal encoding would compete with the use of a lexical reciprocal and its discourse frequency is bound to be lower. A possible way to explore this hypothesis, which of course remains absolutely

Whereas the  $\text{RECP}^{\text{S}}$ -meaning is likely to function as the major “trigger” in the rise of conventionalized reciprocal constructions, the other compositionally infelicitous meaning,  $\text{RECP}^{\sim}$ , seems to arise as an accidental side-effect of this process: once a language has conventionalized a single construction subsuming a range of different specific reciprocal meanings, this construction can be recruited for intentionally underspecified descriptions of reciprocal-like complexes of events. However elusive such a distinction may be, in some intuitively obvious sense  $\text{RECP}^{\text{S}}$  corresponds to culturally significant human interactions with equal participants (like *fighting* or *talking*), which exist language-independently and have to be described in one way or another, whereas  $\text{RECP}^{\sim}$  is rather a way to construe several events as a single complex situation, which slightly increases the semantic potential of a language, but is by no means indispensable (as witnessed by languages without conventionalized reciprocal constructions). If a reflexive construction is conventionalized as a reciprocal construction, the resulting strategy of reciprocal encoding comes with the distinctions between specific reciprocal meanings (e.g. between the “strong” and “weak” reciprocity) already neutralized, and thus with the new  $\text{RECP}^{\sim}$  type of descriptions readily available. To borrow from the evolutionary terminological framework, the neutralization of these distinctions is then not an adaptation triggered by a functional need for underspecified descriptions, but rather an exaptation of the reflexive structure. The emergence of the new type of reciprocal meaning can further increase the discourse frequency of reflexive encoding of reciprocity and, accordingly, the likelihood of grammaticalization.

To conclude, I have argued that the multiple-participant reflexive construction is universally available either as a conventionalized way to express reciprocity or as an exploratory strategy of reciprocal encoding. In the latter case, it is a more likely candidate for grammaticalization than compositional strategies of reciprocal encoding, primarily because it is better suited to express single-event reciprocity, but also because the reciprocal aspect of its meaning is less specific than that of any compositional strategy; both factors increase its discourse frequency and therefore the probability of its being grammaticalized. This hypothesis straightforwardly explains the predominant structural unarity of reciprocal constructions, especially if we take into account that the original reflexive marker can be dropped once a disambiguating reciprocal expression is introduced (see Section 3.1). This does not mean, however, that the reflexive origin is the only source of structural unarity of reciprocal constructions. As mentioned in Section 3.2, biclausal reciprocal strategies can also evolve into

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speculative at the present time, is to study lexical reciprocals in languages with binary reciprocal constructions.

unary reciprocal constructions, yet such a development seems to be very rare cross-linguistically. My explanation for the cross-linguistic predominance of unary reciprocal constructions is based on a combination of functional and diachronic factors: on the one hand, a productive unary construction endows a language with certain functional advantages, which constitute, by the same token, the advantages of unary encoding strategies over compositional strategies and binary constructions (Section 3.4). On the other hand, these advantages can play a role in the process of conventionalization and grammaticalization of a reciprocal construction only insofar as a unary strategy is available for reciprocal encoding; in the absence of a unary reciprocal construction, the reflexive encoding strategy is the only candidate for this role. Although a unary reciprocal structure can also emerge in the process of grammaticalization of a compositional strategy (Section 3.2), the multiple-participant reflexive structure has an edge on the competition between available strategies for the role of conventionalized reciprocal construction, since it is unary from the very beginning, encompasses reciprocity as an inherent aspect of its meaning (Section 3.3), and is virtually unambiguous in most frequent lexical contexts (Section 3.4).

#### **4. The Obligatory Reflexive Marking hypothesis**

##### 4.1. An Optimality-Theoretic approach to reciprocal encoding

This section attempts to describe a fragment of the cross-linguistic and language-internal variation in reciprocal encoding by means of an OT-style model of competition between alternative strategies (Prince and Smolensky 1993/2004). In contrast to most applications of Optimality Theory, the proposed model is far from being fully formalized; its purpose is rather to find the universal factors shaping both typological and language-internal variation in the domain under investigation, or, to put it in other words, both the global diachronic tendencies and the individual language-specific choices that ultimately determine these tendencies. In accordance with the OT approach, the model is based on the assumption of a universally available set of reciprocal encoding strategies, which includes the compositional strategies outlined in Section 3, multiple-participant reflexive constructions with and without disambiguating expressions, and non-reflexive unary reciprocal encoding. This assumption may seem to contradict both the available cross-linguistic evidence and the approach adopted in the previous section. This contradiction is resolved by the concept of an “exploratory expression” (Harris and Campbell 1995: 54, 56), or “exploratory strategy”: e.g. if a language has no conventionalized non-reflexive reciprocal construction, a similar expression of reciprocity can be created spontaneously, for in-

stance, by dropping the reflexive marker from a reflexive-based construction or by combining a topicalization construction with a compositional reciprocal strategy. Similarly, a reflexive construction may have been conventionalized for reciprocal encoding in one language and be present only as an exploratory strategy in another. In the OT framework, the degree of conventionalization of an encoding strategy can be construed as one of the dimensions of “markedness” of the resulting expression, along with the more obvious structural factors.

The choice between the options available is determined by universal constraints on reciprocal encoding, which can differ in relative strength from language to language and thus shape the cross-linguistic variation in reciprocal encoding. While a certain constraint may be “invisible” in a specific language, its universal validity manifests itself in the fact that every violation of the constraint must be motivated by the satisfaction of other constraints, which are thereby shown to be stronger in the given language. In what follows, I attempt to show that language-internal and cross-linguistic variation in the use of reflexive markers in reciprocal encoding can be described in terms of an interplay between independently relevant universal constraints. Apart from two rather general universal meta-constraints, which penalize excessive *markedness* and *ambiguity* of the expression, the reciprocal encoding is sensitive to the *Obligatory Reflexive Marking* constraint (ORM), i.e. a universal constraint which requires that any unary construction with a binary predicate be marked as reflexive and, accordingly, penalizes non-reflexive reciprocal constructions. This means, in other words, that any semantic structure linking two variables to a single referential index *is* in effect reflexive. Combined with the fact that languages tend to have a unique and obligatory marker of reflexivity (Faltz 1985), this entails the requirement that a unary reciprocal structure must contain this unique marker. The very existence of this cross-linguistic tendency can be viewed as another manifestation of the ORM constraint.

Although the relative strengths of universal constraints are supposed to be constant for each language, they can be either relevant or irrelevant in a given speech situation, including the particular meaning intended and the disambiguating aspects of the context. Most importantly, a context-determined low likelihood of the reflexive interpretation can favour the reflexive encoding. Accordingly, a language can opt for different strategies of reciprocal encoding depending on the context, especially on the meaning of the main verb, and on the specific meaning to be expressed. For example, in Russian the reflexive encoding of reciprocity is usually described as being limited to a closed class of RECP<sup>S</sup>-oriented predicates, whereas other lexical contexts generally trigger non-reflexive encoding of reciprocity. If the verb belongs to this closed class,

the choice between reflexive and non-reflexive option may reflect a difference between the intended meanings, cf. the following examples:

- (28) Russian
- a. *Oni vstreča-l-i-sj.*  
 They meet-PST-3PL-REFL  
 ‘They used to meet each other.’ or ‘They used to date each other.’
- b. *Oni vstreča-l-i drug drug-a.*  
 They meet-PST-3PL RECP RECP-ACC  
 ‘They used to meet each other.’ or ‘They used to pick each other up.’

The potential ambiguity of reflexive encoding can be thought of as a continuous, probability-like value that is evaluated by the speaker in the individual speech situation, but can strongly depend both on the “real-world” properties of events (insofar as they can increase the likelihood of one or another interpretation) and on the conventions established in the given speech community (in particular, on the relative frequencies of using the given lexical verb with reflexive marking in different meanings). In (28a), for instance, the probability of reflexive interpretation is close to zero in most contexts, so the ambiguity avoidance constraint would play no role in the choice of optimal encoding.

#### 4.2. Markedness vs. ambiguity avoidance

In the case of reciprocal encoding, the interplay between markedness and ambiguity avoidance constraints is most transparent in the competition between reflexive and reflexive-based constructions, since a reflexive-based construction is by definition both less ambiguous and more marked than its ambiguous reflexive counterpart. The cross-linguistic variation in the relative strength of these constraints can best be illustrated by languages where all unary reciprocal constructions require reflexive marking, i.e. the choice is in effect limited to reflexive and reflexive-based encoding. This language type was exemplified in Section 2.4 by West Greenlandic, Wari and Djaru (examples [11], [12], and [15]).

Within this type, languages vary from mandatory (or almost mandatory) use of disambiguating expressions to virtual absence of such expressions. The first endpoint of this scale can be exemplified by Bolivian Quechua, where the reflexive marker is *-ku-*, e.g. *riku-ku-* ‘look at oneself’, and the reciprocal marker is *-na-ku-*, e.g. *riku-na-ku-* ‘look at each other’ (Muysken 1981: 454, 464), which

means that all its reciprocal constructions are reflexive-based.<sup>13</sup> In terms of the present model, this indicates that ambiguity avoidance considerations consistently outweigh markedness considerations, so that the more marked, but unambiguous construction is used independently of the context. A slightly less clear case is found in Telugu, where the reflexive construction can express reciprocity only with a narrow class of verbs of fighting (Krishnamurti and Gwynn 1985: 206–208), whereas the reflexive-based construction with a bipartite reciprocal expression serves as the major strategy of reciprocal encoding.

(29) Telugu (Dravidian; Subbarao and Lalitha 2000: 226)

*waaNnu okaNna-ni okaNnu tiOOu-kon-naa-ru.*  
 They RECP-ACC RECP scold-REFL-PST-3PL  
 ‘They scolded each other.’

In other words, the reflexive construction is used only if the potential ambiguity is resolved by the lexical context and thus the ambiguity avoidance constraint can be satisfied without violating markedness constraints. This situation apparently results from what can be referred to as “lexicalisation of context-based ambiguity evaluations,” which restricts the use of a potentially ambiguous construction to a closed set of RECP<sup>S</sup>-oriented verbs, which strongly support a reciprocal interpretation.

Another type of compromise between ambiguity avoidance and markedness constraints is achieved by languages where reciprocal vs. reflexive interpretation of a reflexive construction is fully determined by the number of subject participants. This type of distribution is described by Aikhenvald (2007) for North-Arawak languages spoken on the Upper Rio Negro (Warekena of Xie, Bare and Baniwa of Içana), e.g.:

(30) Baniwa of Içana (Aikhenvald 2007: 853)

*na-inua-kawa*  
 3PL-kill-INTR/RECP  
 ‘(they) fought’  
*nu-takha-kawa-ka*  
 1SG-cut-INTR/REFL-DECL  
 ‘I cut myself.’

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13. The suffix *-na* without the reflexive marker occurs in so-called “causative reflexives” *rurik-na-chi* ‘make X look at each other’.

The other endpoint of the scale defined by the relative strengths of markedness and ambiguity constraints is represented by languages where all (or almost all) reciprocal clauses are reflexive in spite of their potential ambiguity, i.e. markedness considerations consistently outweigh ambiguity avoidance considerations. This type is apparently represented by West Greenlandic and Wari. However, most languages that require reflexive marking of reciprocal constructions seem to be located somewhere between these two extremes, so that the choice between reflexive and reflexive-based encoding depends on the specific context of a reciprocal utterance.

#### 4.3. The effects of the Obligatory Reflexive Marking constraint

The effects of the ORM constraint are most obvious in the languages where this constraint is never violated, i.e. all unary reciprocal constructions are either reflexive or reflexive-based (Section 4.2). Apart from this, the ORM hypothesis is also supported by languages that do have non-reflexive reciprocal constructions, but nonetheless require reflexive marking in all contexts where it has been conventionalized for reciprocal encoding. This type is represented, for instance, by Bulgarian and most Romance languages. In these languages, reflexive marking is mandatory even if the expression serving as an autonomous reciprocal modifier in other contexts is added to form a reflexive-based construction, e.g.:

##### (31) Bulgarian

- a. *Te se gledat.*  
they REFL/RECP look.at
- b. *Te se gledat edin drug* ‘They are looking at each other.’
- c. \**Te gledat edin drug.*

##### (32) French

- a. *Jean et Marie s’aiment.*
- b. *Jean et Marie s’aiment l’un l’autre.* ‘John and Mary love each other.’
- c. \**Jean et Marie aiment l’un l’autre.*

##### (33) Italian (Belletti 1982: 127)

- a. *Si amano.* ‘They love each other (themselves).’
- b. *Si amano l’un l’altro.* ‘They love each other.’
- c. \**Amano l’un l’altro.*

These examples show that the ORM constraint can outweigh markedness considerations, which would favour a simpler and equally unambiguous encoding option as shown in (31c)–(32c).

There are of course many languages without reflexive or reflexive-based reciprocal constructions, i.e. languages where the hypothesized ORM constraint is invisible. Within the OT-style framework, this simply means that the ORM constraint is outweighed both by the ambiguity avoidance constraint (so that the non-reflexive construction is evaluated as more optimal than the reflexive one) and by the markedness constraints. The latter constraint rules out the reflexive-based encoding, which necessarily involves a combination of two markers instead of one. The assumption that a universal constraint may remain invisible in some languages (an inherent part of an OT-style approach) raises the problem of falsifiability, which remains, in many respects, a controversial issue as far as OT as a general theoretical framework is concerned. In this particular case, however, a language which would falsify the proposed model can be easily imagined: such a language would have a readily available reflexive-based (unambiguous) exploratory expression, which would not be more marked (i.e. formally “heavier”) than the reciprocal marker used in unary constructions. Such an expression, if available, cannot be ruled out by markedness and ambiguity avoidance constraints, and thus must win over the non-reflexive reciprocal due to the ORM constraint. The proposed model predicts, therefore, that such languages do not exist. The available data suggest that this empirical prediction holds; more specifically, the invisibility of the ORM constraint in a specific language appears to imply, cross-linguistically, that the reciprocal marker of this language does not exceed the reflexive marker in structural complexity. For instance, Kolyma Yukaghir has no reflexive or reflexive-based reciprocal constructions. Both reflexivity and reciprocity are encoded by verbal prefixes (e.g. *met-juo-* ‘see oneself’ vs. *n’e-juo-* ‘see one another’); accordingly, any unambiguous reflexive-based construction would necessarily be heavier than the existing non-reflexive construction. If Kolyma Yukaghir had, for instance, a free bipartite reciprocal marker like English, it would falsify the model, since such a marker would be heavier than some readily available reflexive-based expressions (with an adverb or an iterative suffix used for disambiguation). To sum up, whenever the ORM constraint is invisible, it can be shown that an expression which would satisfy this constraint would be either ambiguous or more marked than the non-reflexive reciprocal encoding.

Conversely, if a language does have both reflexive and non-reflexive reciprocal constructions, the former tend to be structurally simpler than the latter. Russian, German, French (and, for that matter, “Standard Average European” in general) are obvious examples. It seems, therefore, that the ORM constraint

outweighs the ambiguity avoidance constraint only in cooperation with some sort of markedness constraint. To put it the other way round, the ambiguity avoidance constraint tends to be stronger than the ORM constraint and cannot be outweighed if markedness considerations play no role. On the other hand, the non-reflexive reciprocal construction need not be unambiguous: in some languages, the reflexive encoding of reciprocity competes with a construction from another polysemy class. For instance, Imbabura Quechua has two conventionalized reciprocal constructions, a reflexive reciprocal construction and a construction ambiguous between reciprocal and collective interpretations:

- (34) Imbabura Quechua (Cole 1982: 91, 92)
- a. *wambra-kuna riku-ri-rka*  
 child-PL see-REFL-PST.3  
 ‘The children saw each other.’ or ‘The children saw themselves.’
- b. *ñukanchi maka-naju-nchi*  
 we hit-RECP/COLL-1PL  
 ‘We hit jointly.’ or ‘We hit each other.’

In cases like these, the ambiguity considerations can probably favour one or another option depending on the context.

To conclude, the cross-linguistic and language-internal variation in reflexive encoding of reciprocity can be accounted for as a result of interplay between several universal factors, which can both compete and cooperate with one another. The first factor is the inherent ambiguity of multiple-participant reflexives, which makes them suitable as “exploratory expressions” of reciprocity in languages where the currently existing reflexive constructions have not been conventionalized in this function, and especially in languages without conventionalized reciprocal constructions. In Section 3, I argued that this factor plays a major role in the rise of reciprocal constructions, which would explain the overwhelming cross-linguistic predominance of unary reciprocal constructions. Secondly, languages tend to have an obligatory reflexive marker, which has to be employed whenever two variables of a binary predicate are linked to a single referential index, in particular, in unary reciprocal constructions. Finally, the rise of unary reciprocity as a grammatical meaning in its own right with its own unambiguous coding means must have been motivated by the combination of ambiguity avoidance considerations and markedness constraints: the former would favour using disambiguating expressions in addition to reflexive marking; the latter, their gradual evolution into autonomous reciprocal markers.

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# Distinguishing reciprocals from reflexives in Kuuk Thaayorre

*Alice Gaby*

## 1. Introduction<sup>1</sup>

### 1.1. Background

The semantic and formal features of reflexive and reciprocal constructions have attracted significant attention in recent years (e.g. papers in Nedjalkov, Geniušienė and Guentcheva 2007; Evans et al. forthcoming; Frajzyngier and Curl 2000a and 2000b; and Langendoen and Magloire 2003). Yet whether the categories labelled “reciprocal” and “reflexive” respectively are cross-linguistically comparable remains an empirical question.

In order to investigate these categories (whether as part of a descriptive, typological or theoretical study), it is necessary to first elucidate exactly what is meant by these terms. We might propose that at the semantic core of the reciprocal category is some notion of symmetry (following König and Kokutani 2006). This can be spelt out along the following lines:

***Core reciprocal:** the Actor of one instantiation of the event is also the Undergoer of another instantiation of the same event ( $A1 = U2$ ) while the Undergoer of the first instantiation is the Actor of the second ( $U1 = A2$ ), as illustrated by Figure 1.*

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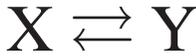


Figure 1.



Figure 2.

Similarly, the following definition of the reflexive category may appear intuitively correct:

**Core reflexive:** *an inwardly directed action; of which a single participant is both Actor and Undergoer ( $A = U$ ), illustrated by Figure 2.*

But is it exactly and only this that is encoded by the so-called “reflexive” and “reciprocal” morphemes in the varied languages of the world?

A cursory inspection of the Thaayorre data would seem to meet expectations of such a mapping from function to form. Specifically, reciprocal semantics as outlined above are typically encoded by constructions containing the verbal suffix *-rr* (cf. [1]), while reflexive semantics are contrastively expressed by constructions containing *-e* (cf. [2]):

- (1) *ngal* *nhaanhath-rr- $\emptyset$*   
 1DU.INCL.NOM/ERG watch.RDP-RECP-NPST  
 ‘We two are looking at each other.’
- (2) *ngay* *nhaanhath-e- $\emptyset$*   
 1SG.NOM/ERG watch.RDP-REFL-NPST  
 ‘I’m looking at myself.’

A more holistic examination of the data, however, reveals that the reflexive and reciprocal categories are, for Kuuk Thaayorre, less clear-cut. The “reciprocal” suffix *-rr* is found in some descriptions of semantically reflexive – or “inwardly directed” – events (cf. [3]), whilst the “reflexive” suffix *-e* marks some semantically reciprocal – or “symmetric” – events (cf. [4]):

- (3) *pam thono tup ko’o-rr-r* *nhanganul watp*  
 man one.NOM IDPH spear-RECP-PST.PFV 3SG.REFL dead  
 ‘One man speared himself dead, whack!’ (Hall 1972: 137)
- (4) *pul* *runc-e-r*  
 2DU.NOM/ERG collide-REFL-PST.PFV  
 ‘They two collided with one other.’

I argue here that this falls out from the fact that the categories “reciprocal” and “reflexive” are not a priori defined, but instead represent a range of alternative

segmentations – by particular languages – of a broader semantic domain (as characterized by Lichtenberk 1985; Geniušienė 1987; Kemmer 1993; Gaby 2001; and others). Within a single language, too, alternative constructions may subcategorize this semantic domain, as Geniušienė (1987) and König and Kokutani (2006) have demonstrated. Correspondingly, the formal apparatus for expressing reciprocity and/or reflexivity in most languages spans a number of semantic subcategories of varying degrees of semantic relatedness (cf. Evans et al. 2002).

For these reasons, the typologist cannot assume a construction labelled “reciprocal” (or “reflexive”) in a particular language to be equivalent to a construction receiving the same label in a second language. While it is likely that there will be some commonality of function, it is also likely that categorial boundaries of the two constructions will differ. It is therefore insufficient to simply identify a “reciprocal” or a “reflexive” morpheme or construction in a particular language. These categories need to be precisely characterized on a language-by-language basis. Only this can be reliable input to cross-linguistic comparison.

This paper represents the first step towards such a typology: an initial exploration of the semantic borders between one language’s nominally “reflexive” and “reciprocal” constructions.

## 1.2. The language and its speakers

Kuuk Thaayorre is a Paman language spoken in and around the community of Pormpuraaw, located on the west coast of Cape York Peninsula. Although around 300 people still use Kuuk Thaayorre in their daily interactions, decreasing transmission to younger generations, coupled with increasing reliance on English for community business, gives the language highly endangered status.

While some of the data reported here was obtained through elicitation (notably employing video stimuli, cf. Evans et al. 2002), much of it was spontaneously uttered in conversation or narrative. Unless otherwise noted, example sentences were recorded by the author during one of three field trips between 2002 and 2004.

## 1.3. Relevant linguistic features

Kuuk Thaayorre is typically Australian in displaying pragmatically (rather than syntactically) determined constituent order, coupled with the free (and frequent) ellipsis of core arguments. Despite this, it is a predominantly dependent-marking language, with the grammatical function of arguments signalled by phrase-final nominal case-suffixes and/or pronominal forms.

Nouns are marked for ergative case, but unmarked when functioning as intransitive subject or direct object. Pronouns, on the other hand, have a marked

accusative case, but are unmarked when functioning as transitive or intransitive subject. Following Goddard (1982), I analyze the Thaayorre case system as tripartite, with homophonous nominative and ergative cases in the pronominal paradigm (glossed as “ERG/NOM”), and nominative/accusative syncretism in the case of nouns (“NOM/ACC”).

Derivational morphemes (such as the reciprocal and reflexive) are suffixed to the verb, preceding TAM suffixes.<sup>2</sup>

## 2. Morphemes and constructions

### 2.1. The reciprocal construction

For clarity of exposition, I will reserve the term “reciprocal” for the domain of morphosyntactic expression. In the semantic domain, I will use the term “symmetric” (as proposed by König and Kokutani 2006) to refer to any event type involving (minimally) two participants in which participant A both acts upon participant B and is acted upon by B,<sup>3</sup> regardless of formal encoding.

In Kuuk Thaayorre, symmetry can be implied (i.e. formally unmarked, as in [5]) or it can be marked by the reciprocal suffix (as in [6]):

- (5) *pul pam.kunyangkar nhang-an-mun kuuk yiik-∅*  
 3DU.NOM brother 3SG.POSS-DAT word.ACC say-NPST  
 ‘He and his brother are talking (to each other).’
- (6) *ngali pam.kunyangkar ngathan-mun nhaanhath-rr-∅*  
 1DU.NOM brother 1SG.POSS-DAT look.RDP-RECP-NPST  
 ‘My brother and I are looking at each other.’

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2. There is some irregularity with respect to the ordering of the reciprocal suffix and the derivational suffixes, such as causative *-(nh)an*. In clauses that combine reflexive and causative morphology, it is always the “inner” affix (i.e. the morpheme closest to the verb root) that applies first, as we might expect from the principles of iconicity (cf. Haiman 1980). The reciprocal suffix, however, appears to both precede and follow the causative suffix without any consequent change in meaning. This topic is explored in more detail in Gaby (2006).

3. Where more than two participants are involved, I will class as “reciprocal” any event in which the majority of participants both act upon, and are acted upon by, other participants. Exactly how the reciprocal semantic prototype should be characterized is an empirical question that is, I believe, yet to be satisfactorily established. The definition given above is, however, a satisfactory heuristic for the purposes of this paper.

The optional “groupwise” enclitic (glossed as ‘GRPW’) is commonly attached to the subject of a reciprocal clause (such as [7]):

- (7) *wakrr*<sup>4</sup>- $\emptyset$       *parr\_r* *ngathan=nharr*  
 fight.RECP-NPST child 1SG.POSS.NOM=GRPW  
 ‘My kids are all fighting.’

The precise function of the groupwise enclitic =*nharr* is unclear at this stage. In addition to marking the subject of a reciprocal clause (as in [7]), this morpheme obligatorily attaches to quantifiers borrowed from English, as seen in (8):

- (8) *nhul*      *three=nharr* *ngat* *catfish*      *kunutha-rr*  
 3SG.ERG three=GRPW fish catfish.ACC catch-PST.PFV  
 ‘She caught three catfish.’

What the two functions seem to share, is that a number of entities are defined with respect to each other, either because there is mutual involvement in the activity described (as in reciprocal clauses such as [7]), or because they are quantified with respect to each other (i.e., the three catfish in [8] are only *three* when considered with respect to each other, not individually). Nevertheless, the exact meaning and distribution of the groupwise enclitic – as opposed to the reciprocal suffix – requires further investigation.

It should finally be noted that the reciprocal-marked verb is often additionally reduplicated. Verbal reduplication is extremely widespread in Kuuk Thaayorre, being used to mark both durative and iterative aspect. There is a particular affinity between iteration and reciprocal events, since the latter typically involve a plurality of subevents and relations. The overlapping distribution of the reciprocal morpheme and verbal reduplication is therefore unsurprising, although each may also occur in the absence of the other.

The Thaayorre reciprocal construction is henceforth defined as any construction containing the suffix *-rr* ‘RECP’. The groupwise enclitic is considered supplementary to this construction, and not of itself definitional of a reciprocal construction.

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4. Although the verb form *wakrr* ‘fight.RECP’ is historically analysable into the verb root *wak* ‘chase/follow’ and the reciprocal suffix *-rr* ‘RECP’, it is synchronically more appropriate to analyze it as a monomorphemic lexical reciprocal meaning ‘fight’. It is unclear whether reciprocity is synchronically entailed by this predicate; all documented cases of its spontaneous use with a non-singular subject do describe symmetric events, but examination of a larger corpus may provide exceptions to this.

## 2.2. The reflexive construction

As symmetric events are to the reciprocal construction, so I distinguish semantically “inwardly directed” events from the formal structure of the reflexive construction. In inwardly directed events, two roles are ascribed to the participant or participant group encoded as subject. These are typically Actor and Undergoer (as in *I washed myself*), but may also be Actor and Recipient (e.g. *I sent myself a letter*), Experiencer and Stimulus (e.g. *I heard myself on the radio*), and so on. In Kuuk Thaayorre, inwardly directed events may be signalled by the presence of the reflexive suffix *-e* ‘REFL’ (cf. [9]); the reflexive pronoun (cf. [10]); or both reflexive suffix and pronoun (cf. [11]).

- (9) *kuta ngith pathath-e-∅*  
 dog.NOM DEM.DIST bite.RDP-REFL-NPST  
 ‘That dog is biting himself.’
- (10) *ngay wash-m rirk-r ngathaney*  
 1SG.NOM wash-VBLZ LVB-PST.PFV 1SG.REFL  
 ‘I washed.’
- (11) *nhangkanunt kar nhaath-e-∅*  
 2SG.REFL like look-REFL-IMP  
 ‘You should look at yourself!’

In some reflexive clauses (e.g. [9]), the verb is reduplicated. The relationship between the semantics of verbal reduplication (i.e. duration, iteration) and the reflexive morpheme is less obvious than that between reduplication and the reciprocal morpheme. The co-occurrence of reflexive morphology and verbal reduplication in a particular clause is most likely incidental; the reflexive marker signalling that the action is inwardly directed, and reduplication independently signalling that the event is repeated (or endures) over time.

The reflexive pronominal paradigm, so far attested only with singular number, is formally related to both personal pronouns (in nominative/ergative case) and possessive pronouns. This is evident in the comparison of the reflexive pronouns in the third column of Table 1 with the combined possessive and (nominative) personal pronouns in the first and second columns respectively:

Table 1. Comparison of personal, possessive and reflexive pronouns.

	Possessive Pro	Nominative Pro	Reflexive Pro
1sg	<i>ngathan</i>	<i>ngay</i>	<i>ngathaney</i>
2sg	<i>nhangkan</i>	<i>nhunt</i>	<i>nhangkanunt</i>
3sg	<i>nhangan</i>	<i>nhul</i>	<i>nhanganut</i>

It would seem that the reflexive pronouns are derived from the compounding of possessive pronoun + nominative pronoun. However, phonological reduction at the (erstwhile) morpheme boundary, coupled with vowel shift in the first person form, suggest that the reflexive pronominal paradigm has most likely been in existence for some time, and that these forms are synchronically monomorphemic, rather than productively derived.

Oftentimes, as in example (9) above, the subject of the verbal reflexive clause is in unmarked nominative case, signalling that the clause is intransitive. Other verbal reflexive clauses, however, contain an ergative-marked subject. This is particularly common where the subject is acting upon a part of themselves, where this part is encoded as an accusative direct object. Such clauses (e.g. [12]) appear to be straightforwardly transitive:

- (12) *pam-al ith koow katp<atp>-e-∅*  
 man-ERG DEM.DIST nose.ACC hold<RDP>-REFL-NPST  
 ‘That man is holding [his] nose.’

It is cross-linguistically common (particularly on the Australian continent) for reflexive and reciprocal clauses to display mixed and/or variable indicators of transitivity (cf. Evans et al. 2007). In Kuuk Thaayorre, there is a strong correlation between explicit reference to the Undergoer (in a separate NP to that representing the Actor) and the ergative-accusative case-frame indicative of transitive clauses. Complicating the analysis of transitivity somewhat, are verbal reflexive clauses containing two unmarked arguments. Such clauses (illustrated by [13], presented with two alternative glosses) arise from the differing patterns of case syncretism in the pronominal paradigm (in which the distinction between nominative and ergative is collapsed) as opposed to nominals (for which both nominative and accusative cases are unmarked).

- (13) *ngay punth inh yak-e-r*  
 1SG.ERG arm.ACC DEM.SPRX cut-REFL-PST.PFV  
 ‘I cut myself on the arm.’

There are two possible analyses of such clauses. Firstly, they might be analyzed as instances of the transitive reflexive construction, containing an unmarked ergative subject argument (in this case, *ngay* ‘I’) and an unmarked accusative direct object (in this case *punth inh* ‘this arm’). Secondly, the two noun phrases could be analysed as forming a single argument through same-case (nominative) apposition. The apposition of noun phrases representing Part and Whole of a single entity is common in Kuuk Thaayorre (as discussed extensively in Gaby 2006), but there is a crucial difference between the representation of Part and

Whole in reflexive clauses such as (13), and an argument composed of Part and Whole NPs apposed in the same case. In an appositional construction, the same relationship obtains between the predicate and both Part and Whole. That is to say, the predicate has scope over the Whole referent inasmuch as the involved Part is taken to stand for the Whole (hence the Part cannot be affected or agentive without the Whole also being affected or agentive by implication). Accordingly, in (14) the dog enters the jar inasmuch as its head does:

- (14) *kuta nhul paant glass-ak rok-r*  
 dog.NOM 3SG.NOM head.NOM glass-DAT enter-PST.PFV  
 ‘The dog put his head into the jar.’

In reflexive clauses such as (13) above, however, the Whole referent plays a very different role to the Part argument. Indeed, the Whole (as Actor) acts upon the Part (as Undergoer). Clauses (13) are accordingly analyzed as transitive, with the Whole subject in unmarked Ergative case and the Part object in unmarked accusative case. There thus is quite a neat correspondence between ergative subject marking in reflexive clauses with two overt arguments (representing Whole and Part of a single entity – as in [12] above) and nominative subject non-marking in reflexive clauses with a single overt argument (as in [9’]):

- (9’) *kuta ngith path<ath>-e-ø*  
 dog.NOM DEM.DIST bite<RDP>-REFL-NPST  
 ‘That dog is biting himself.’

Reflexive constructions in which Whole and Part are distinctly specified are transitive; here the subject referent is conceived of as saliently distinct from the object referent they act upon, whilst their overlapping reference is signalled by the presence of the reflexive suffix. A reflexive construction containing only a single subject argument, however, is syntactically intransitive. Only one entity is involved in the event, but the fact that they are involved in this event in two ways (and therefore assigned two distinct theta roles) is signalled by the reflexive suffix.

### 2.3. Emphatic pronouns

The principal function of the Thaayorre emphatic pronouns is to focus attention on the participant(s) encoded as subject, in contrast with other potential actors. This is exemplified by (15) and (16), the latter being particularly explicit in contrasting the participants represented by both the subject pronoun *peln* ‘3PL.NOM’ and the emphatic pronoun *pelnpelnr* ‘3PL.EMPH’, with the alterna-

tive group of would-be (or, rather, should-be) actants represented by *nhipnhipr* ‘2DU.EMPH’:

- (15) *ngampampr=p thangkangka-rr raak min-im*  
 1PL.EMPH=FOC laugh.RDP-PST.PFV thing good-ABL  
 ‘It was all of us laughing about those good things.’ (Hall 1972: 306)
- (16) *peln=th, pelnpelnr rirk-m, nhipnhipr riic-m*  
 3PL.NOM=FOC 3PL.EMPH LVB-PST.IPFV 2DU.EMPH run-PST.IPFV  
 ‘It was them, they were all working, you two ran off.’ (Hall 1972: 306)

An emphatic pronoun may also be called for in cases where semantic features of the participant encoded as subject make it an unlikely Actor (i.e. contrasting the actual Actor with the type of Actor that might be expected by the addressee). The presence of the emphatic pronoun here rules out any alternative external Actor, and can thus result in the quasi-reflexive interpretation of simple intransitive clauses such as (17).

- (17) *mimp ith nhulnhulr thaariic-r*  
 cloth.NOM DEM.DIST 3SG.EMPH tear-NPST  
 ‘That piece of material is tearing up itself.’<sup>5</sup>

In (17) the speaker describes a video clip of a piece of cloth lying on a table, slowly (and spontaneously) tearing down the middle (Bohnenmeyer et al. 2001). There are no other people or objects present in the frame, so (thanks to the wonders of video technology), the tearing of the cloth is achieved in the complete absence of external causation. This is reflected also by the consultant’s subsequent translation of her Thaayorre response; *that piece of material is tearing up itself*. The same clause minus the emphatic pronoun would be translated as something like: *that piece of material tore*, implying some external Force.

Reciprocal clauses can also be associated with emphatic pronouns for the following reason: the verbs of reciprocal clauses such as (17) are highly transitive, describing actions that typically proceed from an Actor to a highly distinct Undergoer. Since reciprocal clauses pair such verbs with only a single argument, the involvement of additional Actor(s) might be expected.<sup>6</sup> The inclusion of an emphatic pronoun in such clauses, then, rules out this expected involvement of other Actors. In example (18), for instance, the inclusion of the emphatic pro-

5. Double quotation marks are used in the translation line of example sentences to signify that the translation is given in the consultant’s own words.

6. This holds also for the verbs of many reflexive clauses.

noun reinforces the reciprocal interpretation of the clause by stressing that it is just the one group of men who are both questioning and being questioned. The potential involvement of other unmentioned participants is ruled out by *pelpelr* ‘themselves’.

- (18) *pelpelr=nharr rangkank-rr-nam pam*  
 3PL.EMPH=GRPW question.RDP-RECP-PST.IPFV man.NOM  
*ith*  
 DEM.DIST

‘Those men were questioning each other they were.’ (Hall 1972:107)

The three emphatic pronominal forms collected to date are presented in Table 2. Like the reflexive pronouns, these clearly resemble the nominative forms of the respective personal pronouns. In this case, though, it seems that the emphatic pronoun forms were derived via reduplication of the personal pronoun plus suffixation of *-r* (origin unknown). Again, though, the process of derivation most likely occurred some time ago, as some phonological reduction is evident.

Table 2. Comparison of personal and emphatic pronouns.

	Nominative Pro	Emphatic pronoun
3sg	<i>nhul</i>	<i>nhulnhulr</i>
3pl	<i>peln</i>	<i>pelpelr ~ pelnpelnr</i>
1pl.INCL	<i>ngamp</i>	<i>ngampamp</i>

### 3. Distinguishing reciprocals from reflexives

Having established the basic morphosyntax of reciprocal and reflexive constructions, Section 3 now moves to consider their respective semantic/functional ranges. It has been hitherto assumed that the semantics of the two constructions are clear, consistent and distinct. Such an assumption is bred by the formal and semantic contrast between clauses such as (1) and (2) above, and (19) and (20) here:

- (19) *ngali muul-thurr werk-rr-r*  
 1DU.EXCL.NOM/ERG white.ochre-INST rub-RECP-PST.PFV  
 ‘We two painted each other with white ochre.’
- (20) *ngali muul-thurr werk-e-r*  
 1DU.EXCL.NOM/ERG white.ochre-INST rub-REFL-PST.PFV  
 ‘We two painted ourselves with white ochre.’

In such pairs, the contrast between the formal structure of reciprocal and reflexive clauses (in particular, the suffixes *-rr* ‘RECP’ and *-e* ‘REFL’) correlates neatly with the semantic contrast between symmetric and inwardly directed events respectively. It is not always so straightforward, however. Section 3.1 presents a range of inwardly directed events marked by the reciprocal suffix, while Section 3.2 presents some symmetric events marked by the reflexive suffix.

### 3.1. Inwardly directed events marked by reciprocal morphology

It is difficult to imagine a more clearly inwardly directed event than that described by (3) (or indeed [21]):

- (3') *pam thono tup ko'o-rr-r nhanganul watp*  
 man one.NOM IDPH spear-RECP-PST.PFV 3SG.REFL dead  
 ‘One man speared himself dead, whack!’ (Hall 1972: 137)
- (21) *paanth-u thamr nhanganul thiik-rr-r*  
 woman-ERG foot.ACC 3SG.REFL break-RECP-PST.PFV  
 ‘The woman broke her own feet.’

In (3) (repeated above), an action that would typically be directed towards another individual (i.e. ‘spearing’) is instead directed towards the subject himself. In (21) the subject directs a typically object-directed action towards a part of her own body. Yet both events are described by reciprocal-marked verbs.

Examples (22)–(25) similarly employ reciprocal morphology, despite there being no implication of symmetry in the event. To the contrary, in each the subject’s actions are orientated towards or reflect back upon themselves (as entailed by the inclusion of reflexive pronouns in [22] – [24]):

- (22) *ngamp yirryirram nhanganul kunanpun-rr-nan*  
 1PL.INCL.NOM each 3SG.REFL report-RECP-GO&.NPST  
*nhangun*  
 3SG.DAT  
 ‘We each will give an account of ourselves to Him.’ (Hall 1972:392)
- (23) *nhunt riiran nhangkanunt kaar=p kunk*  
 2SG.NOM alone 2SG.REFL NEG=FOC alive  
*than-an-rr-nancnh*  
 stand-CAUS-RECP-GO&.SBJV  
 ‘You can’t rescue yourself all alone.’ (Hall 1972:392)

- (24) *ngay ngathaney mungk-an-rr-r merrethen*  
 1SG.ERG 1SG.REFL consume-CAUS-RECP-PST.PFV medicine.ACC  
 ‘I made myself swallow the medicine.’ (Hall 1972:392)
- (25) *nhunt koorrkorr thaat pirk-rr-ϕ ngathun*  
 2SG.NOM behind.RDP wide push-RECP-IMP 1SG.DAT  
 ‘Move to one side for me.’

In none of these examples is it immediately obvious why reciprocal morphology is used to encode such events normally associated with reflexive constructions.

### 3.2. Symmetric events marked by reflexive morphology

Conversely, (4) (repeated below) and (26) – both elicited by video stimuli (van Staden et al. 2001) – exemplify the use of reflexive morphology to encode seemingly symmetric events. Note that it is the second clause of (26) (describing the back-to-back position of the storytellers) that is reflexive-marked.

- (4') *pul runc-e-r*  
 2DU.NOM collide-REFL-PST.PFV  
 ‘They two collided with one other.’
- (26) *pul kuthip mi'im-r; mut\_thongkan*  
 3DU.ERG story.ACC tell-PST.PFV back.ACC  
*reerek-e-ϕ*  
 give.RDP-REFL-NPST  
 ‘They two were telling stories, standing back-to-back.’  
 (“They give one another their back.”)

The video clip described in example (4) shows a man walking towards a stationary woman, colliding with her as he passes. Example (26) describes a video clip of two men standing back to back (facing opposite directions), both of whom are talking and gesticulating. Neither of these are obvious instances of an actor directing their action towards themselves. Rather, the two events share more with typically “reciprocal” scenes. This is true also of the following:

- (27) *pul mut-u thaa.yooyongk-e-ϕ*  
 3DU.NOM back-DAT lean.RDP-REFL-NPST  
 ‘They are leaning (on each other) back to back.’

- (28) *peln korpn nhaanhath-e- $\phi$*   
 3PL.ERG louse.ACC look.RDP-REFL-NPST  
 ‘They are checking (each other) for lice.’<sup>7</sup>
- (29) *pul nhaanhath-e- $\phi$*   
 3DU.NOM look.RDP-REFL-NPST  
 ‘They are looking at each other.’

Interestingly, most clauses in which a symmetric event receives reflexive coding involve only two participants. This is not a necessary condition, however, as (28) shows. Crucially, though, in none of these examples does a single participant direct their own actions towards themselves, as we would expect of a reflexive-marked clause.

#### 4. Refining the definitions

The examples discussed in Section 3 make it clear that the semantic characterizations of reciprocity (or “symmetric” events) and reflexivity (or “inwardly directed” events) offered in Section 1.1 are inadequate to account for the full range of Thaayorre data. With a view to providing such an account, the present section explores the semantics and functional ranges of the relevant morphemes in more detail. Section 4.2 identifies four senses encoded by the reciprocal suffix, while Section 4.3 identifies five senses encoded by the reflexive suffix. Although I assume these senses to be etically distinct, I make no claims here as to whether the reciprocal and reflexive morphemes are polysemous or vague in encoding them. This chapter merely aims to more precisely locate the semantic boundaries of the two morphemes within a broader semantic space. The etic senses of which this space is composed are identified through the cross-linguistic examination of semantically related categories (e.g. by Lichtenberk 1985; Geniušienė 1987; Kemmer 1993; and Gaby 2001), with each sense being formally distinguished from the others in at least some languages. This substantialist approach (Lindstedt 2001) follows in the tradition of Dahl (1985, 2000 and elsewhere) and Bybee’s (1988) investigation of tense, aspect and mood categories in the languages of the world.

Before delving into the semantics of reciprocal and reflexive verbal suffixes (in Section 4.2 and Section 4.3 respectively), Section 4.1 is concerned with the

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7. This utterance was prompted by a video clip of three people sitting one in front of the other, such that A checks B’s hair for lice and B checks C’s hair. A’s hair is not checked, and C does not check anyone’s hair.

exact function of the reflexive pronoun. This is particularly important given its presence in both reflexive-marked and reciprocal-marked clauses.

#### 4.1. Reflexive pronoun

It was noted in Section 2.2 that reflexive pronouns may occur in either the presence or absence of the reflexive suffix *-e*. Further, Section 3.1 presented several cases of the reflexive pronoun combining with the reciprocal suffix (examples [3] and [22]–[24]). In each of these instances, we may assume that the reflexive pronoun is not redundant, but expresses some meaning that contributes to the interpretation of the construction as a whole. This core meaning that remains constant through all uses of the reflexive pronoun can be summarized as in (30):

- (30) **Reflected action** – *the Actor is affected by their own actions*

This characterisation holds across all uses of the reflexive pronoun. For instance, clauses expressing “oblique reflexivity” (i.e. where some oblique role – such as Beneficiary, Location, Source, etc. – is ascribed to the subject participant in addition to the Actor role) are not marked by the reflexive suffix (since the subject participant is not an Undergoer), but are almost always marked by the reflexive pronoun. This makes sense, since although the subject participant does not take on an Undergoer role *per se*, they are affected by their actions, either to their benefit (as in [31]) or detriment (as in [32]):

- (31) *ngay ngok mi'irr ngathaney*  
 1SG.ERG water.ACC pick.up.PST.PFV 1SG.REFL  
 ‘I got myself some water.’
- (32) *plate ulp nhanganul thiika-rr*  
 plate.ACC DEM.APRX 3SG.REFL break-PST.PFV  
 “That kid broke his own plate.”

The reflexive pronoun is also found in most cases where an inwardly directed event receives reciprocal marking (e.g. examples [3] and [22] to [24]). The semantic contribution of the reciprocal suffix to such clauses will be explored in Section 4.2. It is clear, though, that the reflexive pronoun here clarifies that the subject/Actor is affected by their own action, as opposed to being affected by a participant they are reciprocally acting upon.

This section has shown that a monosemous definition of the reflexive pronoun (as given in [30]) is adequate to account for all instances of its use. The reflexive

pronoun thus makes a clear, and often pivotal, contribution to any clause that contains it.

#### 4.2. *-rr* ‘RECP’ and associated senses

The various functions of the reciprocal suffix are less easily unified than those of the reflexive pronoun. In contrast, I argue, *-rr* ‘RECP’ spans several clearly distinct functions. Each of these functions will be explored in turn in the following subsections. To avoid confusion *-rr* will be glossed simply as ‘RECP’ in all example sentences.

##### 4.2.1. *Core reciprocal*

*The Actor of one instantiation of the event is also the Undergoer of another instantiation of the same event type (i.e. A1 = U2) while the Undergoer of the first instantiation is the Actor of the second (U1 = A2).*

Firstly, *-rr* can encode what I term the “core reciprocal”; the type of reciprocal most typically associated with symmetric events. This is illustrated by examples (1) and (19) above, and is considered too straightforward to require further discussion.

##### 4.2.2. *Co-participation*

*Participants act with respect to one another.*

The second sense with which *-rr* may be used I term “co-participation”.<sup>8</sup> This entails a number of actants participating in the same event alongside one another. Further, for an event to be classified “co-participatory”, the action of each participant must be orientated with respect to the other participant(s); there must be *mutual engagement* in the activity, not a series of independent actions. The involvement of multiple Actors is not incidental, but affects the very nature of the event. This can be seen in (33), an event-type characterized as “naturally reciprocal” by Kemmer (1993: 18):

- (33) *ngamp*                    *pungk.ko'o-rr-nan*  
 1PL.INCL.NOM gather-RECP-GO&.NPST  
 ‘We’ll all meet up.’

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8. In previous versions of this paper, and elsewhere, I labelled this reciprocal subsense “coparticipatory”. Given its strong similarity to the “co-participation” construction described by Creissels and Nougquier-Voisin (this volume), however, I have chosen to adopt their terminology in order to avoid the unnecessary proliferation of terminology.

It is not felicitous to utter (33) of a group of participants acting independently (at different times, directions and/or places). Rather, their actions must be carefully coordinated in order to have their paths coincide; this results from each orientating themselves with respect to the others.

Creissels and Nouguiet-Voisin (this volume) discuss a very similar “co-participation” construction in Wolof. They identify three subtypes of co-participation (“unspecified co-participation”, “parallel co-participation”, and “reciprocal co-participation”). Thaayorre clauses such as (33) above might best be characterized as parallel co-participation, given that “two or more participants share the same role” (Creissels and Nouguiet-Voisin this volume: 292). Other Thaayorre clauses better approximate unspecified co-participation, which involves “two or more participants that may assume distinct roles, but the construction by itself leaves open the precise role assumed by some of them, and role recognition crucially relies on lexical and/or pragmatic factors” (Creissels and Nouguiet-Voisin this volume: 292). This is evident in the following Thaayorre example:

- (34) *pul*            *yoorr* *yith-rr-r*            *iirruw* *rump-un*  
 3DU.NOM today lead-RECP-PST.PFV to.west beach-DAT  
 ‘Those two went together to the beach today.’ (Hall 1972:108)

It is highly unlikely that this pair of Actors would either take turns in leading the other, or would both lead and be led simultaneously. Instead, by choosing to represent the event by means of a reciprocal construction, the speaker asserts that an event of (mutually-orientated) leading occurred between the two participants, but that the precise assignation of roles is unimportant. A crucial component of the Thaayorre co-participation sense that is absent from Creissels and Nouguiet-Voisin’s definitions, however, is the fact that participants must orientate their actions with respect to one another.

#### 4.2.3. *Asymmetric*

*The subject’s involvement in the activity entails the converse involvement of another participant(s) whose role in the event is differentiated from that of the subject.*

The asymmetric sense, like co-participation, entails the mutual orientation of two or more participants. A key difference between the two, is the grammatical function with which the participants are encoded. In intransitive co-participation clauses, all core participants are encoded as subject, whilst in the transitive asymmetric clauses only a subset of participants are represented as subject, while others are encoded as direct object (cf. [35]).

- (35) *pam-al ulp nhunh paanth ulp koorr*  
 man-ERG DEM.APRX 3SG.ACC woman.ACC DEM.APRX behind  
*waak-rr-ø nhul*  
 follow-RECP-NPST 3SG.ERG  
 ‘That man is following along behind that woman.’

The above example sentence was uttered in response to a video clip (Evans et al. 2002) in which a woman was walking down a corridor, repeatedly looking over her shoulder for a man who was clandestinely following her. The crucial point here, is that both the woman being followed and the following man are playing an active role in the event; each continually monitoring the actions of the other. A more straightforward case of unilateral following would most likely be encoded by a straightforward transitive clause involving the underived verb *waak* ‘follow’.

The grammatical encoding of involved participants as separate arguments (as opposed to all key participants being encoded as subject in co-participation clauses) reflects an important semantic difference between the asymmetric and co-participation senses. Namely, participants in asymmetric events are differently involved in that event, adopting mutually dependent but converse roles in a single activity. These distinct roles of the participants are made prominent by their encoding as separate arguments (subject and object), unlike in co-participation clauses where the different roles the participants play are obscured by their representation as part of an unindividuated subject argument.

#### 4.2.4. *Pluractional*

*Event is internally composed of multiple subevents.*

Following Newman (1990), I use the term “pluractional” to label semantic plurality of the event encoded by the verb. The pluractional use of the Thaayorre reciprocal suffix is illustrated by example (22), repeated here:

- (22') *ngamp yiirryirram nhanganul kuanpun-rr-nan*  
 1PL.INCL.NOM each 3SG.REFL report-RECP-GO&.NPST  
*nhangun*  
 3SG.DAT

‘We each will give an account of ourselves to Him.’ (Hall 1972:392)

The event encoded by (22) involves distribution over both participants and subevents. The multiple participants are encoded by the plural pronoun, while the multiple events of reporting are encoded by the pluractional use of reciprocal marking on the verb. The fact that the participants are reporting on themselves

rather than each other (as the reciprocal morphology would suggest), is made clear by the inclusion of the reflexive pronoun. It is particularly interesting that the singular form of the reflexive pronoun is used in (22), in conjunction with the adverb *yirryirram* ‘each’ (or ‘severally’) to refer to a plural number of Actors. A more accurate translation of this clause, then, would be something like ‘we will each of us report on himself to Him’, the individuation of each member of the subject group by the singular reflexive pronoun and *yirryirram* ‘each’ reinforcing the multiplicity of events marked by *-rr*.

It should be noted that similar (iterative and durative) aspectual categories are marked by reflexive/reciprocal morphology in other Australian languages (see Gaby 2001 for further discussion).

#### 4.3. *-e* ‘REFL’ and associated senses

The reflexive suffix spans five distinct senses. The first, “core reflexive” sense can be characterized as follows:

##### 4.3.1. *Core reflexive*

*Inwardly directed action, (each) single participant is both Actor and Undergoer.*

This sense is intended to include cases in which (each) participant acts upon themselves as a whole, as exemplified by (2) and (11) above. As discussed in Section 2.2, events in which a participant acts upon a part of themselves – rather than their whole self – are constructionally distinguished from the core reflexive (these “partitive object” reflexives are discussed further under Section 4.3.2). Clauses like (9) – repeated below – are classified as examples of the core reflexive, even though it is reasonable to assume that the dog is biting a subpart of itself (e.g. its leg) rather than itself as a whole.

- (9') *kuta ngith pathath-e-∅*  
 dog.NOM DEM.DIST bite.RDP-REFL-NPST  
 ‘That dog is biting himself.’

Crucially, though, the event described in (9) is depicted by the speaker as affecting the whole dog as Undergoer. If they had instead specified the leg as the target of biting, the clause would have been classified as an example of the partitive object reflexive sense.

4.3.2. *Partitive object*

*Inwardly directed action, (each) Undergoer is a subpart of the Actor that acts upon it.*

The actions of Whole on Part are semantically distinguished from the core reflexive sense and labelled “partitive object” by Geniušienė (1987) and, following her, Gaby (2001). Example (36) illustrates the Thaayorre partitive object construction, wherein Actor Whole and Undergoer Part are encoded as distinct arguments (subject and object respectively) in a standard transitive clause. The inclusion of the direct object’s reference within that of the subject is signalled only by the reflexive morpheme suffixed to the verb.

- (36) *ngay muth rint-e-φ*  
 ISG.ERG back.of.neck.ACC COOK-REFL-NPST  
 ‘I’m warming my neck (to get rid of a bad dream).’

4.3.3. *Collective reflexive*

*Activity carried out internally to the subject group, at least one member of which is both Actor and Undergoer.*

The third sense with which the reflexive suffix is used, I term “collective reflexive”.<sup>9</sup> Here, two or more participants are engaged in an activity, but their respective roles are underspecified. Whilst this use of the reflexive suffix entails that both Actor and Undergoer roles are ascribed to the group of participants encoded as subject (as is also true of many of the senses associated with *-rr* ‘RECP’), it also entails that at least one of these participants is both Actor and Undergoer of a single subevent. This can be illustrated by example (20), which was used above to illustrate the core reflexive sense. However, the same Thaayorre utterance can also be used in the description of a collective reflexive event, and as such is repeated here:

- (20’) *ngali muul-thurr werk-e-r*  
 IDU.EXCL.NOM/ERG white.ochre-ERG rub-RECP-PST.PFV  
 ‘We two painted each other with white ochre.’

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9. In earlier versions of this paper, as elsewhere, I applied the term “group reflexive” to this sense. However, given its similarity to the collective reflexive construction discussed by Gast and Haas (this volume), I have chosen to re-label this sense in the interests of terminological consistency.

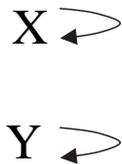


Figure 3.



Figure 4a.



Figure 4b.

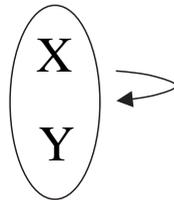


Figure 5.

A strictly core reflexive interpretation of (20) would entail that each participant paints themselves with white ochre (as diagrammatically represented in Figure 3). However, the same clause could be interpreted as collective reflexive, describing an event in which a single person paints both themselves and a second person (Figure 4a) or – equally felicitously – an event where a single person is painted by both themselves and a second person (Figure 4b). It is interesting to note that these latter, collective reflexive senses are better rendered by the English reciprocal construction (as in the translation of [20']) than by the reflexive.

The principal difference between the collective reflexive and a core reflexive clause with plural subject, can be summarized as whether reflexivity is applied to the subject group as a whole (collective reflexive; Figure 5), or to each individual within the subject group (core reflexive, Figure 3). The collective reflexive sense, as schematized in Figure 5, is in fact vague as to the exact relations that may hold between individuals within the subject group. Taking a group of two participants, for example, it is possible that each member of the group both acts and is acted upon (as in the core reflexive, Figure 3), or that just one member acts upon both themselves and the other member (Figure 4a), or that both members act upon just one member of the group (Figure 4b). The number of possible subrelations of course expands geometrically with any increase in the number of group members. Reflexivity thus applied to an entire group, without specifying the exact relationships that hold between members of that group, may well prove a bridging context for the extension of reflexive constructions to encode the reciprocal category, or the reverse (cf. also Heine and Miyashita this volume).

Kuuk Thaayorre is not novel in extending its reflexive construction to encode this collective reflexive category. Gast and Haas (this volume) document numerous examples of collective reflexivity in Germanic and Romance languages, wherein a reflexive relation holds for an entire group, rather than for an individual. This also helps to explain the reflexive coding of examples (4) and (28) above (and revisited under Section 5). In both these examples, two different roles are assigned by the reflexive-marked verb to the non-singular subject. Unlike a core reflexive clause, however, these two roles are not attributed to

each of the participants involved. Rather, there is some vagueness as to which participant plays which role.

There is also some similarity between collective reflexivity and co-participation, as defined by Creissels and Nougier-Voisin (this volume, cf. Section 4.2.2 above). Both of these event types involve a plurality of participants engaged in an event with at least two roles, without assigning particular roles to individuals.

These notions of “collective reflexivity” and “co-participation” will contribute below to an account of why the seemingly symmetric events discussed in Section 3.2 are encoded by the reflexive construction.

#### 4.3.4. *Medio-passive*

*Focus on Undergoer, Actor backgrounded.*

The fourth function of *-e* is to background the Actor participant in order to focus attention on the Undergoer. This is labelled “medio-passive” (following Geniušienė 1987), and is illustrated by the following example:

- (37) (pam kuthirr pilun yongkerr nhangun Jesusak thurma)  
 ‘Two men were hanging [crucified] on either side of Jesus.’  
 nhul Jesus werngka yongk-e-nham  
 3SG.NOM Jesus.NOM middle hang-REFL-PST.IPFV  
 ‘Jesus was hanging in the middle.’ (Hall 1972:137)

The hearer should infer from (37) that an external Actor was responsible for the hanging (as Jesus is unlikely to have hung himself), but that the identity of this Actor is insignificant in comparison to the affect on the Undergoer.

#### 4.3.5. *Deagentive*

*(Elided) Effector is non-existent or irrelevant, focus on the impact on Undergoer.*

Related to the medio-passive, is the deagentive use of the reflexive suffix. Here again, the Undergoer is made prominent at the expense of the Actor. The deagentive sense, however, does not imply the existence of an agentive Actor that is simply too unimportant to be represented as subject. Instead, the effect on the Undergoer is likely either to have been caused by some inanimate Force, or to have spontaneously/accidentally occurred without the involvement of any external Actor or Force, as in (38):

- (38) *minh ith kirk-an runc-e-r*  
 meat.NOM DEM.DIST spear-LOC collide-REFL-PST.PFV  
 ‘Wallaby got speared [by colliding with a spear leaning on a rock].’

### 5. Distinguishing *-rr* from *-e*; revisited

There is significant overlap between the core semantics of the reciprocal and reflexive morphemes. Both describe events in which each participant both acts and is acted upon, and accordingly in both the event primarily impacts upon the participant encoded as subject. What distinguishes them, then, is the fact that each participant encoded as reflexive subject is both Actor and Undergoer of the same subevent, whereas reciprocal subject participants are Actors and Undergoers of different subevents (cf. also Maslova this volume).

The kinds of non-core functions associated with both reciprocal and reflexive morphology tend to involve underspecification of the role-to-participant mapping. They differ in emphasis, however. The employment of the reflexive suffix in the description of accidental events, for instance, can be associated with the more general phenomenon of Actor-backgrounding seen in the medio-passive and deagentive senses (Section 4.3–4.4). Reciprocal morphology instead emphasizes the plurality of subevents and relations between participants.

Having more precisely characterized the senses with which the various reflexive and reciprocal morphemes are used, we may now return to the seemingly problematic examples encountered in Section 3. To begin with, the following were given in Section 3.1 as illustrations of inwardly directed events marked by the reciprocal suffix *-rr*:

- (3') *pam thono tup ko'o-rr-r nhanganul watp*  
 man one.NOM IDPH spear-RECP-PST.PFV 3SG.REFL dead  
 ‘One man speared himself dead, whack!’ (Hall 1972:137)
- (21') *paanth-u thamr nhanganul thiik-rr-r*  
 woman-ERG foot.ACC 3SG.REFL break-RECP-PST.PFV  
 ‘The woman broke her own feet.’
- (24') *ngay ngathaney mungk-an-rr-r merrethen*  
 1SG.ERG 1SG.REFL consume-CAUS-RECP-PST medicine.ACC  
 ‘I made myself swallow the medicine.’ (Hall 1972:392)

As noted earlier in this section, reflexive coding can be used to de-emphasize the Actor and/or agentivity. This is inappropriate for these three clauses, which

all focus on a highly agentive subject. Example (21) describes the highly unusual event of a woman deliberately taking her feet in her hands and breaking them. The more usual scenario of a woman breaking her foot accidentally (e.g. by treading on uneven ground or dropping something heavy on it) would be described either by a reflexive construction (with deagentive sense) or by the intransitive verb *rumparr* ‘break’. The highly marked nature of the scene described, then, is matched by the employ of a marked construction; the reciprocal suffix (linking both Actor and Undergoer roles to the subject) plus reflexive pronoun (entailing that the subject is affected by her own action). The dual use of reciprocal suffix and reflexive pronoun emphasize the agentivity of the participant that is simultaneously Actor and Undergoer, in a situation where an external agent would be expected. Example (24) similarly describes a scene in which the addressee is likely to expect an agent other than the one referred to by the subject pronoun. To describe a typical scene of medicine-taking, the base transitive verb *mungk* ‘eat/drink’ would most likely be used. The expression of force – by means of the causative suffix *-an* – suggests that another participant caused the speaker/subject to ingest the medicine. The fact that in (24) it is the speaker who is (agentively) acting upon himself is thus pragmatically marked, and this is once again signalled by the use of the reciprocal suffix (marking the highly agentive subject that contrasts with the expected agent) coupled with the reflexive pronoun (entailing that it is the speaker who is affected by his own action).

The coupling of reciprocal suffix and reflexive pronoun is also evident in (23) and (22):

(23') *nhunt riiran nhangkanunt kaar=p kunk*  
 2SG.NOM alone 2SG.REFL NEG=FOC alive  
*than-an-rr-nancnh*  
 stand-CAUS-RECP-GO&.SBJV

‘You can’t rescue yourself all alone.’ (Hall 1972:392)

(22') *ngamp yirryirram nhanganul kunanpun-rr-nan*  
 1PL.INCL.NOM each 3SG.REFL report-RECP-GO&.NPST  
*nhangun*  
 3SG.DAT

‘We each will give an account of ourselves to Him.’ (Hall 1972:392)

Like (21) and (24), the reciprocal suffix appears to mark the subject referent of (23) as an unlikely agent. This makes sense, since the very purpose of (23) is to declare the impossibility of coreferent rescuer and rescuee.

It is less clear, however, that the subject referents of (22) are unlikely agents.<sup>10</sup> Instead, the reciprocal suffix here seems to be operating with its pluractional sense, as was discussed in Section 4.2.4.

The final example given in Section 3.1, is most similar to the asymmetric sense of the reciprocal suffix:

- (25') *nhunt koorkorr thaat pirk-rr-ø ngathun*  
 2SG.NOM behind.RDP WIDE push-RECP-IMP 1SG.DAT  
 'Move to one side for me.'

The addressee is, by means of this utterance, asked to move himself with regard to another participant (the speaker). His (requested) action is thus defined with respect to the spatial relationship between the two participants, and carried out to the potential benefit of the speaker. So, although the physicality of the movement is restricted to a single individual, and only that individual is encoded as subject, (25) encodes this movement as a change in the relationship between participants, brought about by an action that is taken with respect to the mutual orientation of these participants. The converse position of the speaker (represented as an oblique object *ngathun* 'for me'), is entailed by the respective position of the addressee. It is this converse relationship that is marked by the reciprocal suffix.

Example (4) was presented in Section 3.2 as an example of reflexive morphology marking a symmetric event:

- (4') *pul runc-e-r*  
 2DU.NOM collide-REFL-PST  
 'They two collided with one other.'

This example combines features of both the collective reflexive and medio-passive senses of *-e*. What these have in common, is the lack of specificity with which the Actor is identified (i.e. Actor-backgrounding). Like collective reflexive events, (4) describes a scene in which one member of the subject group is responsible for an action that affects both members (i.e. causes a collision by walking into the second participant). Like a medio-passive clause, there is no attribution of blame: the focus in (4) is not on the cause of the event, but rather on its effect on the two participants encoded as subject. There is therefore no distinguishing of the individual roles played by participants, and the event is implied to be accidental.

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10. The only feature of the event described in (22) that would make the subject participants unlikely agents, is the fact that "reporting" is most usually an other-directed activity (especially in the missionary context of utterance).

In (26), too, the reflexive morpheme marks the event as being carried out internally to the subject group, implying that the precise assignation of roles to participants within that group is of little importance:

- (26') *pul kuthirr mi'im-r mut\_thongkan*  
 3DU.ERG story.ACC tell-PST.PFV back.NOM/ACC  
*reerek-e-ø*  
 give.RDP-REFL-NPST  
 'They two were telling stories standing back to back.'  
 ('They give one another their back.')

Both examples of reflexive-marked symmetric events share a focus on an event that occurs between two individuals (and which is dependent on their mutual involvement), without distinguishing the respective contributions of the individuals to the event.

The employment of *-e* to mark apparently symmetric events appears to be favoured where three conditions are met: (a) the occurrence of the event depends on each of the participants playing a particular role; (b) there is a blurring of the individual roles played by participants; and (c) there is close contact between the participants. The fulfilment of these three conditions can be seen in example (27):

- (27') *pul mut-u thaa.yooyongk-e-ø*  
 3DU.NOM/ERG back-DAT lean.RDP-REFL-NPST  
 'They are leaning (on each other) back to back.'

If either of the participants was not leaning in the appropriate direction, they would not be able to support each other as described (satisfying condition [a]); there is no distinction made between the roles played by the two participants (condition [b]); and the close physical contact between them (as their backs are touching) satisfies condition (c).

Similarly, the event described by (28) is dependent on the mutual cooperation of participants (both delousers and delousees), the description is vague as to who is removing lice from whom, and there is close physical contact:

- (28') *peln korpn nhaanhath-e-ø*  
 3DU.ERG louse.ACC look.RDP-REFL-NPST  
 'They are checking (each other) for lice.'

Example (29) is slightly different. There is still an emphasis on mutual involvement and close contact, but the blurring of roles is less significant than for (28):

- (29') *pul*            *nhaanhath-e-ø*  
 3DU.NOM look.RDP-REFL-NPST  
 'They are looking (into) each other('s eyes).'
- (39) *pul*            *meer-e*    *nhaath-rr-r*  
 3DU.NOM/ERG eye-ERG look-RECP-PST.PFV  
 'They looked at each other (one after the other).'

If we compare (29) to a reciprocal clause like (39), the crucial difference is the fact that in (29) the two participants look into each other's eyes. This is significant for two reasons. Firstly, making eye contact is dependent upon the mutual cooperation of participants, who must both look in the right place at the right time (condition [a]). Secondly, although they are not in close physical contact, sustaining eye contact over a period of time is quite an intimate act (especially in Thaayorre culture, which favours the avoidance of eye contact in most contexts). The condition of "close contact" is thus also satisfied.

We might ask ourselves how the three conditions proposed here relate to the reflexive coding of a symmetric event. I propose the following hypothesis: these conditions (mutual involvement; blurring of roles; close contact) favour a perspective from which the (plural) participants are viewed as a single homogeneous set, rather than being individualized. This, then, relates back to the "collective reflexive" sense, in which the actions of the participant group as a whole are directed back upon that participant group. In Section 4.3.3, it was suggested that the collective reflexive could be schematized as follows:

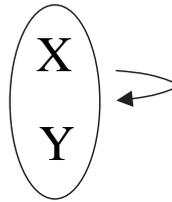


Figure 5.

In light of examples such as (4) and (26)-(29), we might extend this characterization of "group reflexivity" to include cases in which participants act only upon each other (traditionally conceived "reciprocal" events), as follows:

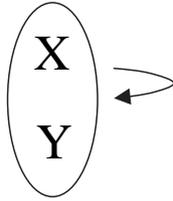


Figure 6a.

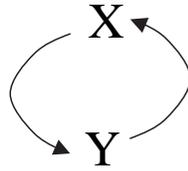


Figure 6b.

## 6. Conclusions

Events traditionally categorized as “reflexive” or “reciprocal” are in Kuuk Thaayorre encoded by two Thaayorre suffixes: the first of which may be used to describe core reciprocal events, but also some inwardly directed events; while the second may be used to describe core reflexive events, but also some symmetric events. This paper has looked beyond the standard glosses “reciprocal” and “reflexive” in order to more precisely identify the semantic composition of the morphemes involved. Detailing the specific “subsenses” encoded by these morphemes (each of which extends into the grey area between the core reflexive and core reciprocal) accounts for apparently anomalous uses of reflexive and reciprocal morphology. But with these myriad event types encoded by just two morphemes, how is the addressee to correctly infer the nature of an event so described? In addition to context (e.g. preceding discourse, background knowledge), a number of morphosyntactic cues reduce or eradicate ambiguity. To begin with, the presence of a reflexive pronoun entails an inwardly directed interpretation, regardless of verbal marking. Hence examples (3) and (22)–(24) in Section 3.1 could not be misinterpreted as describing symmetric events, despite their being marked by the reciprocal suffix.

Reflexive-marked clauses with a singular subject unambiguously describe inwardly directed events, while reciprocal-marked clauses with a singular subject must have an asymmetric interpretation. There is also a strong tendency for reflexive-marked clauses with a dual number subject to describe the mutual, intimate, within-group events discussed under Section 5.

The picture painted here is of a set of interlinked semantic categories that operate across a broader “reflexoid” domain. The grammaticalization of a single morpheme, expanding from a more restricted functional range (e.g. core reflexive alone) to a much broader one (e.g. as a “middle marker” in Kemmer’s 1993 sense), has been well-documented (see, e.g., Geniušienė 1987, Kemmer 1993, Heine and Reh 1984, Lichtenberk 1985, Gaby 2001). What is particularly in-

teresting about the Thaayorre case, then, is its providing us with a rare snapshot of bi-directional semantic extension in this domain. Two distinct morphemes, one encoding the core reciprocal and one the core reflexive, are simultaneously expanding their functional ranges to include more and more semantic categories in the “grey area” between their two poles. Speakers describing events that fall within this grey area (e.g. a highly agentive subject performing an inwardly directed action, or two participants co-contributing to an intimate symmetric event in which their respective roles are unimportant) can choose between the two morphemes according to which features of the event they wish to emphasize. On the one hand, there is a strong (and conservative) association between the reflexive suffix and inwardly directed events, and between the reciprocal suffix and symmetric events. On the other hand, the reciprocal morpheme has come to be associated with plurality of subevents and relations, whilst the reflexive morpheme has come to be associated with the lowering and/or de-emphasizing of agentivity, and the depiction of the subject participant group as a single entity. The polysemy of these two morphemes (coupled with their combinatoric potential with other constructional elements, such as the reflexive pronouns) thus affords the Thaayorre speaker considerable freedom and descriptive subtlety in representing symmetric and inwardly directed events.

These Thaayorre data highlight the danger of applying a simple label to a grammatical or semantic category without articulating its precise functional range. They are thus pertinent to both descriptions of other languages and typological studies of these and other domains, supporting the substantialist approach taken by Dahl (1985), Bybee (1988) and others. The boundaries around categories such as the reciprocal and reflexive are neither typologically universal nor diachronically stable; an event-type coded by the reflexive morpheme of one language may be described by a reciprocal construction in another language. The terms “reciprocal” and “reflexive” must therefore be empirically defined according to language-internal criteria if they are to yield germane results.

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# Valency-changing operations in Wolof and the notion of “co-participation”

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## 1. Introduction

In systems of valency-changing devices, a connection between reciprocity and reflexivity is particularly common. However, the frequency of this situation should not lead to a neglect of systems that do not make the affinity between reciprocity and reflexivity apparent, but treat reciprocity as a special case of a more general notion of “co-participation” (cf. Lichtenberk 2000). This applies in particular to Wolof. In this language, an ancient suffix with a basic meaning of “co-participation” is used to encode reciprocity and also seems to have played a role in the creation of verbal suffixes encoding other changes of valency. The relevance of the Wolof data to the topic of this volume thus comes from the fact that Wolof exhibits a system of verbal derivational extensions which reveals possible connections between reciprocity and other types of valency-changing operations involving the notion of “co-participation”.<sup>1</sup>

Wolof (the most important language of Senegal, spoken also in Gambia and Mauritania) belongs to the Atlantic branch of the Niger-Congo phylum. Like several other Atlantic languages spoken in Senegal, Wolof differs from most languages of Sub-Saharan Africa in not having tone. Its most salient typological features are:

- a relatively rigid *SVOX* constituent order;
- a distinction between subjects and objects (without any distinction between transitive and intransitive subjects) involving contrasts in both constituent order and indexation of arguments in the verb form, but no case contrast;

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1. This paper is based on the analysis of valency-changing operations in Wolof presented in Sylvie Nouguiet-Voisin’s PhD thesis (cf. Nouguiet-Voisin 2002). The analysis we put forward here is an attempt at elaborating and systematizing some hypotheses concerning the possibility of relations between verb suffixes coding distinct valency changes.

- focus marking by means of verbal inflection;
- in comparison to other Atlantic languages (e.g. Fula), a reduced noun class system;
- a complex system of verb suffixes coding valency changes.

In Wolof, the valency changes systematically coded by means of verb suffixes can be classified into six types: middle, causative, applicative, co-participative (including reciprocal), antipassive, and possessive. Those relevant to the questions addressed in this paper are further elaborated in Sections 3 and 4.

This list of valency change types calls for the following remarks:

(i) We call *possessive* a type of valency change systematically coded in Wolof by means of a verbal suffix, whereby an intransitive verb expressing a property attributed to the referent of the subject is converted into a transitive verb attributing the same property to the referent of its object, and assigning to the referent of its subject the role of possessor, as in (1).

(1) Wolof

- a. *Woto bi gaaw na.*  
 car DEF be.fast PRF.3SG  
 ‘The car is fast.’
- b. *Gaaw-le naa woto.*  
 be.fast-POSS PRF.ISG car  
 ‘I have a fast car.’

(ii) Strictly speaking, Wolof does not have passives, and regularly uses constructions combining object topicalization and subject focalization with a function similar to that fulfilled by passive constructions in other languages; however, some uses of the middle marker *-u* can be considered as quasi-passives.

(iii) Wolof has a middle derivation, but does not use it to code reflexivity in the narrowest sense of this term; it uses the noun *bopp* ‘head’ plus a possessive suffix or determiner with the function of a reflexive pronoun (for example, in Wolof, as in many languages, ‘I defended myself’ is expressed literally as ‘I defended my head’).

Our concern here is to analyze a puzzling feature of the coding of valency changes in Wolof: as is shown by the following chart, similar valency changes may be coded by different suffixes in this language, and the same suffix may code different valency changes.

Table 1. Valency changes and possible markers

Type of valency change	Possible markers
middle	<i>-u</i>
causative	<i>-e, -al, -le, -lu, -loo</i>
applicative	<i>-e, -al</i>
co-participative	<i>-e, -oo, -ante, -andoo, -aale</i>
antipassive	<i>-e</i>
possessive	<i>-le</i>

We first note that Wolof does not have a single marker encoding reciprocity, but a group of suffixes, termed “co-participative”, whose uses include various aspects of reciprocity. We also observe that three suffixes (*-e*, *-al*, and *-le*) have a variety of uses: the polysemy of the suffix *-e* is particularly striking. Moreover, only three of the suffixes listed in the table are clearly monomorphemic (*-e*, *-u*, and *-al*). The analysis of each of the other suffixes as being monomorphemic is justified in a strictly synchronic analysis, but we will present evidence that, in a historical perspective, *-le*, *-lu*, *-loo*, *-oo*, *-ante*, *-andoo* and *-aale* should be analyzed as having originated as morphologically complex markers.

We will try to show that several of these markers are related to each other via the notion of “co-participation”, and that the abstract meaning of co-participation interacts with contextual information in a specific way. The discussion presented in the following sections centers on the possibility to find a common semantic motivation underlying the various uses of the suffix *-e*, and to recognize etymological relations between *-e* and some of the other suffixes listed above.

## 2. General remarks on the notion of “co-participation” and the expression of reciprocity

Before presenting the Wolof data, we devote this section to some clarification concerning the notion of “co-participation”, and to a brief presentation of observations on cross-linguistic manifestations of (different types of) co-participation that we consider relevant to the analysis of the Wolof data.

The notion of “co-participation” can conveniently be defined as applying to constructions that imply a plurality of participants in the event they refer to, without assigning them distinct roles. This definition groups together three types of situations, for which we will use the terms *unspecified co-participation*, *parallel co-participation*, and *reciprocal co-participation*.

In constructions with the meaning of unspecified co-participation, an event involves two or more participants that may assume distinct roles, but the construction itself leaves open the precise role assumed by some of them, and role recognition crucially relies on lexical and/or pragmatic factors. Constructions with a meaning of parallel co-participation (typically expressed by *together* in English) imply that two or more participants share the same role, and constructions with a meaning of reciprocal co-participation imply a plurality of participants interacting in such a way that at least some of them assume two distinct roles in their interaction with the others.

Such definitions are necessary, but the linguistic manifestations of the different types of co-participation are not always easy to identify, and shifts are not rare, from one type of co-participation to another, or from co-participation to types of role assignment in which each participant receives a distinct role.

For example, many languages have markers such as English *with*, which is commonly regarded as polysemous, with a comitative meaning and an instrumental meaning, and *comitative* > *instrumental* is a very common diachronic process. The notion of “comitative” is commonly defined in a way that makes it equivalent to our notion of “parallel co-participation”. By contrast, the notion of “instrumental” implies a representation of the event in which each participant explicitly receives a distinct role, and can consequently not be included in co-participation. Moreover, the notion of “parallel co-participation” is too restricted to cover the variety of non-instrumental uses of *with*. For example, *John came with Peter* can indistinctly refer to situations that could be described in a more precise way by sentences such as *John and Peter came together*, *John came and brought Peter with him*, or *John came in the car driven by Peter*.

In order to account for the variation in the interpretation assigned to a given marker depending on the contexts in which it occurs, we will make a distinction between (i) the *abstract meaning* of a marker, and (ii) the *default interpretation* assigned to this marker in contexts that do not force a particular interpretation.

For example, a possible treatment of the polysemy of English *with* is that this preposition has unspecified co-participation as its abstract meaning, and parallel co-participation as its default interpretation. This definition of the meaning of *with* leaves open the possibility that contextual and/or pragmatic factors force interpretations of *with* in which the noun phrase introduced by *with* represents a participant whose role is more or less distinct from those assumed by the other participants. For example, *A came with B* says nothing about the precise way the entity represented by the term *B* participates in the event. In the absence of any other indication, the default interpretation will therefore be that A and B came together. The construction itself, however, does not necessarily imply a meaning of parallel co-participation, even when A and B represent entities

of the same type (as in *John came with Peter*). And in sentences in which A and B are necessarily assigned distinct semantic roles, such as *Mary came with her baby* (= *Mary brought her baby*) and *Mary came with her bicycle* (= *Mary used her bicycle to come*), it seems reasonable to posit that the difference in the interpretation is determined by the types of entities denoted by the nominal terms of a construction whose abstract meaning is unspecified co-participation.

In this perspective, the diachronic shift *comitative* > *instrumental* is analyzed as involving both the loss of the default interpretation of parallel co-participation, and the semanticization (or conventionalization)<sup>2</sup> of a contextually determined interpretation. This analysis is confirmed by the fact that, cross-linguistically, the use of comitative markers to code participants with specific roles recoverable from the context, and the tendency to semanticize such uses, are not limited to the expression of an instrumental meaning: some languages use comitative markers to retrieve the demoted subject in passive constructions, and the homonymy between causative markers and comitative markers observed in some languages (e.g., in the Mande language Soso)<sup>3</sup> can be viewed as a piece of evidence showing that a possible origin of causative constructions is the conventionalization of a particular use of constructions whose original meaning was unspecified co-participation.

It is also interesting to mention at this point some observations on verbal derivations currently identified as “reciprocal” in descriptive grammars: derived verb forms used most commonly in a way compatible with the notion of reciprocity often have also more or less marginal uses that cannot be described as reciprocal. Such “reciprocal” verb forms clearly have reciprocity as their default meaning, but can also be used with a meaning of unspecified or parallel co-participation in contexts that exclude a reciprocal interpretation.

Turkish grammars, for example, usually designate the verbal suffix *-(I)ş* as a “reciprocal suffix”, and define its meaning as indicating a reciprocal or mutual action. For example, this suffix has a reciprocal interpretation in *bak-ış* ‘look at one another’, but with verbs whose argument structure excludes reciprocity, the same suffix indicates parallel co-participation: *koşuş* ‘run together’, *gülüş* ‘laugh together’, etc.

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2. We use the term “semanticization” in the sense defined in Hopper and Traugott (1993: 83–85).

3. In this language, *A ra-faa B* ‘A brought B (= made B come)’, with the causative prefix *ra-* attached to the verb *faa* ‘come’, is synchronically distinct from *A faa B ra* ‘A came with B’, with the comitative postposition *ra* taking B as its complement, but diachronically, these two constructions seem to originate from two different arrangements of the same morphological material.

Another case in point is Tswana.<sup>4</sup> The Tswana verbs derived by means of a suffix *-an* are commonly termed “reciprocal”, and this designation is justified by the fact that, most of the time, they unambiguously convey a reciprocal meaning. But verbs derived by means of *-an* can also be encountered in contexts in which speakers unambiguously interpret them as non-reciprocal. For example, the only possible meaning of *bopag-an-a* (< *bopega* ‘take shape’; *-a* is an inflectional suffix) is ‘fuse together’, and *gan-an-a* (< *gana* ‘refuse’) is commonly interpreted as ‘disobey’. Considering the pair of examples in (2), a reciprocal interpretation of (2a) is not excluded, but this sentence is commonly understood as synonymous with (2b), in which the underived form of *batla* ‘look for’ combines with *lepodisi* ‘policeman’ in the role of subject, and *legodu* ‘thief’ in the role of object.

## (2) Tswana

- a. *lepodisi le batlana le legodu*  
 5.policeman SM3:5 look.for.RECP with 5.thief  
 abstract meaning: ‘*The policeman* and *the thief* refer to two persons participating in an event lexicalized as *look for*’, preferred interpretation: ‘The policeman is looking for the thief.’
- b. *lepodisi le batla legodu*  
 5.policeman SM3:5 look.for 5.thief  
 ‘The policeman is looking for the thief.’

Such observations can easily be accounted for by positing that:

- (a) reciprocity is the default interpretation of Tswana reciprocal verbs;
- (b) the reciprocal interpretation of Tswana reciprocal verbs can be cancelled by the lexical meaning of the verb, or by pragmatic factors;
- (c) the cancellation of the default interpretation of reciprocity results in activating an instruction to go back to the more abstract meaning of co-participation, and to construct an interpretation compatible with the factors that have led to the cancellation of the default meaning.

For example, a reciprocal interpretation of *bopagana* ‘fuse’ is excluded, since *bopega* ‘take shape’ has only one semantic role to assign, but a meaning of parallel co-participation (*take shape together* → *fuse*) is easy to imagine.

In the case of *ganana* ‘disobey’ < *gana* ‘refuse’, a reciprocal interpretation is not totally excluded, but it is proposals that are usually refused, or things, not persons. This makes a reciprocal interpretation unlikely in such cases.

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4. Similar facts have been pointed out for other Bantu languages (cf. Ndayiragiye 2003, Maslova 2007).

Finally, in the case of *batlana* a reciprocal interpretation is, in principle, perfectly possible, and what suggests to cancel it here is that policemen usually look for thieves, while thieves, as a rule, rather try to avoid policemen.

In Tswana, the interpretation of the reciprocal form of transitive verbs in a construction including a comitative adjunct seems to proceed as follows: the subject is assigned the same semantic role as in the transitive construction of the corresponding non-derived verb, and the recognition of the precise way the referent of the subject interacts with the participant represented by the comitative adjunct relies on lexical, contextual and pragmatic factors, the reciprocal interpretation being only the default interpretation. The example of *batlana* shows that interpretations of reciprocal verbs in which a comitative adjunct is assigned the same semantic role as the object of the corresponding non-derived verb are not excluded. This results in uses of the reciprocal derivation of Tswana that are not too different from those considered typical of antipassive derivations: the only difference between (2a) and a typical antipassive construction is that the antipassive interpretation of (2a) does not entirely rely on the presence of a particular marker: it is the consequence of a combination of morphological, syntactic and pragmatic factors.

### 3. Valency changes coded by the suffix *-e* in Wolof

#### 3.1. Causative *-e*

The causative use of the suffix *-e* is limited to a handful of intransitive verbs, for example *génn* ‘go out’ > *génn-e* ‘take out’:

#### (3) Wolof

- a. *génn na ci diggu kër*  
 go.out PRE.SBJ.3SG LOC yard  
 ‘He/she went out in the yard.’
- b. *génn-e na guro yu sànkàr yépp*  
 go.out-CAUS PRE.SBJ.3SG cola.nut LNK be.with.worms all  
 ‘He/she took out all the cola nuts that had worms.’

A productive way of deriving causative forms from intransitive verbs in Wolof is to add *-al* (limited to intransitive verbs, and implying a direct involvement

of the causer in the event caused) or *-loo* (compatible with both transitive and intransitive verbs, and carrying a meaning of indirect causation).<sup>5</sup>

### 3.2. Applicative *-e*

In its applicative use, the suffix *-e* licenses objects with a semantic role of instrument, manner, or location. The other applicative suffix *-al* is used to license objects with a semantic role of recipient, beneficiary, or companion.<sup>6</sup> (4) illustrates the instrumental use of applicative *-e*, and (5) illustrates the comitative use of *-al*.<sup>7</sup>

(4) Wolof

- a. *añ nañu ak ceebu jën*  
 lunch PRF.SBJ.3PL with rice.CSTR fish  
 ‘They lunched with fish and rice.’
- b. *ceebe jën lañu añ-e*  
 rice.CSTR fish FOC.SBJ.3PL lunch-APPL  
 ‘It is fish and rice that they had for lunch.’

(5) Wolof

- a. *mu séy ak doomu nijaayam*  
 3SG.SBJ get.married with child.CSTR uncle.3SG  
 ‘He married his cousin.’
- b. *doomu nijaayam la séy-al*  
 child.CSTR uncle.3SG FOC.SBJ.3SG get.married-APPL  
 ‘It is his cousin that he married.’

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5. The difference in meaning between *-al* and *-oo* can be illustrated by minimal pairs such as *toog* ‘sit (down)’ → *togg-loo* ‘invite to sit down’ / *toog-al* ‘make sit down, help to sit down’: *toog-loo* is appropriate for situations of indirect causation, whereas *toog-al* implies a physical involvement of the causer in the caused event (for example, when someone handles a chair to another person [s]he invites to sit down).

6. Comparison with Buy (an Atlantic language belonging to the same subgroup as Wolof) suggests a merger between two originally distinct suffixes, since Buy distinguishes *ar* ‘benefactive’ from *al* ‘comitative’ (cf. Doneux 1991: 63–64).

7. In these examples, the function of applicative derivation is to make it possible to use a focalizing device from which adjuncts introduced by the preposition *ak* are excluded, but Wolof also has obligatory applicatives, i.e. cases in which the object licensed by applicative derivation has absolutely no possibility to be constructed as an adjunct of the non-applicative form of the same verb. This occurs in particular with beneficiaries.

3.3. Antipassive *-e*

The identification of an antipassive derivation in Wolof may be surprising, since antipassive derivation is commonly considered a characteristic of ergative languages. The antipassive function of *-e* in Wolof is certainly not entirely comparable to that assumed by antipassive derivations in ergative languages, but in its antipassive use, the suffix *-e* makes it possible to omit the object of transitive verbs, or the object representing the recipient of ditransitive verbs, without modifying the semantic role assigned to the subject, as in *màtt* ‘bite someone’ > *màtt-e* ‘bite’ (without mentioning a specific patient), or *jox* ‘give something to someone’ > *jox-e* ‘give something’ (without mentioning a specific recipient). This is a function typical of antipassive derivations:

## (6) Wolof

- a. *xaj bii du màtt-e*  
 dog DEM NEG.SBJ.3SG bite-APSV  
 ‘This dog does not bite.’
- b. *alal du jox-e màqaama*  
 wealth NEG.SBJ.3SG give-APSV prestige  
 ‘Wealth does not give prestige.’

This use of *-e* is possible only with a limited number of transitive verbs taking a single object, but it is fully productive with ditransitive verbs, in particular with ditransitive verbs derived by means of the applicative marker *-al*, as in (7):

## (7) Wolof

- a. *togg naa yàpp wi*  
 cook PRF.SBJ.ISG meat DEF  
 ‘I have cooked the meat.’
- b. *togg-al naa la yàpp wi*  
 COOK-APPL PRF.SBJ.ISG OBJ.2SG meat DEF  
 ‘I have cooked the meat for you.’
- c. *togg-al-e naa yàpp wi*  
 COOK-APPL-APSV PRF.SBJ.ISG meat DEF  
 ‘I have cooked the meat for people.’

When reconstructing the history of the suffixes coding valency changes in Wolof, it is important to keep in mind that, cross-linguistically, specialized antipassive markers are not common in accusative languages. However, irrespective of the distinction between accusative and ergative alignment, middle forms orig-

inating from reflexives very commonly develop antipassive as well as passive uses, and derived verb forms interpreted by default as reciprocal may also have antipassive-like uses, as mentioned in Section 2.

### 3.4. Reciprocal *-e*

With some verbs, the form derived by means of *-e* expresses a reciprocal meaning. However, this use of *-e* is not very productive, and can be characterized as being limited to the expression of naturally reciprocal events (i.e., two participant events in which the exchange of roles is not absolutely obligatory, but nevertheless constitutes the normal situation), as in *gis* ‘see’ → *gis-e* ‘meet’, or *nuyu* ‘greet’ → *nuyoo* (< *nuyu* + *e*)<sup>8</sup> ‘exchange greetings’:

(8) Wolof

- a. *nuyu naa ko*  
greet PRF.SBJ.ISG OBJ.3SG  
‘I greeted him/her.’
- b. *nuyoo naa ak moom*  
greet.RECP PRF.SBJ.ISG with PRON.3SG  
‘I exchanged greetings with him/her.’

In (9), the meaning carried by *-e* cannot, strictly speaking, be characterized as reciprocal, but it is nevertheless very close to the use of *-e* to code naturally reciprocal events, since in this example, *-e* combines a decausative meaning with a meaning of parallel co-participation: *rax* ‘mix’ (transitive) → *rax-e* ‘mix together’ (intransitive).

(9) Wolof

- ceeb bi dafa rax-e*  
rice DEF FOC.SBJ.3SG mix-RECP  
‘The rice is mixed.’ (i.e., there are both broken seeds and whole seeds in it)

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8. In Wolof, a morphophonological process  $u + e \rightarrow oo$  regularly occurs at morpheme boundaries.

#### 4. Other suffixes possibly related to *-e*

##### 4.1. Causative *-le*

Among the causative suffixes of Wolof, *-le*, homonymous with possessive *-le* that will be dealt with in Section 4.2, is specialized to the expression of a particular type of causation, namely sociative causation, in which the causer is not the only initiator or controller of the event, but crucially contributes to the realization of an event in which the causee takes an active part (‘help someone do something’). Consequently, in sociative causation, the causee is more agent-like than in prototypical causation, and (s)he can equally be viewed as a beneficiary. For example, *xuloo-le* ‘take someone’s side’ < *xuloo* ‘quarrel’ can be paraphrased as ‘take part in a quarrel to the benefit of one of the persons who are quarrelling’:

(10) Wolof

- a. *xuloo nañu*  
 quarrel PRF.SBJ.IPL  
 ‘We quarrelled.’
- b. *ba ñu ko tooñee, xuloo-le*  
 when SBJ.3PL OBJ.3SG wrong.SUBORD quarrel-SCAUS  
*nañu ko*  
 PRF.SBJ.3SG OBJ.3SG  
 ‘When they wronged him/her, we took his/her side.’

In a number of unrelated languages, the same derived forms of the verb are used to express ‘make someone do something’ and ‘help someone do something’. In Wolof too, the causative suffixes *-al* and *-lu* can occasionally be found in constructions representing events analyzable in terms of sociative causation, but this is not their central meaning. By contrast, the only possible interpretation of causative *-le* is sociative causation.

Given the semantic complexity of the role of causee in sociative causatives, causative affixes specialized to the expression of sociative causation, such as Wolof *-le*, can be expected to be complex markers, at least from an etymological point of view. More precisely, the semantic analysis of sociative causation suggests regarding causative *-le* as a complex marker with applicative *-al* as its first component, since an important function of applicative *-al* is to license direct objects with the semantic role of beneficiary.

From a strictly synchronic point of view, this analysis can hardly be maintained, since *-e* does not have a use that could directly provide an explanation of causative *-le* as resulting from a combination of applicative *-al* with *-e*. Still, it

is plausible, at least from a diachronic point of view, that causative *-le* has originated from a combination of applicative *-al*, emphasizing the characterization of one of the protagonists as the beneficiary, with a second formative *\*-e* carrying the meaning of co-participation, since such a decomposition reflects a possible semantic analysis of sociative causation. The point is that, in situations that can be analyzed in terms of sociative causation, the causee can be considered as a beneficiary, but as a beneficiary that departs from prototypical beneficiaries by his/her active involvement in the event. Consequently, since Wolof can use the suffix *-e* to code a particular variety of reciprocal situations (see Section 3.4), it seems reasonable to assume that this reciprocal *-e* results from the specialization of an ancient marker *\*-e* conveying a more general meaning of co-participation, whose amalgamation with *-al* gave rise to causative *-le*.

#### 4.2. Possessive *-le*

The possessive verb forms of Wolof are transitive verb forms derived from intransitive verbs. They occur in transitive constructions in which the object receives the semantic role assigned by the non-derived form of the same verb to its subject, and the subject represents the possessor of the referent of the object, as in (1), repeated here as (11).

- (11) Wolof
- a. *woto bi gaaw na*  
 car DEF be.fast PRF.SBJ.3SG  
 ‘The car is fast.’
- b. *gaaw-le naa woto*  
 be.fast-POSS PRF.SBJ.ISG car  
 ‘I have a fast car.’

To the best of our knowledge, Wolof and Serer (another Atlantic language of Senegal) are the only languages that have been identified as coding this type of valency change by means of a specialized and unanalyzable marker. But the same result is commonly obtained by means of a combination of applicative derivation and passive derivation: starting from an intransitive construction, applicative derivation can produce a transitive construction in which the noun phrase with the syntactic role of object represents a second participant in the event, and this object can be subsequently promoted to the role of subject by passive derivation, as in the following example from Tswana:

## (12) Tswana

- a. *ngwana o lwala thata*  
 1.child SM3:1 be.sick very  
 ‘The child is very sick.’
- b. *mosadi yo o lwalelwa ke ngwana*  
 1.woman 1.DEM SM3:1 be.sick.APPL.PSV by 1.child  
 lit. roughly ‘This woman is sick-concerned by a child.’, hence  
 ‘This woman has a sick child.’

This strongly suggests that possessive *-le* originated in Wolof as a complex marker, with applicative *-al* as its first component, and with a second formative *\*-e*, at a stage of evolution when passive was coded by a suffix *\*-e*. Wolof has no direct trace of an ancient suffix *\*-e* being used in passive constructions, but evidence supporting this hypothesis can be found in the related language Buy, which does have a passive marker *-e* (Doneux 1991: 62).

4.3. Causative *-loo*

Causative verbs derived by means of the suffixes *-al* and *-loo* have in common that they occur in typical causative constructions, with the causee in the syntactic role of object. As indicated in Note 3, the difference is that *-al* is used only to derive causative forms of intransitive verbs, and is semantically limited to direct causation (as in *fees* ‘be full’ → *fees-al* ‘fill’) or joint action, whereas *-loo* is not limited to intransitive verbs, and semantically implies indirect causation (as in *jooy* ‘cry’ → *jooy-loo* ‘make cry’, or *raxas* ‘wash (tr.)’ → *raxas-loo* ‘make wash’).

Wolof has another causative suffix *-lu*, used exclusively with transitive verbs, in constructions in which it is impossible to mention the causee. In other words, formally, the verbs derived by means of *-lu* have the same construction as the transitive verbs from which they derive, but semantically, they differ in that the referent of their subject is presented as having another participant (not mentioned in the construction) acting as the immediate agent, as can be seen from (13).

## (13) Wolof

- a. *ñaw naa roob*  
 sew PRF.SBJ.ISG dress  
 ‘I sewed a dress.’
- b. *ñaw-lu naa roob*  
 sew-CAUS PRF.SBJ.ISG dress  
 ‘I had a dress sewn.’

- c. *ñaw-loo naa ko roob*  
 sew-CAUS PRF.SBJ.ISG OBJ.3SG dress  
 ‘I had him/her sew a dress.’

The form of these three causative suffixes makes it possible to imagine a decomposition of *-lu* into *-al* + *-u*, and a decomposition of *-loo* into *-lu* + *-e*.

Several authors have proposed to analyze causative *-lu* as *-al* ‘applicative-benefactive’ + *-u* ‘middle’. The validity of this explanation is not obvious, however, since it would imply a semantic shift from ‘do something for oneself’ to ‘manage to have something done’. Some uses of the so-called “pronominal forms” of Romance verbs suggest the possibility of such a shift,<sup>9</sup> but we will not discuss this question further, since it has no direct impact on the matters discussed in this paper.

By contrast, whatever the origin of *-lu*, there is no difficulty analyzing causative *-loo* as *-lu* ‘causative’ + *-e* ‘applicative’. This hypothesis is fully consistent with the fact that the construction of verbs suffixed with *-loo* includes one more term (the causee) than the construction of verbs suffixed with *-lu*; it is also consistent with the instrumental use of applicative *-e*, since a causee can often be viewed as a kind of instrument: *A has B sew a dress* can be analyzed as *A has a dress sewn owing to B’s work*.

#### 4.4. Co-participative *-aale*

The meaning carried by the suffix *-aale* is sometimes a meaning of co-participation that can be rendered in English by *together* (*nekk* ‘be somewhere’ > *nekk-aale* ‘live together’), but this use of *-aale* is marginal and can be considered as lexicalized. In its productive use, this suffix rather expresses a relation of simultaneity between the event represented by the verb and another event (‘at the same time’), and has no obvious relation to verb valency. We have no hypothesis concerning a possible relation between this suffix and the other suffixes examined in this paper.

#### 4.5. Co-participative *-andoo*

Parallel co-participation is the central meaning of *-andoo*; this suffix implies a plurality of participants involved in the same event with the same role, as in (14). A plausible origin of this suffix is the verb *ànd* ‘go together’, ‘act together’, with

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9. For example, in Spanish, the literal meaning of a sentence such as *Me reparé el coche* is ‘I repaired my car’, but it is more commonly interpreted as ‘I had my car repaired’.

a second formative *-oo* probably identifiable as the suffix *-oo* presented in the following section.

(14) Wolof

- a. *mu toog ci laal bi*  
 SBJ.3SG sit LOC bed DEF  
 ‘He/she sat on the bed.’
- b. *ñoom ñaar ñepp toog-andoo ci laal bi*  
 PRON.3PL two all sit-COPART LOC bed DEF  
 ‘They both sat on the bed together.’

4.6. Reciprocal *-oo*

This suffix is sometimes encountered in contexts that force an interpretation of parallel co-participation, but it is more commonly used to express a reciprocal meaning, as in (15).

(15) Wolof

- a. *wor na xaritam*  
 betray PRF.SBJ.3SG friend.3SG  
 ‘He/she betrayed his/her friend.’
- b. *seen wax yi wor-oo nañu*  
 POSS.2PL word DEF betray-RECP PRF.SBJ.3PL  
 ‘Your declarations are contradictory.’ (lit. ‘betray one another’)

Wolof has a middle marker *-u*, and other languages also provide evidence for the possibility to code reciprocity by combining a middle marker with a marker of co-participation (or at least with a morphological device typically used cross-linguistically to code a plurality of participants). For example, in Amharic (cf. Amberber 2000), reciprocity is expressed by a combination of the mediopassive prefix plus a special reduplicative stem. A plausible origin of reciprocal *-oo* in Wolof is, therefore, the combination of middle *-u* with the ancient marker of co-participation *\*-e*, which we have identified as a probable formative of causative *-le*, and whose direct reflex would be the suffix *-e* coding naturally reciprocal events.

4.7. Reciprocal *-ante*

The suffix *-ante* provides the most productive way of expressing prototypical reciprocal events in Wolof, in the sense defined by Kemmer (1993: 95–127). This is illustrated in (16):

## (16) Wolof

- a. *rey nañu góor gi*  
 kill PRF.SBJ.3PL man DEF  
 ‘They killed the man.’
- b. *rey-ante nañu*  
 kill-RECP PRF.SBJ.3PL  
 ‘They killed one another.’

Given the amount of evidence pointing to an ancient marker of co-participation *\*-e*, it seems plausible that this suffix originated as a complex marker with the same suffix *\*-e* coding co-participation as its second formative. Unfortunately, we have no proposal as to the origin of the first component of *-ante*.

## 5. Conclusion

The data presented in Sections 3 and 4 provides evidence that reciprocal *-e* may be the reflex of an ancient suffix *\*-e* whose possible uses included several varieties of co-participation, and that the amalgamation of this suffix *\*-e* with other markers may have given rise to *\*-le* coding sociative causation, to reciprocal *\*-oo*, and to reciprocal *\*-ante*. Moreover, comparison with other languages in which derived verb forms that generally convey a reciprocal meaning also have antipassive-like uses suggests that antipassive *-e* may well be a reflex of the same suffix *\*-e*. If our hypothesis concerning possessive *-le* is correct, a possible relationship between an ancient marker of co-participation *\*-e* and an ancient passive *\*-e* should also be considered, since many languages attest the possibility of middle markers developing both passive and antipassive uses.

A relationship with causative *-e* should perhaps be considered too, given that comitative constructions are a possible source of causative constructions.

Unfortunately, at the present state of the comparative study of Atlantic languages, it is not possible to assess these proposals on the basis of a reconstruction of verbal derivation at the Atlantic level. Moreover, Wolof is relatively isolated within the subgroup of Atlantic to which it belongs, so a comparison limited to Wolof and some closely related languages is not possible either. However, it is difficult to imagine that chance alone could have resulted in extensive homonymy between so many markers whose meanings suggest that semantic developments from a common source are very plausible. Consequently, it is reasonable to think that at least some of the hypotheses presented in this paper are historically valid, and it would certainly be worth reconsidering this question

on the basis of a systematic collection of comparative data on verbal derivation and valency changes in Atlantic languages.

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# On reciprocal and reflexive uses of anaphors in German and other European languages

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## 1. Introduction<sup>1</sup>

The starting point of our paper is the observation that German *sich*, commonly analyzed as a reflexive and reciprocal anaphor, has no reciprocal interpretation in prepositional phrases (Section 2). We will argue that this seemingly arbitrary restriction is in fact consistent with a systematic pattern that emerges if we consider the distribution and interpretation of similar elements in some Scandinavian and Romance languages, which have two distinct forms corresponding to *sich* (Section 3). We consequently argue that a similar functional split needs to be assumed for German. On the basis of a series of syntactic tests it can be shown that there are two use types or lexical entries of *sich*: in one use type, *sich* behaves like an element of category NP and functions as a marker of reflexivity (“pronominal *sich*”); in its second use type (“clitic *sich*”), it displays a restricted distribution and has the semantics of a middle marker (Section 4). Given that only clitic *sich* may have a reciprocal interpretation, the impossibility of using *sich* as a marker of reciprocity in prepositional phrases becomes much less mysterious: *sich* does not have reciprocal readings in prepositional phrases because only clitic *sich* may express reciprocity, and clitic *sich* cannot occur in prepositional phrases. We regard this distributional restriction as a consequence of the historical development of *sich*, which is sketched in Section 5. We assume a split in Old High German in which (reflexive) *sih* was reanalyzed as a verbal clitic indicating “role-indifferent valency reduction”, while at the same time the pronominal use of *sih* was retained. Clitic *si(c)h* acquired a reciprocal function,

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among other meanings, but being a verbal clitic it could not occur after prepositions. What occurs in prepositional phrases is the pronominal form of *sich*, which is restricted to the expression of reflexivity (Section 6).

Even though this would be a tempting conclusion, we do not regard the scenario sketched in Section 5 as a universal process in the development of reciprocal markers from reflexive anaphors. In particular, Slavonic languages such as Polish or Czech provide evidence that a different kind of development is also possible (Section 7). In such a scenario reflexive pronouns acquire the reciprocal meaning directly, in certain contexts, without having first developed into middle markers. This type of change is in fact assumed by Heine and Miyashita (this volume) for reflexive-reciprocal polysemies in general. We will show that for German and the Scandinavian and Romance languages dealt with in this paper the first type of development is more plausible, while the development assumed by Heine and Miyashita can account more accurately for the distributional facts observed in Slavonic languages (Section 8).

## 2. The interpretation of German *sich* in prepositional phrases

The German anaphor *sich* is commonly described as having both a reflexive and a reciprocal interpretation (see for example Zifonun et al. 1997: 1355–1367). The following examples are thus ambiguous:<sup>2,3</sup>

- (1) *Karl und Maria sehen sich.*  
 Karl and Mary see SE  
 ‘Charles and Mary see themselves/each other.’
- (2) *Die Kinder bewunderten sich.*  
 the children admired SE  
 ‘The children admired themselves/each other.’

The ambiguity illustrated in (1) and (2) does not arise if *sich* follows a preposition. Reciprocal readings are consequently categorically disallowed for the a-sentences in (3)–(5) below, while they are possible in the (near) equivalent (but syntactically different) b-sentences. The c-sentences illustrate the use of

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2. Any element that is etymologically related to Germ. *sich* and that has a similar function will simply be glossed ‘SE’.

3. In most cases the context probably disambiguates between the two readings, but this does not affect the generalization at issue. Furthermore note that we use the term ‘ambiguous’ in a wide sense at this point. The semantic relationship between the two meanings will be discussed in Section 6.1.

the German reciprocal marker *einander* ‘one another’, which is morphologically composed of the numeral *ein* ‘one’ and the adjective/noun *ander* ‘other’. In prepositional phrases *einander* is the only option to express reciprocity. This distributional asymmetry of *sich* in prepositional phrases has been noted in the relevant literature (cf. Starke 1992; Zifonun et al. 1997: 1357; König and Vezosi 2004: 241, fn. 12; Safir 2004: 262), but with a few exceptions (e.g. Heine and Miyashita this volume) no attempt has so far been made to explain it.<sup>4</sup>

- (3) a. *Sie glauben an sich.*  
 they believe at SE  
 ‘They have confidence in themselves/\*each other.’
- b. *Sie vertrauen sich.*  
 they trust SE  
 ‘They trust each other/themselves.’
- c. *Sie glauben an-einander.*  
 they believe at-one.another  
 ‘They have confidence in each other.’
- (4) a. *Sie starrten auf sich.*  
 they stared on SE  
 ‘They stared at themselves/\*each other.’
- b. *Sie starrten sich an.*  
 they stared SE PTC  
 ‘They stared at each other/themselves.’
- c. *Sie starrten auf-einander.*  
 they stared on-one.another  
 ‘They stared at each other.’
- (5) a. *Paul und Maria riefen jeden Tag bei sich zu Hause an.*  
 Paul and Mary called every day at SE at home  
 an.  
 PTC  
 ‘Paul and Mary called their respective homes every day.’

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4. Heine and Miyashita (this volume) go in the same direction as we do in the present paper but come to a somewhat different conclusion (cf. Section 6).

- b. *Paul und Maria riefen sich jeden Tag zu Hause an.*  
 Paul and Mary called SE every day at home PTC  
 ‘Paul and Mary called each other every day at home.’
- c. *Paul und Maria riefen jeden Tag bei-einander an.*  
 Paul and Mary called every day at-one.another PTC  
 ‘Paul and Mary called each other every day at home.’

The ban on reciprocal *sich* in prepositional phrases is quite robust. It applies to prepositional phrases in both argument and adjunct positions. In (3)–(5) above the prepositional phrases containing *sich* are arguments. The prepositional phrase in (6) is an adjunct, and it only has the reading ‘They saw a snake beside them(selves)’, but not ‘They saw a snake beside each other’:

- (6) *Sie sahen eine Schlange neben sich.*  
 they saw a snake beside SE  
 ‘They saw a snake beside them(selves)/\*each other.’

While the examples in (3)–(6) seem to show that the absence or presence of a reciprocal reading is a function of the syntactic position taken by *sich*, closer scrutiny reveals that this cannot be the whole story. Irrespective of its position in a sentence, *sich* does not have a reciprocal reading if it is stressed. This is illustrated in (7):

- (7) *Hans und Karl zitieren nur SICH.*  
 Hans and Karl quote only SE  
 ‘Hans and Karl only quote themselves/\*each other.’

An apparent exception to the generalization that *sich* cannot be interpreted as a reciprocal marker if it follows a preposition, or if it is stressed, can be found in the context of a limited set of prepositions that do allow a reciprocal interpretation. The most typical representative of this class is *unter* ‘among’:

- (8) *Die Spieler wollten unter sich bleiben.*  
 the players wanted among SE remain  
 ‘The players wanted to remain among themselves.’

We will argue below (Section 4.2) that (8) is not an instance of reciprocity, but displays a specific type of reflexive meaning (“collective reflexivity”). The phenomenon that reflexive markers may have a reciprocal-like interpretation in specific contexts is not restricted to German. As will be seen, many Germanic

and Romance languages show the same seemingly exceptional behaviour with prepositions of the same meaning.

### 3. A view on other Germanic languages and Romance

While the distributional restriction on reciprocal *sich* in German has repeatedly been noticed in the literature on reciprocity (cf. Section 2), a completely parallel asymmetry in some other Germanic and Romance languages has largely gone unnoticed. These languages display a contrast between one phonologically heavier and one phonologically lighter item (cf. Kemmer 1993: 25). Interestingly, in each of these languages it is only the phonologically lighter element that may be used as an expression of reciprocity. Even though there is no overt formal contrast between two reflexive forms in German, it therefore appears conceivable to assume two functionally different elements in German, too. We will return to this point below (Section 4). Let us now have a look at some Scandinavian and Romance languages.

#### 3.1. Scandinavian

The Proto-Scandinavian reflexive pronoun *\*sik* diverged into two different forms in Old Norse. On the one hand, *\*sik* was phonologically reduced and developed into a verbal clitic and later into an affix. At the same time the reflexive anaphor was retained and later developed into the various SE-anaphors of modern Scandinavian languages (*sig*, *seg*). To take Swedish as an example, there is a verbal suffix *-s* and an anaphor *sig*. The former expresses a variety of meanings, including those normally described as the *middle voice*, the passive, and also reciprocity.<sup>5</sup> Generally, the suffix has only limited productivity and tends to

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5. Actually even within the group of verbs that take the *s*-suffix different meanings may be distinguished formally. Consider the possible forms derived from the verb *slå* 'hit', for instance. *Slåss*, pronounced with a short vowel, has the reciprocal meaning 'fight', while *slås*, pronounced with a long vowel, expresses the passive meaning 'be beaten, be defeated'. We are grateful to Östen Dahl for pointing this out to us. The fact that the stem vowel is affected in the reciprocal verb and not in the passive might suggest that the passive is a more recent development, thus confirming the universality of similar grammaticalization paths in other languages (cf. Kemmer 1993: 151–200). Faarlund (2004: 125–126), too, states that the development of the passive meaning started in Old Norse while the reciprocal use was already well established. Here is a selection of verbs that are assigned a reciprocal meaning by the suffix *-s*: *brottas* 'wrestle'; *enas* 'unite'; *förlikas* 'be reconciled'; *kivas* 'squabble'; *kramas* 'hug'; *kyssas* 'kiss'; *mötas* 'meet'; *pussas* 'kiss'; *råkas* 'meet'; *samlas* 'gather'; *ses* 'meet'; *slåss* 'fight';

compete with other, formally more complex, constructions. As far as the passive uses of *-s* are concerned there is a competing periphrastic construction involving the verb *bli* ‘become’, and in the case of reciprocity there is a nominal “competitor”, viz. the reciprocal expression *varandra* ‘each other’. A fact that seems highly relevant for our argument is that reciprocity in Swedish can be expressed using either the *s*-suffix or the specialized reciprocal *varandra*, but not the reflexive anaphor *sig*. This is illustrated in (9). Since the *s*-suffix can only be attached to verbs (cf. [9a]), and since the full form may not express reciprocity (cf. [9b+c]), the only form to indicate this meaning in prepositional phrases is *varandra* (cf. [9d]).

## (9) Swedish

- a. *De träffa-s och tala-s vid.*  
 they meet-MID and speak-MID at  
 ‘They meet and talk to each other.’
- b. \**De träffar sig.*  
 they meet SE
- c. \**De talar med sig.*  
 they talk with SE
- d. *De träffar varandra och talar med varandra.*  
 they meet each.other and speak with each.other  
 ‘They meet each other and speak to each other.’

Danish displays a similar pattern. As in Swedish we find a set of reciprocal verbs which are derived morphologically.<sup>6</sup> It is interesting to note that some of these verbs are lexicalized to such an extent that they do not occur without the *s*-suffix at all (*enes* ‘agree, get on’, \**ene*; *forliges* ‘become reconciled’, \**forlige*; *kappes* ‘compete’, \**kappe*; *kives* ‘bicker’, \**kive*; cf. Bergeton 2004: 289). Apart from such verbal reciprocals only the specialized reciprocal pronoun *hinanden* ‘each other’ may be used to express reciprocity. Sentence (10a) exemplifies the

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*tampas* ‘tussle’; *följas åt* ‘accompany (one another)’; *hjälpas åt* ‘help (one another)’; *skiljas* ‘part’; *retas* ‘tease’; *hörs* ‘hear (one another)’ (Holmes and Hincliffe 1994: 307).

6. Here is a sample of reciprocal verbs from Danish (Jones and Gade 1981: 129; Bergeton 2004: 289): *mødes* ‘meet’; *træffes* ‘meet’; *ses* ‘see each other, meet’; *slås* ‘fight’; *skændes* ‘quarrel’; *trættes* ‘quarrel’; *brydes* ‘clash, wrestle’; *kyskes* ‘kiss’; *skiftes* ‘take turns...-ing’; *føljes* ‘accompany (each other)’; *hjælpes (ad)* ‘help each other’; *tales ved* ‘talk’; *snakkes ved* ‘talk, chat’; *enes* ‘agree, bicker’; *forliges* ‘become reconciled’; *kappes* ‘compete’; *kives* ‘bicker’.

reciprocal use of the *s*-suffix. In (10b) reciprocity is expressed by *hinanden*, and (10c) shows that a reciprocal interpretation of *sig* is not available. As we saw above, this is parallel to Swedish, which does not allow for a reciprocal interpretation of the reflexive anaphor *sig*.

## (10) Danish

- a. *Peter og Marie møde-s ofte på gade-n.*  
Peter and Mary meet-MID often at street-DET  
'Peter and Mary often meet in the street.'
- b. *Peter og Marie møder ofte hinanden på gade-n.*  
Peter and Mary meet often each.other at street-DEF  
'Peter and Mary often meet (each other) in the street.'
- c. *De slår sig i skolen.*  
they hit SE in school.DEF  
'They hit themselves/\*each other in school.'

Icelandic differs from Danish and Swedish only in that the two elements of its reciprocal pronoun *hver/hver annan* 'each other' have preserved more syntagmatic independence. Specifically, when in construction with a preposition the universal quantifier *hver/hver* 'each' can either precede or follow the preposition:

## (11) Icelandic (Thráinsson 1994: 173)

- a. *Strákanir tala aldrei hvor við annan.*  
the.boys talk never each to other  
'The boys never talk to each other.'
- b. *Strákarnir tala aldrei við hvorn annan.*

Again, the reflexive anaphor *sig* does not allow a reciprocal interpretation, even in a context that would strongly favour one. Since *sig* may not be interpreted as a reflexive marker in the object position of verbs like *elska* 'love' either, example (12) is ungrammatical.

- (12) \**María og Sigurd elska sig.*  
Maria and Sigurd love SE  
int.: 'Maria and Sigurd love each other.'

To sum up the situation in modern Scandinavian, we observe an asymmetry to the effect that of the two items in question – a full reflexive anaphor and a reduced middle affix – only the latter has the potential to express reciprocity. Later we

will propose that this fact can shed some light on the distribution and meaning of German *sich*. But first, we will have a look at two Romance languages.

### 3.2. Spanish and Italian

We saw in Section 3.1 on Scandinavian that a reflexive anaphor may split-up into a strong and a weak form, the strong form being used for the expression of reflexivity, and the weak form having a set of middle interpretations including reciprocity. The Romance languages Spanish and Italian follow this pattern as well. The division between a set of strong pronouns and one of unstressed clitics in Romance languages is well-known, not the least because the two sets differ both formally and distributionally. The strong forms generally follow the (finite) verb, while the weak forms precede it in most contexts. This does not only apply to reflexive forms, but also to non-reflexive ones. Consider the following examples from Italian and Spanish in (13) and (14) respectively:

(13) Italian

- a. *Vediamo LORO.*  
see.IPL them
- b. *Li vediamo.*  
them see.IPL  
'We see them.'

(14) Spanish

- a. *Vemos a ELLOS.*<sup>7</sup>  
see.IPL PREP them
- b. *Los vemos.*  
them see.IPL  
'We see them.'

*Loro* in Italian and *ellos/ellas* in Spanish are always non-topical and stressed. They contrast with the weak forms, which are always unstressed (i.e., they are "clitics"). Such pairs of "tonic pronouns" and clitics are also available in the domain of reflexivity, our main interest at this point. Italian has a clitic *si* and a stressed form *sé*. In Spanish the forms are *se* (clitic) and *sí* (tonic). As with non-reflexive pronouns, this opposition goes together with a distributional difference:

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7. Definite noun phrases with animate referents in object position are marked by the preposition *a* in Spanish ("differential object marking"). This does not affect the generalization concerning the distribution of stressed and unstressed pronominal forms.

pronouns occupy argument positions, whereas weak forms cliticize to the verb. As the following examples show, however, the difference between the forms goes beyond mere aspects of their distribution, and their lexico-semantic potential is also different: Only the weak forms can get a reciprocal interpretation in addition to a reflexive one (cf. the a-versions in [15] and [16] from Italian and Spanish respectively), while this is excluded for the strong forms (cf. the b-sentences).<sup>8</sup>

## (15) Italian

- a. *Paolo e Maria si vedono.*  
Paul and Mary SE see.3PL  
'Paul and Mary see themselves/each other.'
- b. *Paolo e Maria vedono sé.*  
Paul and Mary see.3PL SE  
'Paul and Mary see themselves/\*each other.'

## (16) Spanish

- a. *María y Pedro se quieren.*  
Mary and Peter SE love.  
'Mary and Peter love each other.'
- b. *María y Pedro se quieren a sí.*  
Mary and Peter SE love OBJ SE  
'Mary and Peter love themselves/\*each other.'

In prepositional phrases it is of course only the stressed forms that are possible. The unstressed forms, being verbal clitics, are excluded in that position. With respect to reciprocity this means that neither of the two forms at issue can have a reciprocal interpretation in prepositional phrases, the one being excluded in prepositional phrases anyway and the other not having the semantic potential to express reciprocity. Exactly as in German and the Scandinavian languages discussed above, the only reciprocal expression possible in prepositional phrases is a complex non-reflexive construction consisting of a quantifier and the word for 'other'. These "bipartite" expressions resemble the Icelandic reciprocal marker *hvor/hver annan* 'each other' insofar as they do not follow the preposition as a fixed unit.<sup>9</sup> The examples in (17) and (18) illustrate the use of the special-

8. The sentences are hardly acceptable anyway, since for a reflexive reading the intensifiers *stess-* (Italian) and *mism-* (Spanish) would be used (*Paolo e Maria vedono se stessi*; *María y Pedro se quieren a sí mismos*).

9. The relative independence of the single elements is also shown by the fact that their gender and number agreement is still intact.

ized reciprocals – Spanish *uno(s)* P (*los*)*otro(s)* and Italian *l'un l'altro* with the corresponding forms in different gender/number configurations – as the only option after prepositions:

- (17) *Gli studenti hanno parlato gli uni con gli altri.*  
 ART students AUX talked ART ones with ART others  
 ‘The students talked to each other.’
- (18) *Los estudiantes hablaron los unos con los otros.*  
 ART students talked ART ones with ART others  
 ‘The students talked to each other.’

To conclude this section, Spanish and Italian exhibit an asymmetry very similar to the one that we saw in Scandinavian. Reflexivity may be encoded using one of two phonologically and distributionally distinct forms, a weak one and a strong one. Only the weak form has the potential to also trigger a reciprocal interpretation. This excludes reciprocal interpretations of the relevant items in the position of a prepositional complement, only the strong forms being allowed there. In the next section we will draw on this general pattern and show that the German data presented in Section 2 can be explained in a similar way.

#### 4. Clitic and pronominal *sich* in German

As was discussed in Section 2, a reciprocal interpretation of German *sich* is strictly excluded in prepositional phrases (with the seeming exception of “collective reflexivity”, which, according to our analysis, is not an instance of reciprocity in a narrow sense; cf. below). With the formal differentiation between weak and strong reflexives and the concomitant ban on a reciprocal interpretation in prepositional phrases in Scandinavian and Romance in mind, we will now propose to assume a similar split between two forms of German *sich*. To be sure, there are no differences in the segmental phonological make-up of those two forms. As far as the potential to be stressed is concerned, however, the data suggest a systematic separation parallel to the one observed in Scandinavian and Romance languages above. We propose the hypothesis in (19) and the attendant cross-linguistic pattern in Table 1: clitic *sich* has a distribution and meaning similar to Swedish *-s*, Italian *si* and Spanish *se*, while pronominal *sich* behaves similarly to Swedish *sig*, Italian *sé* and Spanish *sí*.

- (19) There are two forms of German *sich*, a clitic (*sich<sub>CL</sub>*) and a pronominal (*sich<sub>PRO</sub>*), which functionally correspond to the formally differentiated expressions in Romance and Scandinavian.

Table 1. Shared pattern of asymmetry

	reduced form (middle, reciprocal)	full form (reflexive, no reciprocal)
German	<i>sich</i> <sub>CL</sub>	<i>sich</i> <sub>PRO</sub>
Scandinavian	-s(t)	<i>sig/seg</i>
Italian	<i>si</i>	<i>sé</i>
Spanish	<i>se</i>	<i>sí</i>

As far as the interpretation of the two markers is concerned, we posit that clitic *sich* functions as a middle marker and pronominal *sich* as an anaphor (cf. Section 6). The differentiation may be represented as in (20). There are two distinct lexical entries of *sich*, just as in the case of Spanish (cf. [21]; <'> indicates a *potential* word [and therefore also sentence] accent):

(20) Two lexical entries of German *sich*:

1. *sich*<sub>PRO</sub> ((/zɪç/)σ)<sub>ω</sub> ANAPHOR
2. *sich*<sub>CL</sub> ((/zɪç/)σ)<sub>κ</sub> MIDDLE MARKER

(21) Two lexical entries for Spanish *se/sí*:

1. *sí*<sub>PRO</sub> ((/si/)σ)<sub>ω</sub> ANAPHOR
2. *se*<sub>CL</sub> ((/se/)σ)<sub>κ</sub> MIDDLE MARKER

From a syntactic point of view the assumption of such a differentiation effectively means that only those instances of *sich* that do not occupy noun phrase positions should be able to express reciprocity. This will be illustrated in the following.

#### 4.1. Evidence for a differentiation between two uses of *sich*

The observation that *sich* is not completely homogeneous, as far as its distribution and meaning is concerned, is not new (see Stötzel 1970: 174–198 et passim; Cranmer 1975: 135; Reinhart and Reuland 1993: 667–668). What has not yet been commented on, as far as we can see, is a systematic correlation between the morphosyntactic status of *sich* and the ability to convey a reciprocal meaning. We will now go through some standard tests for argument status and see whether the generalization holds that those instances of *sich* that are clearly of category NP do not have a reciprocal reading. It has already been shown in Section 2 that *sich* as a prepositional complement – a position associated with elements of category NP – excludes a reciprocal interpretation. Another position in which only argument expressions, but no verbal clitics, may occur is the initial position

in a topic construction (the “Forefield”, in terms of a topological description of the German sentence):<sup>10</sup>

- (22) *SICH konnten die Spieler nicht leiden, aber sie mochten*  
 SE could the players not bear but they liked  
*den TRAINER.*  
 the coach  
 ‘The players couldn’t stand themselves/\*each other, but they liked the coach.’

The translation of (22) shows that fronted *sich* may not express a reciprocal meaning, although such an interpretation is not ruled out by the context. A reading in which the players do not like each other while they like the coach is pragmatically not only conceivable but even preferred to the reflexive reading. Yet, the grammatical restriction on reciprocal *sich* in noun phrase positions seems to be robust in this case, too. Moreover, *sich* cannot have a reciprocal meaning if it is coordinated with another noun phrase:<sup>11</sup>

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10. In the German linguistic tradition the term ‘Forefield’ refers to the slot for topical or focal constituents which precede the finite verb in main clauses. ‘Middle Field’ stands for the space between the finite verb in the second position and verbal particles or non-finite verb forms on the right edge of the sentence (Bech 1955/57).

11. The exclusion of the reciprocal reading in (22) and (23) may not be totally obvious. Note that a reflexive with a plural subject is ambiguous between a distributive reflexive and a collective reflexive reading (cf. also Section 4.2). In the first case, each of the individuals denoted by the plural subject acts on him- or herself and in the second case the individuals collectively act on themselves as a group. The latter reading is conceptually very similar to the reciprocal reading: if *a*, *b*, *c* act on themselves as a group, *a* indirectly acts on *b* and *c*, *b* indirectly acts on *a* and *c*, etc. That the two readings are nevertheless distinct is shown by the unacceptability of examples where the collective reflexive reading is ruled out by the context. Compare (i) and (ii):

- (i) *Die Polizisten hielten sich für Dealer.*  
 the policemen held SE for drug.dealers  
 ‘The policemen took each other to be drug dealers.’
- (ii) ?*Die Polizisten hielten SICH für Dealer und die echten*  
 the policemen held SE for drug.dealers and the real  
*Dealer für Kollegen.*  
 d.d.s for colleagues  
 ‘The policemen held themselves/\*each other to be drug dealers and the real drug dealers to be colleagues.’

For the above examples imagine two plainclothes policemen pursuing two drug deal-

- (23) *Erst lobten die Spieler SICH und dann die GEGNER.*  
 first praised the players SE and then the opponents  
 ‘The players first praised themselves/\*each other and then their opponents.’

Some so-called “exceptional case marking” structures (ECM), i.e. sentences where the noun phrase functioning as the (syntactic) object of the matrix clause is the (semantic) subject of a non-finite subordinate clause, give less clear results. We have found that a reciprocal reading of *sich* in the position of the matrix object is not totally excluded. Interestingly, however, a search in the IDS-corpus<sup>12</sup> showed examples of this type to be extremely rare. Here are two made-up examples among which at least (25) would not exclude a reciprocal reading:

- (24) *Sie hörten sich beten.*  
 they heard SE pray  
 ‘They heard themselves/?each other pray.’
- (25) *Sie ließen sich nicht allein.*  
 they let SE not alone  
 ‘They didn’t leave themselves/each other alone.’

While sentences like (24) and (25) seem to contradict the generalization that reciprocal readings of *sich* should not be possible in syntactic positions that allow only elements of category NP, it should be noted that the ability to be stressed remains an unequivocal criterion clearly selecting for a non-reciprocal interpretation. If *sich* in (24) receives stress (*Sie hörten SICH beten*), a reciprocal interpretation is clearly excluded. The fact that reciprocal readings are consis-

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ers in a dimly lit street at night. The policemen stand face to face, but with a distance of some 40 meters between them. The drug dealers they are pursuing are standing in front of an entrance nearby. A collective reflexive reading of stressed *sich* in (ii) is ruled out by world knowledge; policemen normally do not consider themselves to be someone else. If reciprocal and collective reflexive meaning were just facets of a more general vague meaning, one would therefore expect a reciprocal interpretation of *sich* to be possible. (To replace *sich* with the reciprocal *einander* would make the sentence perfectly acceptable, so there is nothing wrong about a reciprocal interpretation in general.) Nonetheless, *sich* in (ii) cannot have a purely reciprocal interpretation, i.e. a reading in which each policeman considers the other policeman, but not himself, to be a drug dealer. Only the odd, distributively reflexive, interpretation would make the sentence acceptable.

12. Cf. <http://www.ids-mannheim.de/cosmas2/>.

tently ruled out if *sich* is stressed is a completely general phenomenon. As was already shown above it also applies to sentences in which *sich* could function as a clitic, as far as its position in the sentence is concerned:

- (26) *Die Spieler lobten SICH.*  
 the players praised SE  
 ‘The players praised themselves/\*each other.’

So far we have called *sich*<sub>CL</sub> a “verbal clitic”, thus suggesting that it must stand adjacent to its verbal host. This is not totally correct, as the following example shows:

- (27) *Sie versuchten, sich auf die Schultern zu klopfen.*  
 they tried SE on the shoulders INF pat  
 ‘They tried to pat themselves/each other on the shoulder.’

In (27) *sich* does not stand adjacent to the verb *klopfen* ‘pat’, but occupies a left-marginal position within the “Middle Field” instead. Two points should be noted, however. First, *sich* cannot leave the Middle Field and is thus more restricted distributionally than ordinary pronominal arguments (cf. [22] above vs. [28] below). Second, not only instances of *sich* with a reciprocal interpretation may be separated from the verb in this way. Other use types of unstressed *sich* – which clearly do not function as arguments syntactically – may likewise occur at a distance from the verb. So-called “reflexive verbs” like *sich freuen* ‘delight’, *sich trauen* ‘dare’, for instance, behave like reciprocal *sich* in this respect (cf. [29]–[30]):

- (28) *IHN konnten die Studenten nicht leiden, seine Frau schon.*  
 him could the students not bear his wife yet  
 ‘The students didn’t like HIM, but they liked his wife.’
- (29) *Die Kinder versuchten, sich trotz der schlechten  
 Wettervorhersage auf die Schulferien zu freuen.*  
 the children tried SE despite the bad  
 weather.forecast on the holiday to look.forward  
 ‘Despite the bad weather forecast, the children tried to look forward to their holidays.’

- (30) *Beim Tanzunterricht lernt man, sich wie ein Gentleman*  
 at.the dancing lessons learns one SE like a gentleman  
*zu verneigen.*  
 to bow  
 ‘At dancing lessons one learns to bow like a gentleman.’

What these examples show is that occurrences of *sich* which are normally analyzed as (lexicalized) middle markers or “detransitivizers” (cf. [29] and [30]) exhibit the same distributional freedom within the Middle Field as reciprocal *sich* in examples such as (27), while they are barred from taking a position in the Forefield. In other words, we are dealing here with a general property of the topological organization of the German sentence. If we now assume, as we do, that there are two distinct *sich* lexemes in German, one of which is a verbal clitic functioning as a valency operator with the potential to express reciprocity, the fact that clitic *sich* need not be adjacent to the governing verb does not come as a surprise.

#### 4.2. The collective reflexive

In Section 2 we took note of the fact that there is a class of apparent counterexamples to our claim that stressed *sich* may not express reciprocal relations. In particular, the preposition *unter* ‘among’ followed by *sich* appears to admit of a reciprocal interpretation. Consider again example (8), repeated here as (31):

- (31) *Die Spieler wollten unter sich bleiben.*  
 the players wanted among SE remain  
 ‘The players wanted to remain among themselves.’

Before we attempt to provide an explanation for the seemingly exceptional behaviour of *sich* in examples like (31), it should be noted that we are dealing with a pattern that is considerably widespread in Europe. With a restricted set of prepositions, especially those meaning ‘among’ and ‘between’, many languages allow anaphors to be used in reciprocal contexts, even though normally these languages distinguish between reflexive and reciprocal pronouns in prepositional phrases. In English and Dutch prepositional phrases headed by prepositions like *among(st)* are in fact the only contexts in which reflexive pronouns may have a reciprocal interpretation (cf. [32] and [33] respectively). The examples in (34)–(36) show that “collective reflexivity” may also be expressed by elements that are otherwise incompatible with reciprocity in Italian, French, and Latin (on the interpretation of Latin *se*, cf. Section 5.1).

(32) English

*They started chatting among themselves.*

(33) Dutch

*Duitsland en Frankrijk verdeelden het land onder zich.*Germany and France relocated the land among SE  
'Germany and France relocated the land among themselves.'

(34) Italian

*Cominciavano a chiacchierare fra sé.*

begin.IMPF.3PL PREP chat between SE

'They started chatting among themselves.'

(35) French

*Ils ont fait des bêtises entre eux.*

they have done ART jokes between them

'They joked among themselves.'

(36) Latin (Rubenbauer and Hofmann 1989: 229)

*Civitatēs inter sē fidem et iūsiūrandum dant.*

tribes among SE loyalty and oath give

'The tribes promise each other loyalty.'

We would like to argue that in the composition of the sentence meaning for cases like (32)–(36) the anaphors should indeed be analyzed as expressing reflexivity. First note that the relevant prepositions (Latin *inter*, Italian *fra*, English *among*, *between*, etc.) impose the following selectional restriction on their complements: they have to denote groups partitioned into two or more (possibly atomic) subsets. Hence, a preposition like *among* cannot take a singular complement, since its lexical meaning makes reference to a group with more than one entity. The preposition then establishes a relation between these subsets. As far as the meaning contribution of *sich* in such cases is concerned, we can now say that *sich* refers to the entire group as a reflexive, while the reciprocal meaning component is contributed by the semantics of the preposition.

It is a consequence of this fact that those prepositions whose lexical meaning does not make reference to the internal structure of the set denoted by their complement are impossible in the construction at issue (cf. [37a] vs. [37b+c]). We can conclude that instances of collective reflexivity are not counterexamples to the generalization that German *sich* following a preposition cannot have a reciprocal interpretation.

(37) German

- a. *Die Spieler wollten unter sich bleiben.* (= [31])  
 ‘The players wanted to remain among themselves.’
- b. ?? *Die Spieler wollten vor sich bleiben.*  
 the players wanted before SE remain  
 ‘?? The players wanted to remain before themselves.’
- c. ?? *Die Spieler wollten auf dem Foto hinter sich stehen.*  
 the players wanted on the picture behind SE  
 stand  
 ‘?? On the picture, the players wanted to stand behind themselves.’

5. Historical developments

In the light of the hypothesis made in (19) above a number of new questions arise. If it is true that there are two lexical entries of *sich* – one of them a reflexive marker, and the other a middle marker with the *potential* of expressing reciprocity – we should try to determine how this situation has come about historically. Under the assumption that the observed asymmetry is the result of a formal and functional split in the historical development of a formerly monosemous pronominal element *sich*, there seem to be two options: first, *sich* may have formerly been used as a marker of both reflexivity and reciprocity without any major distributional restrictions, having lost the reciprocal readings in prepositional phrases (or, more generally, noun phrase positions). And second, it may have been used only as a marker of reflexivity at an earlier stage of development, so that the middle readings, including the reciprocal ones, are the result of an innovation. This innovation would then have been restricted to specific semantic or syntactic environments (direct and indirect object positions). These two possible developments are represented in (38):

- (38) a. loss of reciprocal reading in prepositional phrases
 

$sich_{REFL/REC}$	<	$sich_{REFL}$	(pronominal <i>sich</i> )
		$sich_{REFL/REC}$	(clitic <i>sich</i> )
- b. adoption of reciprocal reading in direct and indirect object positions
 

$sich_{REFL}$	<	$sich_{REFL}$	(pronominal <i>sich</i> )
		$sich_{REFL/REC}$	(clitic <i>sich</i> )

The data that we have found suggest (38b) as the correct answer. It seems that in all major Germanic and Romance languages the reflexive use of SE is older than the middle uses (including reciprocity). This is in accordance with the assumption frequently expressed in the relevant literature that a reflexive form is expected to develop middle meanings, while it is unexpected that a reciprocal marker should develop into a marker of reflexivity (e.g. Kemmer 1993, Heine 2000, Heine and Miyashita this volume). In the following we will present some data from Latin and earlier stages of Germanic that lend support to this assumption.

### 5.1. Reflexive and reciprocal readings of anaphors in Latin, Gothic and Old High German

The Classical Latin pronoun *se* was productively used as a marker of reflexivity, in both local and non-local contexts (“indirect reflexivity”, i.e. long-distance bound occurrences of *se*; cf. Rubenbauer and Hofmann 1989: 229). A relevant example is given in (39a). It could not, however, be used with a reciprocal meaning, at least not in written Classical Latin. Kühner (1976: 614–615) categorically excludes reciprocal readings of *se* for Classical Latin, but he points out that “popular speech does not always observe the strictly logical differentiations” (our translation, V.G. & F.H.). It seems, thus, that a semantic bleaching and distributional extension of *se*, which clearly manifests itself in Medieval Latin and the Romance languages, had already been under way in spoken Classical Latin.<sup>13</sup> In Classical texts, however, the generalization that *se* cannot have a reciprocal reading when standing by itself is very robust, and most if not all apparent counterexamples turn out to be instances of collective reflexivity (cf. Section 4.2). In fact, the collocation *inter se* ‘among themselves’ is a standard way of expressing reciprocity in Latin. A relevant example is given in (39).

(39) *Latin* (Rubenbauer and Hofmann 1989: 264)

- a. *Lēgātī ad Caesarem vēnērunt ōrātum ut sibī*  
 delegates to Cesar came to.ask COMP SE.DAT  
*ignōsceret.*  
 forgive

‘The delegates came to Cesar in order to ask him to forgive them.’

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13. In some idiomatic combinations *se* displays the behaviour of a middle marker already in Classical Latin, e.g. in *se convertere* ‘to transform oneself’, but such uses were not productive.

- b. *Video eōs inter sē amāre.*  
 I.see them among SE love  
 ‘I see them loving each other.’  
 [Terence Ad. 5, 3, 42; cited in Baldi 1975: 22]

Just like Latin *se*, the Old High German reflexive pronoun *sih* was only rarely used as a marker of reciprocity, and most authors do not use it at all in that function. Among the very few attested reciprocal uses of *sih* is the one given in (40) (from Notker’s *Martianus Capella*, cf. Behaghel 1923: 306). Usually, reciprocity was expressed by the prepositional phrase *untar in* ‘among them(selves)’ (cf. [42]), which was sometimes juxtaposed to *sih*. The “double PP” *untar zwisgen sih* ‘under among SE’ is also found in this function. Again, both collocations are clear instances of collective reflexivity. The reciprocal meaning of the whole construction does consequently not result from the (supposedly reciprocal) semantics of *sih*, but from the semantics of the whole prepositional phrase. In addition to those collective reflexive constructions, there are also frequent occurrences of *ein...ander*, parallel to *one...another* in English (cf. [43], and the Early Modern German example in [44], which is given by Plank this volume).

- (40) Old High German (Behaghel 1923: 306)  
*sie sih gehalset habetin*  
 they SE hug have  
 ‘They hugged (each other).’
- (41) *fluahhonte sih nalles uuidar-fluahhan, uzzan meer uuihan*  
 cursing SE not back-curse but more bless  
 ‘Not to curse those who curse us/\*each other, but rather to bless them.’  
 [Rule of Benedict 4, 10]
- (42) *int isuohenti untar in uuer iz uuari fon in uuer*  
 and seek.PART under them who it was of them who  
*sulih tati*  
 such did  
 ‘... and seeking among themselves the one of them who did such a thing.’  
 [Tatian, Gospel Harmony, 158,7]
- (43) *uuar unde gnada bechamen ein anderen*  
 verity and mercy met one another  
 ‘Verity and mercy met each other.’  
 Hänsel (1876: 28)

- (44) Early Modern German (Behaghel 1923: 410, quoted from Plank this volume: 367)

*offt be-scheisz wir beide an-ein-ander*  
 often be-shit we both at-one-other  
 ‘Often we cheat (be-shit) each other.’

In Wulfila’s Bible translation, reciprocal uses of the Gothic anaphor *sik* are likewise virtually non-existent (cf. also Wright 1910: 189–190). Behaghel (1923: 306) mentions example (45) as a singular occurrence of reciprocal *sik*. Generally, reciprocity is expressed only in combination with the adverb *misso* ‘reciprocally’ (cf. [46]). A reflexive occurrence of *sik* is given in (47).

- (45) Gothic

*gagēþun sis Judaieis ...*  
 agreed SE.DAT Jews ...  
 ‘The Jews had agreed (that)...’ [John 9, 22]

- (46) *galeika sind barnam þaim in garunsai sitandam jah*  
 equal are children art.dat in market place sit.part and  
*wopjandam seina misso jah qiþandam.*  
 speaking SE reciprocally and saying

‘They are like children who sit in the market place and talk to each other and say: ...’ [Luke 7, 32]

- (47) *jah auk þai frawaurhtans þans frijondans sik frijond*  
 and also the sinners the loving SE love  
 ‘Even sinners love those who love them.’ [Luke 6, 32]

Even though the ban on reciprocal uses of Latin *se*, Old High German *sih* and Gothic *sik* may not have been completely categorical, such uses were certainly marginal at best in written language, though they may have been more widespread in spoken language. We take this as a piece of evidence pointing to a beginning desemanticization of the various SE-forms. It seems, thus, that the development sketched in (38b) is basically correct.

As we will see below, there is still an important question concerning the development from reflexive marking to middle marking that needs to be addressed: Did reflexive *si(c)h* develop into a marker of reciprocity directly – was reflexive SE reanalyzed as reciprocal SE – or was the development “mediated” by a (very general) middle meaning? We will argue in the following that the second assumption is actually true, and that this fact is the key to an understanding of the distributional asymmetries described in Section 2.

## 6. Towards an (historical) explanation of the asymmetries in the distribution of *sich*

On the basis of what has been said above we can now come back to the starting point of our paper, addressing once again the question of why there are no reciprocal uses of German *sich* in prepositional phrases. First of all, the asymmetry in question has been “explained” by assuming two different lexical entries for *sich* that differ in terms of both distribution and meaning. This is summarized in (48):

- (48) There are no reciprocal uses of *sich* in prepositional phrases because . . .
- (i) PRONOMINAL *SICH* does not have the lexico-semantic potential to function as a marker of reciprocity, and
  - (ii) CLITIC *SICH* does not occur in prepositional phrases (is restricted to argument positions).

The assumption of two lexical entries for *sich* has been corroborated using synchronic (distributional) evidence in Section 4. In Section 5, we argued that the split in question is an innovation of modern Germanic and Romance languages, and that the reciprocal uses have been newly created, while at the same time the reflexive uses have been retained. However, a number of questions still remain open. First, we have claimed but not demonstrated that clearly defined meanings can be assigned to the two lexical items under discussion (clitic and pronominal *sich*). This issue is raised in (49a). Second, the assumption of a formal and functional split in the history of *sich*, and the question of why reciprocal readings have emerged in some environments but not in others, calls for a more detailed account of the historical processes leading to the formation of clitic *sich* (cf. [49b]). In this context, we can also address the key question of why the relevant developments have taken place in direct and indirect object positions, but not in prepositional phrases (cf. [49c]).

- (49) Questions to be answered
- a. What is the lexico-semantic potential of pronominal and clitic *sich*?
  - b. Under what circumstances has the development from pronominal to clitic *sich* taken place?
  - c. Why has that process been restricted to specific syntactic environments? (Why can clitic *sich* not occur in the complement position of a prepositional phrase?)

In what follows, we will address the questions in (49) in turn. First, we will give an account of the meaning of pronominal and clitic *sich* (Section 6.1); second, we will describe the process of reanalysis that has given rise to the formal and functional split described above (Section 6.2); and finally, we will explain why the process of reanalysis has been restricted to specific syntactic contexts (Section 6.3).

## 6.1. The interpretation of pronominal and clitic *sich*

### 6.1.1. Pronominal *sich*: A bound variable

In keeping with traditional Binding Theory, pronominal *sich* can be analyzed as an expression of category noun phrase that “stands for” an entity of type  $e$  and that fills syntactic positions associated with semantic roles. It is referentially dependent (cf. Reinhart and Reuland 1993: 658, Kiparsky 2002: 200), i.e. it cannot refer by itself and requires a syntactic binder (like NP-traces; cf. Reuland 2001). Under the hypothesis that subject positions are restrictor positions (e.g. Diesing 1992), the meaning of (50) can accordingly be represented as in (51). *Sich* is interpreted as a bound variable.<sup>14</sup>

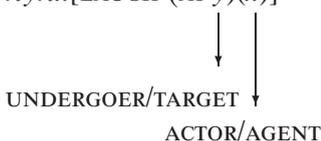
(50) *Hans lacht über sich.*  
 John laughs at SE  
 ‘John laughs at himself.’

(51) for  $x = \text{Hans}$ :  $x$  laughs at  $x$

(52) provides a representation of the argument structure of the (transitive) predicate *laugh*. Each of the two variables ( $x$  and  $y$ ) is associated with a semantic (macro)role. If there is an anaphor in the complement position of the preposition *über*, the relevant predicate has the form given in (53). Here, both argument slots are associated with the same variable. However, it is crucial to see that there are still two (semantic) argument positions, and two semantic roles.

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14. In our treatment of the interpretation of variables we follow Heim and Kratzer (1998: 92): “A variable denotes an individual, but only *relative to a choice of an assignment of a value*.” If there is only one variable (here,  $x$ ), an assignment can simply be regarded as an individual (some  $x \in D_e$ ). If *sich* is interpreted as a bound variable, this means that for any assignment  $g$ , both variables will necessarily be identified with the same individual. Accordingly, a fully explicit formula would look like the following: ‘For any assignment  $g$  in which  $x$  is mapped onto Hans,  $x$  laughs at  $x$ ’. For the sake of simplicity, we will simply write ‘for  $x = \text{Hans}$ :  $x$  laughs at  $x$ .’

(52) transitive predicate:  
 $\lambda y \lambda x [\text{LAUGH}(\text{AT } y)(x)]$   


(53)  $\lambda x [\text{LAUGH}(\text{AT } x)(x)]$   


Abstracting away from the distinction between coreference and variable binding (cf. Reinhart 1983), *Hans lacht über sich* is basically equivalent to *Hans lacht über Hans*. Each occurrence of the variable  $x$  in (53) is associated with a distinct semantic role. In a (neo-)Davidsonian interpretation (50) can accordingly be paraphrased as follows: ‘There is an event of laughing in which John is the Actor (or Agent) and John is (also) the Undergoer (Target)’.

The reason why pronominal *sich* cannot function as a marker of reciprocity was answered above by saying that it “does not have the lexico-semantic potential to function as a marker of reciprocity”. What does this mean? The crucial point is that *sich* cannot be interpreted as a marker of reciprocity *if it is interpreted as a bound variable* along the lines sketched above (for the notion of bound variable pronouns see Quine 1960; Hall Partee 1970; Evans 1980, later adopted by Chomskyan Binding Theory; cf. Reinhart 1983; Chomsky 1986). Consider (54) and the semantic representation given in (55):

(54) *Die Professoren lachen über sich.*  
 the professors laugh at/about SE  
 ‘The professors laugh at/about themselves/\*each other.’

(55) for all  $x \in \llbracket \text{the professors} \rrbracket$ :  $x$  laughs at  $x$

Under the assumption that the predicate *laugh* (*at*) assigns two semantic roles, (55) can be paraphrased (in a neo-Davidsonian fashion) as follows: for any  $x$ , if  $x$  is in the set of professors, then  $x$  is the Actor in an event of laughing  $e$ , and  $x$  is (also) the Undergoer in  $e$ .’ This paraphrase does clearly not allow for a reciprocal interpretation. It says that every professor laughs at himself/herself. The same point can be made with regard to the (conjoined) plural subject in (56):

- (56) *Hans und Maria lachen über sich.*  
 John and Mary laugh at/about SE  
 ‘John and Mary laugh at/about themselves/\*each other.’

(56) has two readings: first, in a collective interpretation of the conjunction *und* it says that (the plural referent) John and Mary laugh(s) at (the plural referent) John and Mary, so there is only one (plural) Actor and one (plural) Undergoer. In the second (distributive) reading, *und* distributes over the verb phrase, so (56) is equivalent to *John laughs at John and Mary laughs at Mary*. It should be emphasized that these two interpretations have nothing to do with the lexical meaning of *sich*; they are simply functions of the two possible interpretations of the conjunction *und*, which either distributes over the verb phrase, or else forms a plural subject.

A reciprocal reading of (56) (‘John laughs at Mary und Mary laughs at John’) is not available because the type of “cross-distribution” which is characteristic of reciprocity is not expressed in the sentence *Hans und Maria lachen über sich* as interpreted above. We consequently come to the following conclusion: if (pronominal) *sich* is interpreted as a “referentially dependent anaphor” in the sense of Reinhart and Reuland (1993), i.e. an element of category noun phrase that is interpreted as a bound variable, it cannot function as a marker of reciprocity.

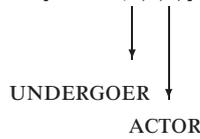
### 6.1.2. The interpretation of clitic *sich*: A middle marker

In this section we will argue that clitic *sich* is not an expression of category NP, but a valency-changing (quasi-derivational) element that indicates, in our terminology, “role-indifferent valency-reduction”. This basically amounts to saying that clitic *sich* is a (specific type of) *middle marker*. In the terminology of Kemmer (1993), it turns predicates describing two-participant situations into predicates describing one-participant situations (for a similar analysis, cf. Reinhart and Siloni 2005). Thus, clitic *sich* acts “detransitivizing”, in a ( $\theta$ -)semantic sense of that word. Accordingly, “middle-marked verbs” – i.e., verbs with clitic *sich* in the direct or indirect object position – assign only one semantic role. We argue that this role is maximally general and can be conceived of as a generalization over Actor and Undergoer in the tradition of Foley and Van Valin (1984: 29), Van Valin (1993) and Van Valin and LaPolla (1997: 141), and we will call it *Participant*. As will be seen, the Participant-role associated with middle-marked predicates is specified contextually, in interaction with the semantics of the verb it associates with (cf. Kaufmann 2004 on the interaction

between middle marking and verb semantics).<sup>15</sup> To illustrate with an example, consider the transitive sentence in (57). A neo-Davidsonian paraphrase of (57) is given in (58). The verb *verletzen* ‘hurt’ assigns two semantic roles, an Actor-role and an Undergoer-role. This is illustrated in (59).

- (57) *Der Hans verletzt den Fritz.*  
 DET Hans hurts DET Fred  
 ‘Hans hurts/injures Fred.’

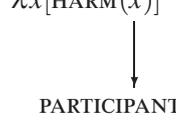
- (58) ‘There is an occurrence (event) of bodily harm in which John is the Actor and Fred is the Undergoer.’

- (59) *verletz-*:  $\lambda y \lambda x [\text{HARM}(y)(x)]$   


When clitic *sich* combines with *verletzen*, the resulting predicate becomes intransitive and, accordingly, describes a one-participant situation. It assigns only one semantic role, viz. the Participant-role. The middle-marked counterpart of (57) is given in (60). Again, a neo-Davidsonian paraphrase is given in (61). (62) provides the argument structure of the intransitivized verb *sich verletz-*.

- (60) *Der Hans verletzt sich.*  
 DET John hurts SE  
 ‘John gets hurt.’

- (61) ‘There is an occurrence (event) of bodily harm in which (only) John PARTICIPATES.’

- (62) *sich verletz-*:  $\lambda x [\text{HARM}(x)]$   


As has been mentioned, we take it that the Participant-role is specified contextually. In particular, it is interpreted *in accordance with the semantics of the relevant verb*. A “natural” interpretation is, by default, induced. In the case

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15. Like Kaufmann (2004), we take it that middle markers have a rather general meaning which is specified contextually. However, Kaufmann analyses the middle voice as indicating deviations from the canonical control patterns associated with a verb, while we regard the process of valency reduction as basic.

of (60), the most natural interpretation is that John gets hurt, since an event of “bodily harm” without an intentional Agent is conceivable, but not one without an Undergoer. If only John participates in such an event, it is consequently implied that he is the Undergoer. Note that we assume thematic roles to be assigned exhaustively by default, but not necessarily. This is why *only* is put in parentheses in (61). Moreover, it should be mentioned that there is, of course, a considerable degree of conventionalization in such combinations, which leads to the development of more specific lexical meanings. More relevant examples illustrating the operation of “role-indifferent valency reduction” are given in (63) and (64).

- (63) *Hans rasiert sich.*  
John shaves SE

‘There is an event of shaving in which (only) John PARTICIPATES.’  
Natural interpretation: ‘John shaves.’

- (64) *Dieser Wein trinkt sich gut.*  
this wine drinks SE well

‘This wine drinks well.’

‘For all events *e*, if *e* is an event of drinking in which this wine PARTICIPATES, then *e* is generally a good event of drinking.’

Example (63) is most naturally interpreted as designating an event of John’s shaving himself. It is not only conceivable that John shaves himself (by default), it is also expected. In (64), the situation is different. Crucially, it is *not* conceivable that an event of drinking wine happens without there being an animate drinker, so the default case of exhaustive theta-role assignment is not available (‘there is an event of drinking in which only this wine participates’). Given that (64) describes a generic state of affairs, it is interpreted as a (quasi) universal quantification over events, not an episodic statement of a fact. The most natural interpretation is as indicated in the paraphrase given above: ‘Every event of drinking that wine is a good event of drinking.’ By way of conventionalization, this reading is lexicalized. Note that this analysis correctly predicts that such “facilitative” middle situations always require an adjective or an adverb. Without the adverb *gut*, the sentence would be incomplete: ‘For all events of drinking in which this wine participates...’<sup>16</sup>

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16. As Daniel Hole has pointed out to us, our analysis overgenerates, since it predicts that a sentence like \**Dieser Wein trinkt sich in Prag* should be possible. As was said above, we take it that middle marking is generally associated with a considerable degree of conventionalization and/or lexicalization.

It should be mentioned that the interpretation of *sich* in combination with middle-marked verbs is not only restricted by the semantics of the verb *sich* combines with, but also by competing expressions like (non-reflexive) pronouns or generic ellipsis (cf. Gast and Hole 2003). Therefore, clitic *sich* often gives rise to relatively fixed meanings, not only as a result of conventionalization. For example, (65) is interpreted as ‘John gets angry’ not only because of exhaustive theta-role assignment by default, but also because the reading ‘John<sub>i</sub> annoys him<sub>j</sub>’ is blocked by the competing sentence in (66). Given that a fully explicit and “non-prolix” sentence describing the state of affairs that ‘John annoys someone else’ is available, this interpretation is blocked for the (less explicit) sentence in (65).

(65) *Hans ärgert sich.*  
 John annoys SE  
 ‘John gets annoyed.’

(66) *Hans ärgert ihn.*  
 John annoys him  
 ‘John annoys him.’

### 6.1.3. Middle marking in interaction with verb meanings

We can finally turn to the relevance of the analysis provided above for reciprocal readings of clitic *sich*. When clitic *sich* combines with so-called “naturally reciprocal verbs” (Haiman 1983, Kemmer 1993), it gives rise to reciprocal readings of those verbs. Consider the examples in (67) and (68):

(67) *Hans und Maria küssten sich.*  
 John and Mary kissed SE  
 ‘There was an event of kissing in which (only) John and Mary participated.’

(68) *Hans und Maria stritten sich.*  
 John and Mary argued SE  
 ‘There was an event of arguing in which (only) John and Mary participated.’

In both cases, the reciprocal reading is induced by default because role-indifferent valency reduction delivers a verb which describes a situation of kissing or arguing in which (only) the subject referents participate. Any interpretation other than the reciprocal one is hard to imagine. This is why clitic *sich* has

the potential to signal reciprocity: Role-indifferent valency-reduction not only allows but even enforces reciprocal readings of the relevant predicates.

A similar effect can be observed when middle markers combine with “typically other-directed predicates” (cf. König and Vezzosi 2004) that are not naturally reciprocal. For example, actions of killing are not typically reciprocal. Yet, if a relevant verb combines with clitic *sich* and has a plural subject, the resulting sentence will typically be interpreted as describing a reciprocal eventuality.

- (69) *Eines Tages werden sie sich totschiagen.*  
 one.GEN day.GEN will they SE slaughter  
 ‘Someday they will slaughter each other.’

The most natural interpretation of (69) is reciprocal because it is very hard to conceive that the persons under discussion slaughter themselves, which is the most prominent competing interpretation.

As a corollary of our analysis, clitic *sich* should not be called a “reciprocal marker” in a narrow sense. It simply reduces the (semantic) valency of a transitive predicate, and the reciprocal interpretation of the whole sentences is a function of the predicate meaning in interaction with contextual information or world knowledge. Clitic *sich* produces a predicate with a very broad semantic potential, and contextual information selects for a reciprocal reading only if this is the default interpretation (cf. Creissels and Nougulier-Voisin this volume).

## 6.2. Reanalysis: From anaphor to valency-marker

Having argued that pronominal *sich* does not have the potential to express reciprocity if it is interpreted as a bound variable, while clitic *sich* does have this potential because the process of role-indifferent valency reduction allows and even induces reciprocal readings in combination with specific verbs, we now have to tackle the question of *how* pronominal *sich* was reanalyzed as a middle marker. This process is well studied and has been described, among others, by Kemmer (1993), Heine (2000) and Heine and Miyashita (this volume). Typical contexts for such a reanalysis are sentences in which transitive verbs denoting typically self-directed activities (König and Vezzosi 2004) combine with a reflexive marker. Such two-participant situations can easily be reanalyzed as one-participant situations because the truth-conditions for both types of situations are identical, while the conceptualizations (or “modes of presentation”, in Frege’s terms) may differ. Consider the input structure in (70), with the source meaning given in (71). It can easily be reanalyzed as shown in (72) because *John washes John* and *There is an event of washing in which (only) John participates* are basically equivalent. The difference in the argument structure of transitive

*wäscht* and intransitive *wäscht sich* is indicated by subscripts on the predicate WASH.

- (70) INPUT *Hans wäscht sich.* ‘John washes SE.’  
 (71) SOURCE meaning (pronominal *sich*) for  $x = \text{Hans: WASH}_{\text{tr}}(x)(x)$   
 (72) TARGET meaning (clitic *sich*) for  $x = \text{Hans: WASH}_{\text{itr}}(x)$

Once *sich* has been reanalyzed semantically as a diathetic operator of valency-reduction, it extends its distribution and can also be used in contexts with a non-reflexive semantics – a middle marker has been newly created. At the same time, it loses some of the properties typically associated with an argument status (cf. Section 4), as well as the ability to be stressed. Other aspects of its distribution, however – like its position within the Middle Field – are not immediately affected (cf. Section 4.1). We interpret this as an instance of “inertia” in language change (cf. Keenan 2003).

### 6.3. Why has reanalysis been restricted to specific syntactic positions (direct and indirect objects)?

We have argued that the formal and functional split of *sich* into a (pronominal) marker of reflexivity and a (clitic) middle marker is responsible for the fact that *sich* cannot be interpreted as a reciprocal marker in prepositional phrases. The reason is that clitic *sich* is restricted distributionally and cannot take the complement position inside a prepositional phrase. What consequently remains to be shown is the following: Why is it that reanalysis of *sich* as a middle marker has been restricted to argument positions? The answer to be given in this section is: If pronominal *sich* occurs in a prepositional phrase, reanalysis as a middle marker is syntactically blocked by the preposition. Therefore, middle readings of *sich* have failed to develop in prepositional phrases. In order to see this point, let us consider (73) as an input to a process of reanalysis like the one described above:

- (73) *John vertraut auf sich.*  
 John relies on SE  
 ‘John relies on himself.’

Let us assume that (73) is semantically reanalyzed as meaning ‘John is self-confident’. In order to preserve the verbal character of the predicate in (73), we will use the paraphrase (involving a made-up verb) ‘John self-confides’. In accordance with the analysis provided in Section 6, (73) could thus be paraphrased as ‘There is a situation of confiding in which (only) John participates.’





plex expressions *durcheinander* ('through' + 'one another') and *auseinander* ('from/off' + 'one another'). It seems that the sequence is not at all used in its literal sense anymore ('through each other', cf. [77a]), but either adjectivally or adverbially with the meaning 'confused' or 'in a confused manner' (cf. [77b]), or as a noun meaning 'chaos' (cf. [77c]):

- (77) a. *?Die Wege im Schlosspark führen*  
 The paths in.the palace.grounds lead  
*durcheinander.*  
 through.one another  
 'The paths of the palace grounds cross each other.'
- b. *Alle redeten durcheinander.*  
 all talked through.one another  
 'Everybody talked in confusion.'
- c. *Am Ende gab es ein großes Durcheinander.*  
 at.the end gave it a big chaos  
 'At the end there was a big chaos.'

Similarly, *auseinander* 'from/off one another' shows signs of lexicalization. As an adverb modifying the verb *schreiben* 'write' in colloquial German it means 'as two words' (*Das schreibt man jetzt auseinander* 'This is now written as two words'), a meaning that is incompatible with the dynamic component of the preposition *aus* (for more progressive developments in the Bavarian dialect of German see Plank this volume).

What these cases show is that a preposition and a reciprocal pronoun can indeed be reanalyzed as a unit. The important point that we would like to stress, however, is that the relevant meaning changes are necessarily restricted to a particular combination of preposition and reciprocal marker. Accordingly, such a change cannot give rise to a middle marker, which of course must not be limited to specific prepositions in its applicability. The above generalization – a process such as (76) could only generate middle markers with severe distributional restrictions – thus holds, and is even strengthened by cases such as *durcheinander* and *auseinander*, since they show meaning changes that are idiosyncratic to each case of lexicalization.

Returning to our possible scenarios of reanalysis, we could, as a third option, assume that *sich* is reanalyzed as a middle marker, attached to the verb *vertraut*. This process is blocked for several reasons. First, in main clauses *vertrauen* and *sich* are not even adjacent:

- (78) [*Hans* [<sub>VP</sub> *vertraut* [<sub>PP</sub> *auf sich*]]]

But even if *vertraut* and *sich* are adjacent, as it happens in subordinate clauses, reanalysis of *sich* as a middle marker is not possible. The reason is that the complement position of the preposition would be empty in this case:

- (79) [weil Hans [<sub>VP</sub>[<sub>PP</sub> auf *sich*] *vertraut*]]  
 → [weil Hans [<sub>PP</sub> auf ... ] [<sub>V</sub> *sich=vertraut*]]

To summarize, reanalysis of *sich* as a middle marker in prepositional phrases is not possible because *sich* does not combine with the *verbal predicate*; it combines with the *preposition*, and the prepositional phrase, in turn, combines with the verbal predicate as a whole. Therefore, only the prepositional phrase could, in principle, be reanalyzed as a middle marker; but such contexts are certainly not frequent enough to trigger structural reanalysis, and the resulting expressions would be of a crucially different kind from those found in the object position of a transitive verb.

It should be noted that the explanation given above does not primarily exclude the possibility of deriving *reciprocal* readings in prepositional phrases. Rather, it says that *middle* readings of *sich* cannot be generated in prepositional phrases by way of reanalysis. Since we have argued that reciprocal interpretations of *sich* are merely a special case of middle *sich*, however, our explanation applies to the absence of reciprocal readings in prepositional phrases as well.<sup>17</sup>

## 7. A look at Slavonic languages

So far we have made the following argument: middle-marking German *sich* is the result of a process of reanalysis which has originated in a bound variable reading of *sich*, in the position of a direct or indirect object. Structurally, *sich*

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17. Heine and Miyashita (this volume) propose an explanation for the distributional restrictions of reciprocal *sich* in terms of grammaticalization theory and the notion of context extension. They claim that the new reciprocal meaning expressed by *sich* arose in a specific context and was only gradually extended to new contexts. The direct object position of transitive verbs is the first syntactic context in which a reciprocal interpretation, i.e. one of “the more grammaticalized use patterns” (Heine and Miyashita this volume) of *sich* became possible. The position of a prepositional complement, like the one of a coordinated or topicalized noun phrase, is then taken to be one syntactic context to which the new meaning has not yet been extended. This scenario is not incompatible with the one proposed in the present paper, but we think that it fails to capture the fact that all contexts from which reciprocal *sich* is excluded have one thing in common: They are argument positions with potential stress. Heine and Miyashita’s account does not theoretically exclude a situation in which reflexive *sich* is first reinterpreted in prepositional phrases.

has been reanalyzed as a valency operator which indicates middle marking or, in our terminology, “role-indifferent valency reduction”. Middle marking, in this sense, allows or triggers reciprocal readings of transitive predicates if such readings are compatible with, or invited by, the semantics of the relevant verb. A corollary of this analysis is that the historical process leading from reflexive marking to reciprocal marking has been mediated by reanalysis of *sich* as a middle marker. In other words, we take it that the process leading from reflexive to reciprocal *sich* was not as in (80a) but as in (80b). Reciprocity is only one of several sub-meanings of middle-marking *sich*.

- (80) a.  $sich_{ANPH} \rightarrow sich_{RECIP}$   
 b.  $sich_{ANPH} \rightarrow$ 

$sich_{MID}$
$sich_{RECIP}$
$sich_{FACIL}$
etc.

Should we exclude the grammaticalization path shown in (80a) then? The answer is clearly *No!* While the distribution and meaning of *sich* in German suggests the development shown in (80b), the “direct” reanalysis of a reflexive anaphor as a reciprocal marker is also possible (cf. Heine 2000, Heine and Miyashita this volume for a number of striking examples). However, it is of a crucially different nature from the type of reanalysis sketched above (reflexive  $\rightarrow$  middle). As we will try to show below, it takes place in a different type of context, and it gives rise to reciprocal markers with a completely different distribution, and with crucially different patterns of polysemy.

The development sketched in (80a) can be assumed to account for the distribution and interpretation of specific anaphors in some Slavonic languages. Unlike the anaphors of the Germanic and Romance languages described above, those of Czech and Polish do have reciprocal readings when occurring in a prepositional phrase. Relevant examples are given in (81) and (82).<sup>18</sup>

- (81) Czech<sup>19</sup>  
 a. *Vedi o sobe.*  
     they.know about ANPH  
     ‘They know about each other.’

18. See Wiemer (1999: 311) on the factors determining the choice between *się* and *siebie* in reciprocal contexts.

19. We thank Martin Haspelmath (p.c.) for drawing our attention to Czech. The examples are from Sven Siegmund.

- b. *Stojíme vedle sebe.*  
 we.stand next ANPH  
 ‘We stand next to each other.’

(82) Polish (Rothstein 1993: 745–746)

- a. *Przekonałem ich, że nic nie wiedzą o*  
 convinced.SG.M them that nothing not know about  
*sobie.*  
 ANPH  
 ‘I convinced them that they don’t know anything about each other/  
 themselves.’
- b. *Ciągle myślą o sobie.*  
 always they.think about ANPH  
 ‘They’re always thinking about themselves/one another.’

In addition to their reciprocal function exemplified in (81) and (82), the full anaphors of Czech and Polish are used only in reflexive contexts. Beside these full anaphors, both Czech and Polish also have light forms corresponding to *sebe* and *siebie* respectively, viz. *se* and *się*. These clitics have a semantics very similar to Spanish *se*, Italian *si* and clitic *sich* in German, i.e. they are basically middle markers. The full anaphors *sebe* and *siebie*, however, do not have middle uses. Wiemer (1999: 302–303) notices that “[b]y and large, *się* in lexical kinds of recessive diathesis [valency reduction, VG & FH] cannot be replaced by *siebie*.”

If we compare the full and clitic SE-forms of Czech and Polish to the corresponding Germanic and Romance forms, the following picture emerges: First, all languages have clitics that are used as middle markers; second, all languages have full anaphors that are used as reflexive markers. Consequently, the development in (80b) above seems to have taken place in all languages under consideration (note that the Czech and Polish clitics are both used in reciprocal contexts, too). The difference between Czech and Polish, on the one hand, and the other languages mentioned above, on the other, is that an *additional* process of reanalysis has taken place in the former, but not in the latter, languages: The anaphors *sebe* and *siebie* have been reanalyzed directly as markers of reciprocity, too, without a “mediating” middle meaning. This kind of reanalysis is crucially different from the one assumed for German above for two reasons. First, it has, in all likelihood, taken place in other types of contexts; and second, it has given rise to “genuine” reciprocal markers, rather than middle markers with the potential to express reciprocity.

Unfortunately, we cannot offer any relevant historical data confirming the type of development postulated above. Reciprocal uses of *sebe* are already at-

tested in Old Church Slavonic, so an empirical assessment of the actual historical processes seems to be outside the scope of observation. We conjecture, however, that the relevant process of reanalysis could have taken place in either of two scenarios. First, reciprocal readings of heavy anaphors may have developed in the context of collective plural nouns. A relevant example is given in (83).

(83) *The family was proud of itself.*

In a literal interpretation, (83) can be understood as ‘[The family]<sub>i</sub> is proud of [the family]<sub>i</sub>’. But given that the EXPERIENCER of pride is usually an individual rather than a group, while the group is the THEME in such predications, a sentence like (83) will most naturally be understood as ‘The family members were proud of the family’. This reading, in turn, seems to suggest (though not necessarily to entail) that ‘All family members were proud of all family members’, i.e. everybody was proud of every other family member, which corresponds to a “strong reciprocity”-reading (‘The family members were proud of each other’).

The second possible bridging context between reflexives and reciprocals may be instantiated in what we have called collective reflexivity. Remember the English example in (32) above, which is here repeated for convenience:

(84) *They started chatting among themselves.*

It is conceivable that collective reflexivity is reinterpreted as (genuine) reciprocity, and that this meaning is attributed to the element complementing the preposition (the anaphor), rather than the preposition itself. As has been mentioned, collective reflexivity is taken to be the most important interface between reflexivity and reciprocity by Heine and Miyashita (this volume). We believe, too, that it is an important aspect of the development of reciprocal markers, but we claim that it is not what has happened in German (cf. Note 17).

If one of the two scenarios sketched above is feasible (or maybe both of them), we would have a way of relating reflexivity and reciprocity directly to one another. This, of course, remains a conjecture at this point. Still, the hypothesis that reciprocal readings of Czech *sebe* and Polish *siebie* in prepositional phrases have resulted from “direct” reanalysis of both items as reciprocal markers, rather than from previous reanalysis as a middle marker, seems highly plausible to us. Moreover, we would like to point out that the development as assumed above (reflexive → reciprocal) would be predicted to be relatively infrequent, simply because the relevant configurations are rare in actual discourse. This could be taken as a possible explanation for the fact that reflexive → reciprocal reanalysis has taken place in Czech and Polish, but neither in most other Slavonic languages, nor in Germanic or Romance.

## 8. Conclusion: Different developments, different language types

We have argued that the distribution and interpretation of anaphors in Romance and Slavonic languages can be explained on the basis of the historical development of the relevant markers, and we have pointed out that there are two crucially different (and possibly completely unrelated) developments: (i) reanalysis of a reflexive marker as a middle marker, and (ii) reanalysis of a reflexive marker as a reciprocal marker. In order to account for the differences between the language types distinguished above – say, the German type versus the Czech type – we consequently have to make a distinction between two different aspects relating to the occurrence or non-occurrence of specific historical developments. First, there are *possible* developments on the one hand and *impossible* ones on the other. And second, we have to consider whether the possible developments have actually taken place. As we have shown, an anaphor in the object position of a verb *can* be reanalyzed as a middle marker. This process seems to be of considerable generality. By contrast, we have argued that reanalysis of an anaphor as a middle marker in the complement position of a preposition is *not* possible. These facts can be regarded as being more or less “universal” in nature. Finally, we have claimed that the direct reanalysis of a reflexive marker as a marker of reciprocity is also possible, though obviously much less probable. This process simply has not taken place in Germanic and Romance languages, which is not to say that it *may* not have taken place. These considerations are summarized in Diagram 1.

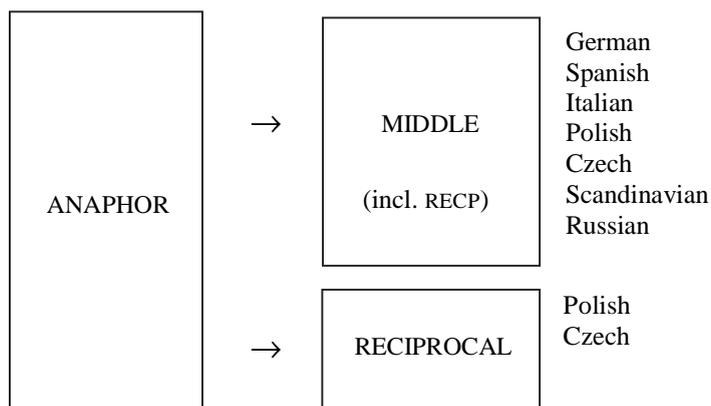


Diagram 1. Historical developments in Germanic, Romance and Slavonic

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# Thoughts on the origin, progress, and pronominal status of reciprocal forms in Germanic, occasioned by those of Bavarian

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## Abstract

Grammaticalised reciprocal markers in Germanic derive from combinations of a quantifier and the alterity word ‘other’, elaborating on a minimalist strategy of identical NP repetition suggesting rather than expressing reciprocity (‘earl[s] hated earl[s]’). Subverted by quantifier floating, they develop from free to tighter syntactic combinations and eventually into morphological units, tending towards complete inflectional deactivation. Sooner or later in all Germanic languages, the quantifier part of the reciprocal gets inside prepositional phrases (‘earls fought each/one with other’ > ‘earls fought with each/one other’). German continues this fusional theme by combining the reciprocal with prepositions in compounds; and in Bavarian it eventually gets reduced further to a bound stem limited to (partly lexicalised) combinations with a preposition, thus being barred from the direct object relation, unlike the reflexive. In tracing this overall diachronic scenario, the question is raised of the pronominality (or pro-NP-hood) of reciprocals in Germanic. It is argued that, regardless of their nominal and referential source, reciprocals here strongly incline towards becoming adverbs of attenuated, situational rather than personal reference, highlighting the relational (role reversal) rather than the (co-)referential component of reciprocity, as is common also elsewhere.

## 1. Where to expect pronouns

Reciprocals in Germanic languages, such as *each other/one another* in English, *einander* in German, *hver/hvor* (...) *annan* in Icelandic, or *anþar* (...) *anþar* in Gothic, are typically treated on a par with reflexives, themselves not always formally distinguished from personal pronouns. After all, reflexives often permit

reciprocal interpretations.<sup>1</sup> Nonetheless, there are certain subtle differences in the way they are controlled or bound which suggest that reciprocals in Germanic cannot be subsumed under exactly the same pronominal category as reflexives, sometimes summarily called “anaphors”.<sup>2</sup> In at least one contemporary variety of Germanic, Bavarian, they also differ morphologically and syntactically, and that difference seems rather drastic: reciprocals are effectively bound up with prepositions and are thus barred from a syntactic relation which is everywhere the first to accommodate reflexives – that of direct object.

One general constraint on pro-NPs,<sup>3</sup> especially those that can be characterised as definite (which naturally includes reflexives), is to do with their relational range: the occurrence of pronouns in oblique or adverbial relations implies that they can also occur in the non-oblique relations of direct and indirect object, which in turn implies that they can also occur as subject – but that latter relation is typically off limits for both reflexives and reciprocals, which need a subject to bind them. Owing to the referential semantics and discourse pragmatics of these syntactic relations, it is as subject and as direct and indirect object that those referentially dependent (= pro) forms whose referential range typically includes the ontological categories of persons and other animates and perhaps also

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1. Until the 16th and 17th century, when *-self* forms were becoming the rule as reflexives, they were also commonly found in reciprocal function in English – as in *Get thee gone: tomorrow we'll hear ourselves again*, one of the many instances in Shakespeare. Once firmly entrenched, new and purpose-built reflexives are perhaps inclined for a while to remain dedicated to just that single function.
  2. See Lebeaux (1983) and Everaert (2000), among others. For instance, they do not need to be bound by a surface subject in languages such as Dutch. In German, however, this property, which is rather uncharacteristic of anaphors, is shared by reciprocals and by reflexives (see Plank 1993 on passives of reflexives):

*Wurde einander/sich gewaschen?*

‘Was RECP/REFL washed?’

For such purposes Everaert assumes a special “pseudo-reciprocal” reading (and analogously there would have to be a “pseudo-reflexive” as well), which he characterises as “pronominal” rather than “anaphoric”. There does not seem to be anything pseudo about such readings, though: reciprocals (and reflexives) in such passives mean what they always mean – and that meaning may not be pro-ish at all, but comparable to meanings expressed in examples like this, as will be argued presently:

*Wurde hin und her gelaufen?*

‘Was hither and thither run?’

3. For simplicity the term “pronoun” will be retained here for pro forms which stand for entire noun phrases rather than for nouns on their own; and self-evidently, “pro” is not to be understood in the narrow technical sense of a particular kind of an empty NP.

things (as opposed to, say, places, times, manners, reasons, purposes, qualities, kinds, degrees, quantities, numbers, rank orders, properties, events, processes, or states) and whose pragmatic force is “gnarative” (rather than “ignorative”, as in the case of indefinites and interrogatives) should feel most at home. Referring to persons and things is the sort of business noun phrases specialise in; and the meaning of relevant predicates is such that their argument positions are likeliest to be filled by phrases of that type. Also, it is the core arguments of predicates where definiteness is crucially to be negotiated: sentences are typically constructed so that thematically salient, topical, hence typically definite NPs form their subjects and indirect objects, and direct object is the relation where the opposition between definite and indefinite is at full force.

It would therefore be rather odd if pronouns which refer to speaker, addressee(s), and persons and things under discussion, and which take the identifiability of their referents on the part of the addressee for granted (lacking though they are in the sort of descriptive detail that would typically be provided by nouns and their modifiers, as well as in the rigidly designating force associated with proper names) – i.e., deictic as well as phoric “personal” pronouns and those relatives of theirs that are controlled or bound in the manner of reflexives – were confined to oblique or adverbial relations. But this is what reciprocals are in Bavarian.

## 2. Obliquely reciprocal in Bavarian

In the Upper German dialect of Bavarian, as on occasion spoken by myself and more regularly by others, personal pronouns (PRON) can generally be used in reflexive function, but in 3rd person there is also the special reflexive form *se* (REFL, Standard German *sich*). The reciprocal (RECP), in its basic form, is *ànand(à)* ([v̥.nan.d(ə)]) – and it is not as similar to its Standard German equivalent as it might seem.

Like its equivalent *einander* in Standard German, it is related to (i) the numeral ‘one’ (*oàn-*), also serving as indefinite pronoun and (in the same reduced form as in the reciprocal, *àn-*) indefinite article and as identity word (‘same’), and (ii) the alterity word (*ander-* ‘other’). Like in Standard German, its bipartiteness is not fully transparent, though, insofar as the first syllable boundary (*à.nand(à)*) does not coincide with the original morpheme boundary (*àn-and(à)*), with the final consonant of the first morphemic part resyllabified as the onset of the second. Unlike in Standard German, the syllabic segmentation is confirmed by what seems a relic of earlier case inflection and also by a shortened form of the reciprocal’s first part: in combination with most prepositions, *ànand(à)* alter-

nates with *àrà**nand*(à), where *àrà-* looks like the dative singular feminine form of unstressed *à*(*n*) in its indefinite article use (Standard German *ein-e*, DAT.SG *ein-er*); in combination with some prepositions, *à**nand*(à) has a shorter alternant *nand*(à) (e.g., *bei-nand*, *mid-nand*). In view of the close association of the reciprocal with prepositions (to be discussed presently), *àrà-* can perhaps be accounted for as a fossilised dative, since this case is governed by most prepositions; the question would remain unanswered, though, why the feminine form *àrà* should have been generalised at the expense of masculine/neuter *àm/àn*. The temporal preposition *um* ‘at’ has an alternant *umàrà* for giving approximate times (*um zwoà* ‘at two o’clock sharp’, *umàrà zwoà* ‘at around two’); *-àrà* in this use presumably also derives from the indefinite article (a common source of approximatives), and it may have been an influence on the reciprocal too, where the *àrà**nand*(à) alternant is preferably used when semantic nuances are intended which are kindred to temporal-local approximation. At any rate, /*n*/ is present in all three alternants, *à.nand*(à), *àrà.nand*(à), and *nand*(à), and is thus naturally associated with the second part of the reciprocal in accordance with its syllabification, as the metanalysed final segment of *àn-* (*ein-*).<sup>4</sup> Once again like in Standard German, differing from the independent adjectival alterity word, the reciprocal’s second part is morphologically invariable; final *-à* vs. *-Ø* are free phonological variants, as is common also elsewhere in Bavarian.

The reflexive can appear as direct object (1a), indirect object (1b), or, accompanied by a preposition, as an oblique object or an adverbial (1c). The reciprocal can only appear as an oblique object or an adverbial (2b) and marginally as an indirect object (2b), but not as a direct object (2a); the corresponding meaning is either expressed by the reflexive forms (as in [1a/b], which are thus ambiguous) or paraphrastically, with the two components of the reciprocal form disassembled and coming in various number and definiteness variations [2a’].<sup>5</sup>

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4. In *à.nand*(à) and *àrà.nand*(à), /*n*/ could also be analysed as epenthetic to avoid hiatus. Though rather common in Bavarian, epenthetic /*n*/ is not really used with the dative singular feminine form *àrà* of the indefinite article. Also, epenthesis would not account for the short form *nand*(à) after prepositions with final consonant (*mid.nand*(à)). See Plank (2004) for a more serious effort to unravel the morphology of reciprocal and related forms in Bavarian.

5. As in German, definite articles inflect for number, gender, and case; but details not germane to the issue of reciprocity remain unanalyzed in glosses. Imperfect though it is in several phonological respects, the Bavarian orthography is essentially that used in Merkle (1975).

- (1) a. REFLEXIVE: D.OBJ  
*D’Buàm(à) hãm se / eànà gwaschn.*  
the.boys have REFL PRON washed  
‘The boys washed themselves/them.’
- b. REFLEXIVE: I.OBJ  
*D’Buàm(à) hãm se / eànà d’Hend gwaschn.*  
the.boys have REFL PRON the.hands washed  
‘The boys washed their hands.’
- c. REFLEXIVE: OBL  
*D’Buàm(à) sànd mid se / eànà zfriedn gwen.*  
the.boys are with REFL PRON content been  
‘The boys were content with themselves/them.’
- (2) a. \*RECIPROCAL: D.OBJ  
*\*D’Buàm(à) hãm ànand(à) gwaschn.*  
the.boys have RECP washed
- a’. *De oànà Buàm(à) hãm de andàn gwaschn.*  
the.PL one.PL boy.PL have the.PL other.PL washed
- a’’. *D’Buàm(à) hãm de oàn de andàn gwaschn.*  
the.boys have the.PL one.PL the.PL other.PL washed
- a’’’. *D’Buàm(à) hãm dà oà àn andàn gwaschn.*  
the.boys have the.SG one.SG the.SG other.SG washed
- a’’’. *D’Buàm(à) hãm oànà àn andàn gwaschn.*  
the.boys have one.SG.INDEF the.SG other.SG washed  
‘The boys washed one another.’
- b. RECIPROCAL: I.OBJ  
*D’Buàm(à) hãm ànand / se / eànà d’Hand gem.*  
the.boys have RECP REFL PRON the.hand given  
‘The boys shook hands.’
- c. RECIPROCAL: OBL  
*D’Buàm(à) sànd bei-(à)nand(à) aufn Hof gstandn oder*  
the.boys are with-RECP on.the yard stood or  
*hãm mid-(à)nànd(à) gràffđ.*  
have with-RECP fought  
‘The boys stood with each other in the yard or fought with each other.’

The reciprocal as indirect object is marginal insofar as many speakers avoid it entirely and those who do use it do not use it in all circumstances, with a curious constraint barring it in particular from imperatives:<sup>6</sup>

## (3) \*RECIPROCAL: I.OBJ

*Gebts eng / \*ànand d'Hand!*  
 give.IMP PRON RECP the.hand  
 'Shake hands (with each other)!'

The reflexive does not like to remain overtly unexpressed (even with grooming verbs, well-known as universally most likely to license the omission of a reflexive marker; [4a]); the reciprocal does, with the right kind of verbs, denoting activities which are typically other-directed – though again only if an overt reciprocal would be in an oblique or adverbial relation (especially with the preposition *mid* 'with'; [4b]) rather than a direct object, in which latter case an overt reflexive does duty for the reciprocal barred from this relation (4a).

- (4) a. *D'Buàm(à) hãm [∅] / se / eànà umarmd.*  
 the.boys have ∅ REFL PRON embraced  
 'The boys embraced (each other).'
- b. *D'Buàm(à) hãm [∅] gràffd.*  
 the.boys have ∅ fought  
 'The boys fought (with each other).'

The semantics (and pragmatics) of reciprocity has engendered a voluminous literature, and especially formal semanticists consider it a challenging task to sort out precisely who needs to have embraced whom, and to have been embraced by whom, for a sentence such as (4a) (suppose it is about a football team) to be asserted truthfully when a reciprocal reading is intended. Languages themselves do not seem to be overly bothered by such subtleties, and use their reciprocal forms (provided they have any, dedicated or otherwise) when a complex situation can be conceived of like this:<sup>7</sup> (i) a transitive (two-place) relation is instantiated at least twice (simultaneously or consecutively); (ii) in each instantiation the set

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6. This observation is due to Walter Breu.

7. This is meant to tease apart the component parts of schoolbook definitions of reciprocity ("there are two participants, A and B, and the relation in which A stands to B is the same as that in which B stands to A", to arbitrarily quote Lichtenberk 1985: 21), and to take care of certain complications when more than two participants are involved reciprocally, including in so-called chaining relations and individually even less interactive situations.

of participants (possibly only one) in one role is different from those in the other role; (iii) either set of participants remains the same, or at least shows some overlap, for all instantiations; but (iv) the roles in which they are involved in the different instantiations of the relation are inverted. It is these four notional components – plurality of instantiations of a relation, individual non-reflexivity, set identity or overlap, and role reversal – that the overt coding of reciprocity can be inspired by, collectively or selectively, with some components perhaps emphasised over others. It is also possible, however, for reciprocity to get profiled less distinctively. For example, presenting a complex situation as one with non-reflexive interrelations among sets of referents, and overtly expressing it accordingly, can be considered sufficiently suggestive to convey an approximate idea of reciprocity.

No meaning of this sort, elaborate or merely suggestive, is expressed in Bavarian in the frequent occurrences of (*à(rà)*)*nand(à)* in combination with prepositions. In (5), some such uses are illustrated,<sup>8</sup> and it should be noted that the essential quantitative requirement for even rather indistinctive reciprocity, namely that at least two participants are involved, is easily flouted (5b–d), sometimes with some subtle sort of reflexivity implied (5b/c).<sup>9</sup>

- (5) a. *D’Buàm(à) rennàn aufn Hof um-à(rà)nand(à).*  
the.boys run on.the yard around-RECP  
‘The boys run aimlessly hither and thither in the yard.’ (not ‘... the ones around the others’)
- b. *Dà Buà rennd / schded / schaud aufn Hof*  
the boy runs stands looks on.the yard  
*um-à(rà)nand(à).*  
around-RECP  
‘The boy (SG!) runs/stands/looks hither and thither/around/about in the yard.’
- c. *Dà Buà is guàd / ned rechd bei-(à)nand(à).*  
the boy is well not quite at-RECP  
‘The boy (SG!) is (not) in good order/state/shape’.

8. See Merkle (1975: 136–137) for more. The long *àrà-* forms seem particularly apt to emphasise the disorderliness of situations and especially of local relationships (Plank 2004).

9. In Standard German, *einander* can occur with the generic pronoun *man* and perhaps also certain collective nouns (such as *Mannschaft* ‘team’, *Paar* ‘pair’) as subject even though these are formally singular (witness verb agreement). Notionally, however, such subjects are plural, unlike those in (4b–d).

- d. *Dà Buà is no ganz durch-à(rà)nand(à).*  
 the boy is still quite through-RECP  
 ‘The boy is still quite confused.’

Thus, although *(à(rà))nand(à)* is glossed as RECP, it evidently is not a dedicated reciprocal marker that would perform just this one function in Bavarian, subject to the relational constraint that the participant to be reciprocally related to the subject is not a direct object: in productive, though sometimes idiomatic combinations with prepositions, *(à(rà))nand(à)* can express a range of meanings which are not easily related to reciprocity, at least synchronically. The uniform glossing is inspired by the hope that, if one tried hard, they could nonetheless be proven to be derivative of each other – or, more likely, to be variations on a wider theme of which reciprocity itself is but one variation.<sup>10</sup>

Bavarian is not alone, especially in the south of the German-speaking area, in using *einander* in combination with appropriate prepositions for meanings such as those illustrated in (5). Standard German, on the other hand, often avoids it for such non-reciprocal meanings and employs more specialised forms here – such as directional deictics (*um-her* in [5a/b]) or adverbs from suitable semantic spheres (such as collective: *zu-sammen* ‘together’ in [5c]). Now, while Bavarian is categorical about banning reciprocals as direct object, confining them to oblique/adverbial relations and perhaps marginally admitting them as indirect objects, Standard German and those varieties which share the non-reciprocal semantics of *einander* are not particularly comfortable with what is outlawed or dispreferred in Bavarian, either. While perfectly happy with dedicatedly reciprocal *einander* in prepositional constructions, especially in its informal spoken form Standard German is very reluctant to actually use *einander* as direct and also indirect object (I can’t remember having ever heard one) and resorts to the reflexive as an ersatz reciprocal in these relations.<sup>11</sup>

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10. In grammaticalisation scenarios for reciprocals, these would sometimes be derived from expressions for meanings like those illustrated in (5) (e.g., dispersive) rather than the other way round. In Bavarian and elsewhere in Germanic some such meanings are clearly secondary, but, as will be argued presently, this is not to say that strict reciprocity was the original semantic source.

11. This limitation goes unnoticed in König and Vezzosi’s (2004) detailed recent analysis of the syntax and (perhaps somewhat too strictly defined) semantics of reciprocity in Standard German. Owing to the rather limited exploitation of the relevant formal contrast, it is a somewhat academic question whether (spoken) German, in any of its varieties, is a “two-form reciprocal language” in the sense of Kemmer (1993: 109–119, building on Haiman 1983), where a “light” reciprocal (coinciding with the reflexive) expresses simultaneous instantiations of a relation (e.g., washing, embrac-

Where *einander* is prohibited everywhere, and the reflexive does duty for it (perhaps accompanied by an adjectival intensive element, to rule out non-reflexive/reciprocal readings), is in yet another relation where one would expect pro-NPs to be accommodable, that of attributives:

- (6) a. *Die Buben zerrissen ihre (eigenen) / \*einander*  
 the boys tore their (own) RECP'S  
*Schulhefte.*  
 exercise.books
- b. *Die Buben zerrissen die Schulhefte von einander.*  
 the boys tore the exercise.books of RECP  
 'The boys tore each other's exercise books.'

As seen from the translation, in English the reciprocal does occur as a genitive (not so the reflexive, though, for whatever reason).<sup>12</sup> In German, standard and regional and register varieties, it is again only in combination with a preposition that reciprocal *einander* can become an attributive (6b). As to the question of the word or phrase class of the reciprocal, it is worth noting that prepositions like *von* do not only take NPs as complements but also adverbs (e.g., *von oben/überall/weither/gestern* 'from above/everywhere/afar/yesterday'), including ones of a pronominal sort (*da-von* 'about [it]').

Given the diachronic background of reciprocals in Germanic, going the way as far as Bavarian does, or at any rate moving in that sort of direction, as German in general does, too, is perhaps not entirely unexpected, regardless of where other languages such as English seem to be headed. The question is whether the way

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ing, fighting) in what is conceptualised as essentially one single event, and a "heavy" reciprocal (*einander*) is temporally indifferent, thus also allowing a consecutive, multiple-event reading. The question would rather be whether verbs in construction with direct objects, disfavouring "heavy" *einander*, force simultaneous-instantiation reciprocal readings, and verbs in construction with obliques or adverbials, favouring *einander*, are less resistant to consecutive-instantiation readings.

12. The other Germanic languages tend to side with English in this respect, including East-Germanic, long-dead Gothic (Wright 1954: 189–190):

*unté sijum anþar anþaris liþus*  
 for we.are other other's limb  
 'for we are members of one another'

Of course, pronominal genitives (other than those of proper names) are unusual in German anyhow; also, the genitival form of *ander* in the supposed source construction would be *ander-en* rather than *ander-s* (as observed by Florian Haas and Volker Gast).

that is being taken is a grammaticalisation path of pronouns (or “anaphors”) – a path that pronouns have come or are going.

### 3. How reciprocals came to be bipartite in Germanic

Reciprocal markers, or at any rate those considered most dedicated and most strongly grammaticalised, are generally bipartite in Germanic: their first constituent is a quantifier (existential, dual, mid-scale, or universal: there is hardly one missing in Germanic as a whole; [7a]) or the alterity word (7b), and their second constituent is invariably the alterity word (to terminologically simplify its identity/alterity dialectics).

- (7) a. *one ... other* (or also: *the ones ... the others*), *both ... other*,  
*either ... other*, *several ... other*, *few ... other*, *many ... other*,  
*each ... other*, *every ... other*
- b. *other ... other*

This is not too different from what grammaticalised reciprocals commonly look like also elsewhere in not-too-ancient Indo-European, and to a certain extent the basic model would seem to have gotten around through borrowing, especially from Latin *alius ... alius*, *alter ... alterum* etc. (or also Greek ἀλλήλους < ἄλλοι ... ἄλλους, presumably the direct inspiration behind ‘other other’ in Ulfila’s Gothic), rather than multiple independent inventions. But then, being formally composite – consisting of two (often identical) affixes, words, phrases, or indeed clauses – is a frequent design feature of reciprocal marking in general.<sup>13</sup>

Such reciprocals thus consist of words which existed, and continue(d) to exist, independently and with meanings of their own. These could be pressed into service as reciprocal markers because, owing to their primary functions (quantification, identity/alterity), they naturally lent themselves to efforts towards the referential elaboration of NPs when reciprocity, with its four semantic components as distinguished above, was felt to be in need of greater expressive distinctiveness. In a nutshell, omitting nearly all descriptive detail and some intra-Germanic difference, the developmental scenario is as follows.

Originally, there was nothing remotely like a dedicated reciprocal “pronoun” in Germanic, nor anywhere else in earliest Indo-European. Indeed, no matter how culturally salient, Germanic GRAMMAR hardly recognised the notion of

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13. This is confirmed by Lichtenberk (1985, 1994), Kemmer (1993: 95–127), Frajzyniegi and Curl (2000), and most comprehensively by Nedjalkov, Geniušienė and Guentchéva (2007), superseding Potter (1953).

reciprocity at all, however conceptually inelaborate. Capitalising on the common themes of role reversal, and set co-reference/overlap (and abstracting away from what was different: those involved in opposite roles individually being the same referents or different ones; a transitive [two-place] relation instantiated only once or more than once), reciprocity could be expressed like another kind of relationship, reflexivity, which already had its own, though not necessarily distinctive grammar, viz. personal pronouns, specialised reflexive pronouns, or originally special verbal inflections (the middle voice of Indo-European, essentially obsolete already in earliest Germanic). Otherwise reciprocity fell to the responsibility of the lexicon rather than of grammar.

It could be expressed, first, through verbs of inherently reciprocal meaning (i.e., symmetric predicates such as ‘meet’, ‘wrestle’, ‘agree’, with or without a reflexive marker).<sup>14</sup> Second, it could be implied through verbs of appropriate relational meaning used with non-singular subject and with no object specified (‘they greeted [each other or someone else, depending on context]’). Third, notions more or less closely approximating that of reciprocity, in the four components of its elaborate conceptualisation, could be conveyed through adverbs or verbal particles (i) for collective action or cooperative or competitive interaction (such as ‘together’, ‘in common’, ‘between’, ‘inter-’), without further relational or referential elaboration of the theme of role reversals, or (ii) for role reversal (such as ‘mutually’, ‘reciprocally’, ‘by turns’, ‘alternately’, ‘vice versa’), often derivative of notions of change, exchange, or back-and-forth movement (thus, e.g. Latin *reciproc-us* ‘returning, going backwards and forwards, as typically the ebbs and floods of the sea’ < \**re-co+pro-co-* ‘back-wards+forwards’;<sup>15</sup> *mūtuō* ‘mutually’, related to *mūtāre* ‘move, shift, exchange’). If there was anything grammatically peculiar about such adverbs conveying reciprocal-like meanings, then it was that they could not only be used in addition to a pronominal object (8a), but also without one (8b).

- (8) a. *They hated them[selves] together/mutually.*  
 b. *They hated together/mutually.*

Usually the relevant verbs would license object omission for reciprocal or reflexive readings even without a clarifying adverb; but on the face of it it could

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14. The related theme of comitatives accompanying symmetric predicates, or predicates conceptualised as symmetric, to express reciprocal situations has been developed elsewhere (Plank 2005).

15. Which is rather reminiscent of the Mandarin way of expressing reciprocity through the deictic verbs ‘to come’ and ‘to go’ in combination (Liu 2000).

seem as if in (8b) the adverb was not used without, but instead of, a pronoun, performing a referential function as well as its inherent relational one.

The closest and most explicit rendering of the notion of reciprocity is through conjoined sentences of identical lexical content and parallel structure, only with the roles of the participants inverted, and perhaps with the corresponding NPs contrastively emphasised, with referential-relational identity or similarity underlined by an appropriate adverb, and with the full NPs replaced by anaphoric pronouns in the second conjunct:<sup>16</sup>

- (9) *The earl hated the queen, and the queen/the latter/she hated the earl/  
the former/him (likewise).*

Along these lines, with coordinate constructions and anaphoric pronouns available anyhow, no special grammatical (or lexical) means are in fact required for this new purpose. When the referents in a reciprocal relationship are identically categorised, it would be advisable to make clear that the referents are nonetheless distinct; but for this, too, existing words for identity and alterity can conveniently be drawn on:

- (10) *The (one) earl hated the (other) earl, and the other/latter (earl) hated  
the one/former (earl).*

However, although recourse can always be had to such a conjoining strategy, and presumably always was, it is as cumbersome as it is explicit. Everything lexical in the second conjunct, both referential expressions (their descriptive content reduced through pronominalisation) as well as the designation of the relation between them through the verb, is redundant. Special expressive effort would only need to be expended on stating or implying that the relationship is duplicated, with the same referents but with their roles reversed. The grammar of reciprocity in Germanic, taking off from a state where there was none, can indeed be made sense of diachronically as attempts to negotiate some middle ground between the ever-pressing and forever-irreconcilable demands of clarity, exemplarily met by (9) and (10), and simplicity.

The most drastic simplification of whole-sentence repetition is to drop the second sentential conjunct entirely:

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16. Though clearly covering reciprocity in general, including its weakest version (technically known as “inclusive alternative ordering”: e.g., *The earls gave the measles to each other*), this rendering is especially apposite for consecutive-instantiation, separate-event readings (‘and then’) and with the “chaining” subtype of reciprocal situations – e.g., *The earls followed each other*: A followed B, B followed C, C followed D, etc. (Langendoen 1978, Lichtenberk 1985).

(11) *Earl(s) hated earl(s).*

This minimalist strategy of identical NP repetition is attested at the oldest stages of all Germanic languages (and elsewhere, within Indo-European and outside),<sup>17</sup> and has everywhere remained an option until today. It was most effective before articles became obligatory in Germanic. With no such determiners around, singular and plural NPs could easily get generic or all-quantified readings – and these subsume reciprocal readings: for if all earls, or earls in general, hate all earls, then earl *A* will hate earls *B, C, D*, and the whole rest, and among those in turn hated by earl *B* will inevitably also be earl *A*, and so forth for all others in relation to each other. A reflexive reading is ruled out by the subject NP being repeated in full rather than being pronominalised. However, precluding the reading that has some earl(s) hate some other earl(s), without this feeling being reciprocated, would have to be left to the context. A more general drawback of the strategy of identical NP repetition is that it does not work when the participants in a reciprocal relation are differently categorised: from ‘earl(s) hated queen(s)’, it is asking for too much to infer that the same relation also obtained in reverse between the same referents (unless specially pointed this way by adverbs for collective action or role reversal).

The loss in expressive power and context-independence vis-à-vis the maximalist strategy could, however, be compensated by adding quantifiers and/or identity and alterity words to the NPs judiciously, so as to get across as much as possible of the force of the second sentential conjunct in (9) or (10).

Already in a variation of the minimalist strategy, instead of the subject NP being repeated in full, the alterity word could step in – as in this characteristic example from Old English, suggesting that initially contextual support from identical NP repetition was appreciated (Visser 1963: 443, Mitchell 1985: 117, neither noting the reciprocal force of NP repetition itself):

- (12) *Ne bearh nu foroft gesib gesibban*  
 not protects now often kinsman.NOM.SG kinsman.DAT.SG  
 ... *ne broðor oðrum.*  
 ... nor brother.NOM.SG other.DAT.SG  
 ‘Neither kinsmen nor brothers protect each other now.’

To strengthen the reciprocity components of referential distinctness and plurality of instantiations, quantifiers were added to subjects, in the standard ways

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17. In historical handbooks it goes often unnoticed, presumably because it is syntactically so inconspicuous. Proper documentation would be desirable, also for other parts of the diachronic story told here, but is beyond the modest limits of the present paper.

for quantified NPs (without or with determiners; with nouns as heads or with quantifiers themselves as heads in partitive constructions).

(13) *One/either/each/... earl hated (the/an) other*

Unless an appropriate adverb was added, it was left to inference that roles were supposed to be reversed in the multiple interrelations; but that inference was strongly invited through “definite” quantifiers (like ‘one’, ‘either’, ‘each’, or ‘all’, but not ‘some’), rendering reference exhaustive for a given domain: when every relevant referent falling under a categorisation given through a noun is in a given relation to every other referent so categorised, each relationship contracted between any partners will perforce have its inverse for the same partners.

Differently categorised referents (‘earls hated queen’) remained a problem. What helped to solve it without much ado was an option Germanic grammar provided for quantifiers anyhow, independently of reciprocity: they could move after their NPs (14a) or float away from them rightwards (14b).<sup>18</sup>

(14) a. *The earls one/either/each/... hated (the/an) other.*  
 b. *The earls hated one/either/each/... (the/an) other.*

With the quantifier sufficiently far away to take scope over them both, differently categorised referents could now conveniently partake in this mode of half-way explicit reciprocal expression when they were joined in coordination to form one set, having plural reference like a simple NP:<sup>19</sup>

(15) *The earl and the queen hated one/either/each/... (the/an) other.*

Quantifier floating is here invoked as one episode in the history of reciprocals in Germanic – a rather incidental one at first, though not without its immediate benefits (see [14]). A rule of this kind has variously (from Dougherty 1970/71, 1974 and Fiengo and Lasnik 1973 to Heim, Lasnik and May 1994, and later) been assumed to be still active in the synchronic grammar of Modern English. However well motivated it may be syntactically to derive structures like those

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18. The equivalent of (14b) with partitive quantification has a resumptive pronoun; to illustrate from Old English (Visser 1963: 444):

*ða leorning-cnihtas beheoldon hyra ælc oðerne*  
 the apostles.NOM.PL beheld they.GEN.PL each.NOM.SG other.ACC.SG  
 ‘The apostles beheld each of them the other.’

19. The same effect could have been produced without coordination, though at the expense of an unusual accumulation of quantifying and similar words at the end of a sentence: *The earl hated the queen one/either/each (the) other.*

of (14b) from ones like (13), the argument that these latter yield a plausible compositional semantics of reciprocity is not the strongest point of such an analysis, neither synchronically<sup>20</sup> nor diachronically. Assuming that the semantics of reciprocity is to do with the four components identified above, then it is questionable whether they were all overtly expressed, compositionally or otherwise, when quantifier-*other* combinations were first formed, elaborating on the identical NP repetition strategy. Especially role reversal was only implied, at least initially: this component could be contributed by adverbs such as ‘mutually’ or ‘reciprocally’. That eventually these came to be omitted, as a rule if not obligatorily, may suggest that the quantifier-*other* combination itself had taken responsibility for this part of reciprocal meaning. On the other hand, since the adverbs which could initially supplement quantifier-*other* were not only ones for role reversal but also for collective action and interaction (‘together’, ‘between’, etc.), it is plausible to assume that the reciprocalish meaning that indeed was expressed by these means – adverbial alone, quantifier-*other* with optional adverbial, then without – was a rather inelaborate one of non-reflexive interrelations among subsets of the referents identified by the subject.

There remains the question of the *pro* status of these newly formed bipartite reciprocals. Their constituents are not personal pronouns or ones with similar referential functions, such as reflexives or possessives. At least, quantifiers and the alterity word are of a nominal rather than, say, of an adverbial kind – although there is a grey area, illustrated by (8b) above, where role-reversing and common-action/interaction adverbs and subject-bound pronouns for set identity/overlap are in ostensibly free variation. And since referentially and syntactically they share more with pronouns than with nouns, it would not seem inappropriate to characterise them as referentially dependent, in line with the macroclass of pronouns, with individual non-reflexivity and set identity or overlap as their referential specialisation. (Perhaps equivalently, floated quantifiers as well as the alterity word could be analysed as being accompanied by a *pro* element establishing some sort of set reference: ‘earl[s] hated [other PRO]’ [11], ‘the earls hated [one/either/each PRO] [(the/an) other PRO]’ [14b].) If, however, the meaning of role reversal is also to be attributed to these reciprocal markers, presumably in combination rather than individually, they would then have a relational, hence verb-related function on top of a (co-)referential one – which is more than what is usually expected of *pro*-NPs.

As to the morphosyntactic status of composite reciprocals, both the quantifier after flotation and the alterity word were each a phrase of their own to begin with – that is, NPs. Everywhere in Germanic, their early phrasal independence

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20. See Dalrymple, Mchombo and Peters (1994) for such criticism.

from each other got curtailed, sometimes completely. Once able to combine with determiners just like quantifiers and the alterity word would do on their own, their determiners got either omitted or became invariable and were reanalysed as part of the reciprocal (as in English *an-other*). Either phrase had been assigned its own case externally: the quantifier phrase used to be in the nominative in agreement with the subject NP it had floated away from, and the *other* phrase was accusative, dative, or genitive, depending on the verb it was governed by. Where the nominative was morphologically unmarked, or case inflection on quantifiers was lost anyhow, such independent case assignment was not such a conspicuous obstacle when quantifier and alterity word headed towards univertation, as they everywhere seemed destined to. Whatever overt inflection quantifiers possessed, it got reduced or eliminated on their way towards losing their independence as words and being downgraded to first constituents of compounds – or indeed prefixes, to judge by the main stress, which goes on the alterity part (*each Other*, *eiN-ANder*, *hver ANnan*, etc.) as per Germanic stem stress, rather than on the quantifier part, as it ought to if the compound stress rule were operative. Word-final constituents of compounds in general are not immune to inflection in right-headed words, and even less so stems in prefix-stem constructions; still, the alterity word, once regularly inflecting for number and gender as well as (verb-governed) case, would not hesitate long to surrender inflection, too.<sup>21</sup> Occasionally, slight losses in phonological substance were incurred as quantifiers and alterity word were univertated. And their increasingly close cohesion is also unmistakable from syllabifications in languages otherwise reluctant to resyllabify final consonants across morpheme, let alone word boundaries (such as German: *ei.N-AN.der*, but *ein .ANder Mal* ‘an other time’).

The clear trend in Germanic, thus, was towards an inflectionally deactivated, invariable reciprocal word (if a bipartite one, with both parts still recognisable), as had been the role-reversal and common-action/interaction adverbs of old. Ending up uninflecting like this, eventually to be reduced to mere affixhood, is a common fate in grammaticalisation – though not really for pronouns, usually the most highly inflected words of a language. Reflexives of sufficiently long standing to have generalised one single form (the unmarked: 3rd singular neuter) are the most obvious exception among grammaticalised pronouns in lacking inflection. But then, it is not uncommon for such invariable reflexive pronouns (or “anaphors”) to be about to turn into verbal markers, and perhaps shed their referential function.

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21. As mentioned earlier, reciprocals can be in the genitive (except in German); but the question is whether this is an inflection retained or rather innovated.

#### 4. How quantifiers got past prepositions

In this thumbnail sketch of the genesis of bipartite reciprocals in Germanic, ‘to hate’ and ‘to protect’ were used as examples of multiply instantiated relations. But it is not only subjects and (accusative, dative, genitive) objects in direct construction with a transitive verb that can be reciprocally interrelated: subjects and oblique objects or adverbials can be, too, with a preposition supplementing the verb in specifying the relation between them. However, although such circumstances are slightly more complex, they do not interfere with the development of quantifier-*other* reciprocals – up to a point:

- (10') *The (one) earl fought **with** the (other) earl, and the other/latter (earl) fought **with** the one/former (earl).*
- (11') *Earl(s) fought **with** earl(s).*
- (12') *Earl(s) fought **with** other(s).*
- (13') *One/either/each/... earl fought **with** (the/an) other.*
- (14') a. *The earls one/either/each/... fought **with** (the/an) other.*  
 b. *The earls fought one/either/each/... **with** (the/an) other.*

That crucial point comes when the quantifier is to float away from its NP to team up with the alterity word. Although quantifiers can float off as far as into sentence-final position (‘both earls talked with the queen’ → ‘the earls both talked with the queen’ → ‘the earls talked with the queen both’), just floating past a preposition and no further, thus intervening between a case governor and its governed NP, has never been an option in Germanic (\*‘the earls talked with both the queen’). But precisely this is destined to be the quantifier’s landing site when the preposition governs the alterity word in reciprocal constructions:<sup>22</sup>

- (14') c. *The earls fought **with** one/either/each/... (the/an) other.*

The Germanic languages differ greatly among each other, not in letting or not letting the quantifier get past prepositions, but in how early or late this feat was accomplished. Reciprocal constructions like (14’c) are attested earliest in

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22. Jacob Grimm was perhaps the first to be amazed at such an unorthodox ordering: “und, was das sonderbarste ist, die *andern* oder *anderm* regierende praeposition kommt vor *ein* zu stehen, z.b. *sie* [...] *reden mit einander* f[ür] [...] *einer* [...] *redet mit dem andern*” (1831: 82). If it is the quantifier that is seen as (diachronically) moving, as it ought to be, then the marvel of course is the other way round: “*ein* kommt nach der praeposition zu stehen”.

German (as early as Old High German), quite some time later in English (since the mid-17th century at the earliest),<sup>23</sup> and in Icelandic it is only recently that internalising the quantifier is becoming more popular than keeping it external to the prepositional phrase (as in [16b] vis-à-vis [16a]; Þráinsson 1994: 172–173).

- (16) a. *Strákarnir tala aldrei hvor við annan.*  
 the.boys.NOM talk never each.of.two.NOM with other.ACC  
 ‘The boys never talk to each other.’ (*hvor* is nominative, in agreement with the subject; *annan* is accusative)
- b. *Strákarnir tala aldrei við hvorn annan.*  
 the.boys.NOM talk never with each.of.two.ACC other.ACC  
 ‘The boys never talk to each other.’ (with *hvorn* now also accusative)

The later the internalisation, the more a language still vacillates between the old and the new order. It can be confidently predicted that Gothic would have gone the same way with its *anþar-anþar* reciprocal, given a little more time to find it.

What it is harder to be confident about is the reasons or conditions why some Germanic languages were so much faster than others in this rather extraordinary flotation.

As is illustrated with the Icelandic examples in (16), an inflectional dilemma is created when the quantifier unorthodoxically gets into a prepositional phrase: outside its case is determined by agreement with the subject, but inside it is in the domain of prepositional case government, just like the alterity word always was. As seen in (16b), the latter is winning out in contemporary Icelandic. In Old High German, on the other hand, this same pattern (17a) was from early on in competition with another, simpler one (17b; both examples from Notker the German), with the quantifier uninflected in its bare stem form and with only the alterity word overtly showing the case governed by the preposition (Behaghel 1923: 409–410).

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23. On the evidence in Mitchell (1985), Mustanoja (1960), and Visser (1963). At about the same time, reflexives were discontinued in reciprocal function – which perhaps suggests that it was only then, when both their parts were included in a prepositional phrase, that *each other* and *one another* were recognised as sufficiently grammaticalised reciprocals in their own right. Supporting evidence comes from restrictions on number and definiteness, which are only enforced when the reciprocal as a whole is after the preposition:

*The earls fought one/the one(s) with another/the other(s)*

*The earls fought with one/\*the one(s) another/\*the other(s)*

- (17) a. ... *wie sehont siu zu ein-em ander-n*  
 ... how look they at one-DAT.SG other-DAT.SG  
 '... how they look at each other.'
- b. *sie ligen obe ein ander-en*  
 they lie above one other-DAT.SG  
 'They lie on top of each other.'

Even when outside the prepositional phrase with *ander-*, as was also common in Old High German, *ein* had early shown an especially strong inclination to shed its inflection:

- (18) *daz ein vome ander-n was geborn*  
 that one from other-DAT.SG was born  
 'that one was born from the other' (instead of regular *ein-er*)

Thus, irrespective of the continuing availability of nominal inflections for both its chosen quantifier (*ein-*) and the alterity word – a trait shared with even more conservative Icelandic, whereas English could have gotten out of the dilemma far more easily, owing to the earlier loss of subject vs. object case inflections – German seemed plainly determined to get itself a close-knit, one-word reciprocal fast, with its first part inflectionally deactivated right from the start and with the second part attaining invariability soon after.

So far as the relative chronology of events in the respective Germanic languages can be reliably determined, two trains of morphosyntactic developments appear to coincide or to be overlapping, both occurring early in German and later elsewhere: (i) quantifier and alterity word behave more and more as a unit, as one phrase and eventually one word, even if sometimes still discontinuous (as when interrupted by a preposition); (ii) this unit can form the complement of a preposition. The preferable interpretation would seem to be that unit-formation got underway first, and then licensed the inclusion of the whole unit into a prepositional phrase – with its parts at first still sufficiently autonomous to each inflect for the case governed by the preposition (as in Modern Icelandic and as one possibility in Old High German). That is, quantifier floating, up to that point instrumental in getting the two parts of the reciprocal into close contact, would not have to be invoked to also, in a rather extravagant move, get the quantifier inside a prepositional phrase, for it to begin to coalesce with the alterity word in this environment.

## 5. How reciprocals got attracted to prepositions

The first Germanic language to unite both parts of the reciprocal after prepositions, German was poised to take matters further. Other Germanic languages so far show no inclination to follow its example; but then they were lagging behind in the prepositional episode, too.

Itself the result of univerbation, the bipartite reciprocal *einander* felt so at home in this environment of prepositions that it fused with them to form what to all intents and purposes are compounds. Their word class, on distributional grounds, is clearly that of adverbs, whatever kind of word *einander* used to be on its own (recall that prepositions are not limited to NPs as their complements, but take adverbs as well). Stress is perhaps not such a reliable indicator of compound status because it is variable (*GE.gen.ei.nan.der* vs. *ge.gen.ei.NAN.der* ‘against each other’); nonetheless, main stress on the preposition, as per compound stress rule, would seem to be the unmarked alternative, unlike in prepositional phrases (*ge.gen an.DRE.as/IHN/SICH* ‘against Andreas/him/himself’). More tellingly, unlike prepositional phrases (*\*das Gegen-Andreas/ihn/sich* ‘the [state of being] against Andreas/him/himself’) and like words of a similarly adverbial nature (*das dauernde Vorwärts und Rückwärts, Hin und Her* ‘the constant back and forth, hither and thither’), combinations of prepositions and *einander* can be productively converted to nouns (*das Miteinander und Gegeneinander* ‘the [state of being] with each other and against each other’).<sup>24</sup> As *ein* in reciprocal constructions had long been inflectionally deactivated, there was no obstacle to fusion from internal inflection under outside influence (agreement with subject). Instead, special encouragement for such univerbation may have come from a model: “pronominal” *da* and *wo* are likewise joined with prepositions in compounds, though these morphological constructions differ, also from the corresponding syntactic ones, in that the prepositions come last (*da-mit, wo-mit* ‘there-with, where-with’<sup>25</sup> vs. *mit ihm, mit wem* ‘with him, with whom’).

The univerbation of *einander* with prepositions has apparently happened quite early. In Middle and Early Modern High German *ein* in *einander* was occasionally misanalysed as the preposition *an* with which it had become near-homophonous in southern varieties (19a); and that same preposition could also

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24. These conversions are to be distinguished from nominal compounds with prepositions as first members (like *Gegen-gift* ‘antidote’); personal pronouns look like they can be second members of such compounds (*Über-ich* ‘super-ego’), but arguably they need to be converted to nouns first.

25. These translations are misleading in their localist implications, as will be clarified presently.

be vacuously added where no preposition was called for, as with verbs taking direct objects (19b) (Behaghel 1923: 410).

- (19) a. *an ander ruorten sich diu knie*  
 at other touched REFL the knees  
 ‘They touched each other’s knees.’ (*an-ander* ‘at-other’ for *an-einander* ‘at-one.another’)
- b. *oftt be-scheisz wir beide an-einander*  
 often be-shit (= cheat) we both at-one.another  
 ‘We often cheat each other.’

Such misanalyses are evidence that already at this stage *einander* was felt to be an adverbial sort of word, with a preposition as a more natural component than a quantifier or pronoun.

In Bavarian, as seen above, the reciprocal component of such compounds eventually ceased to be able to occur independently, except for those speakers who marginally accept the reciprocal as an indirect object. Arguably,  $-(\grave{a}(r\grave{a}))nand(\grave{a})$  is still a stem rather than an affix; but it has become (or is on its way to become) a bound stem, requiring the stem of a preposition to support it. Tied up that closely, such combinations were prone to be lexicalised and to acquire semantic nuances and specialisations which could no longer be compositionally derived from the meanings of their components, conceived of however loosely.

At the latest when they were fused with prepositions, as inextricably as in Bavarian or slightly less dependently as elsewhere in German, reciprocals thus ended up as (parts of) adverbs – that is, in the same word class as adverbs for common action or interaction (‘together’ etc.) and for role reversal (‘mutually’ etc.), whose rationale is to highlight the relational rather than the referential components of reciprocity. Now, what adverbs or adverbial phrases do (or of course rather what speakers do with them) certainly is not to refer to persons and things, either: this is the business in which NPs specialise, hence also pro-NPs. Associated with the verb phrase, what reciprocal adverbs could naturally be construed as referring to are ontological entities in a class with places, times, or manners. This raises the question whether the *einander* or  $-(\grave{a}(r\grave{a}))nand(\grave{a})$  part of these adverbs can really be expected to perform the referential functions which an elaborate rendering of reciprocity would require, namely to express individual non-reflexivity and set identity or overlap.

It is instructive in this respect to compare prepositional reciprocals with forms alluded to above as their possible model. In German, like elsewhere, prepositions of all kinds, including those for local, temporal, causal, modal, or

other semantic relations, do combine syntactically with pronouns referring to persons and things – and being included in such a prepositional phrase does not affect the referential force of these pronouns, otherwise most at home in the syntactic relations of subject and direct/indirect object. However, German also provides an alternative to such syntactic constructions, namely compounds with the preposition as the second member and the pronouns represented by what look like local adverbs, *da* ‘there’ and *wo* ‘where’ (the latter interrogative and relative):

- (20) a. *Die Buben sind bei ihm gestanden.*  
 the boys are by him stood  
 ‘The boys stood next to him.’
- b. *Die Buben sind da-bei gestanden.*  
 the boys are there-by stood  
 ‘The boys stood nearby.’

In (20a), the 3rd person singular masculine pronoun in construction with the local preposition would typically be construed as referring to a person or thing already mentioned, by means of a noun of masculine gender and in the singular. This, however, would not be an adequate interpretation of (20b). In a way, *da* is a referring expression, too, since the boys’ position is being localised in relation to something. But this reference is more comprehensive, pointing to a whole situation or event, regardless of the participants and props involved in it.<sup>26</sup> Along such lines, *da* and *wo* can be characterised as pronouns, or rather pro-adverbs, of situational rather than personal reference. Though semantically and syntactically distinct from nominal pro forms for persons and things, such situational pro forms are not entirely on a par with dedicatedly adverbial pro forms for places (such as ‘here’, ‘there’), times (‘now’, ‘then’), manner (‘thus’), reasons (‘therefore’), and other circumstantial relations, either: they are not inherently relational in this particular function, but require the company of an adposition, i.e., of a relational marker prototypically (though not exclusively) relating NPs to verbs or other NPs. Given the generality of their referential function, situational pro forms should be able to afford being inflectionally not nearly as active as pronouns for persons and things are. They might even be wholly disembodied – which in a way is what they are when adpositions do duty

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26. This, at any rate, is the gist of alternations like that in (20), the intricacies of which would be a subject in their own right.

as adverbs<sup>27</sup> and are unaccompanied by an overt complement (e.g., ‘The boys stood near Ø’).

The referentiality of reciprocals, especially in prepositional combinations, is of essentially the same kind: like *da-bei*, and also like ‘mutually’ and similar adverbs, *bei-einander* etc. focus on the relational nature of the situation as a whole, of roles being reversed in multiple instantiations of a relation, leaving its complex (co-)referential specifics uncoded.<sup>28</sup>

Given that reciprocals of such form and meaning are, for the time being, the end-point of a chain of developments which were set in motion once new bipartite reciprocal markers had been created from (pro-)nominal sources, this would seem to attest to a conceptualisation of reciprocity in Germanic which does not give equal weight to its relational and referential semantic components. On formal evidence, what has constantly been reasserting itself is a not very distinctive elaboration of reciprocity as non-reflexive interrelations among sets of referents. The difference to reflexive interrelations was not of the highest priority, or else an overt contrast would hardly have gotten confined to oblique and adverbial relations, as in German, being typically glossed over in purely verbal relations between subject and direct object. Had the specifically reciprocal sort of (co-)referentiality been considered worth special coding ever since, forms potentially able to take care of it owing to their (pro-)nominal nature, such as quantifiers and a word for identity and alterity, would hardly have been allowed to go all the way towards adverbialisation and attenuation of personal to situational reference.

## 6. Changeable reciprocals, but not vice versa

At the highest level in a plausible overall taxonomy of grammaticalised reciprocal markers, forms of a (pro-)nominal nature would have to be distinguished from forms of an adverbial (or, more generally, an ad-verbal) nature; and there would have to be a parallel distinction on the functional side, depending on whether it is the (co-)referential or the relational components of reciprocity that receive more salient overt recognition.<sup>29</sup> Reciprocals of the second type would seem to

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27. Or, diachronically speaking, also the other way round, adverbs becoming adpositions.

28. The general theme of such phenomena of attenuated referentiality is presumably that of the relative elaboration of events, a notion which Kemmer (1993) makes much of in her approach to middles, reflexives, and also reciprocals.

29. Some such bifurcation is commonly suggested in the typological literature, regardless of the syntactic-semantic particulars on which it is based. There are other taxonomies (even in this very volume) where the free or bound status of markers is considered a

be crosslinguistically far more common. Genuine reciprocal “pronouns” are not encountered in the table of contents of many grammars; and in some grammars where they are, they had better been dealt with under a different rubric (as arguably in German). There is a difference here from reflexives, which have also been distinguished as (pro-)nominal and ad-verbal, but where there is apparently no comparable preponderance of the ad-verbal type.

While there is no dearth of examples of grammaticalisation pathways and extensions of patterns of polysemies of reciprocals staying within either a broadly verbal or a broadly nominal domain,<sup>30</sup> the history of Germanic is of considerable typological interest for it shows that even the highest-level type of a reciprocal is not immutable. What we have traced in Germanic is how nominal, referential reciprocals have developed into adverbial, relational (or situation-referential) ones. What it would be interesting to see is whether reverse developments can occur, too. The odds would seem heavily against it.

There is such an air of inevitability about what happened to quantifier-*other* combinations in Germanic that one is tempted to conclude that nominal, referential reciprocals, wherever and for whatever reason they happen to be innovated, are doomed right from the beginning, with their reanalysis as a reciprocal of the majority type being (i) only a question of time and (ii) independent of other typological revolutions.<sup>31</sup> Probably English *each other/one another* is the dedicated reciprocal pronoun of longest standing worldwide – and it is not quite as impeccable an “anaphor” as the English reflexive is, either.

To go by crosslinguistic frequencies of the kinds of grammatical forms that code it and by the preferred direction of changes among them, the linguistic fascination of the notion of reciprocity would universally seem to lie in capturing its characteristic relational structure rather than in the veritable challenges it poses to reference tracking.

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major parameter; it remains to be seen how such a formal distinction relates to deeper conceptual ones.

30. A typical generalisation (explicitly made by Kemmer 1993: 98, 255) would be that the polysemy of reciprocal and collective implies that the reciprocal marker is ad-verbal.

31. Lehmann (1974: 102–103, 126) is not on very firm empirical ground when he sees pronominal reciprocals and reflexives as a correlate of SVO (which is a rather common basic word order), with SOV/VSO allegedly going for verbal marking. It seems somewhat implausible to assume that therefore, since German retained OV more so than did English, it was keener to revert to an adverbial mode of reciprocal marking, while English, changing to SVO, did less to change the pronominal nature of the reciprocal it had innovated in the same way as German had.

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# Irreducible symmetry in reciprocal constructions

*Alexis Dimitriadis*

## 1. Introduction

A reciprocal sentence typically describes a multitude of elementary relationships between its participants. For example, sentence (1) describes a situation involving several kicks, each involving a single kicker and a single person being kicked.

(1) *They kicked each other.*

Considerable attention has been devoted to characterizing the kinds of situations that can be truthfully described by a reciprocal sentence; a number of studies have formulated answers in the form of one or more *reciprocal situation schemas*, or situation types, which specify the properties that a situation must meet in order to be describable by a reciprocal (Langendoen 1978; Langendoen and Magloire 2002; Lichtenberk 1985, 1999; Dalrymple et al. 1998; Winter 1996, 2001, a.o.) Well-known situation schemas include *strong reciprocity* (all pairings of individual members of the set denoted by the subject must stand in the predicated relationship), *weak reciprocity* (each individual member of the subject must participate in the predicated relationship as initiator and as endpoint), and several others.

Such schemas are expressed in terms of conditions on the entire set of elementary relations comprising a reciprocal situation; we can describe them as *cumulative* conditions. But as we will see below, certain important properties of reciprocals are sensitive to properties of each of the elementary relations (events) described by the underlying predicate, rather than of the aggregate situation: In particular, a number of phenomena in various languages are conditioned on whether the individual events described by a predicate are *irreducibly symmetric* (Dimitriadis 2004, 2008). For example, some languages have reciprocal strategies that can only describe events that are irreducibly symmetric.<sup>1</sup>

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1. A reciprocal strategy is some particular, language-specific grammatical device used to encode a reciprocal relationship between participants (cf. Dimitriadis and Everaert

An irreducibly symmetric predicate, in short, is one that can only describe individual events that are themselves symmetric for the two participants involved. This notion is explained in the following section. Irreducible symmetry plays an important role in several other constructions, as we will see in Sections 3 through 5; in this paper we are particularly concerned with its role in various properties of reciprocals. In Section 6, we examine in more detail the role of participants in the events described, and argue that despite some apparent asymmetries, the reciprocal relation should be characterized as symmetric.

Section 7 takes up the relationship between irreducible symmetry and reciprocal situation schemas. It will be shown that the parameter of irreducible symmetry is orthogonal to the basic inventory of cumulative situation schemas. In other words, event-level symmetry needs to be considered independently of the basic situation graph. In some cases this suggests a reduction in the number of basic situation schemas that can be identified; but it also suggests a systematic distinction that is not usually made. Strong reciprocity, for example, will be distinguished from strong reciprocity with irreducible symmetry, even though both are described by the same (traditional) situation graph. However, there need only be one basic “strong reciprocity” schema, which may or may not occur in combination with irreducible symmetry.

## 2. Symmetry, reciprocity and irreducible symmetry

While the notions of reciprocity and symmetry are sometimes used interchangeably, I will use the former term for a syntactic construction and the latter for a logical relation. The two are not co-extensive: It is easy to find reciprocal sentences that do not describe a symmetric relation, or vice versa.

In the sense used here, a reciprocal must necessarily involve application of a morphosyntactic device or other construction, the *reciprocal strategy*, to a verb.<sup>2</sup> A reciprocal strategy, of course, must have a particular kind of semantic

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2004). Thus *einander*, *sich* and *sich gegenseitig* are exponents of distinct reciprocal strategies of German. Lichtenberk (1985) uses the term *reciprocal construction* for the same notion.

The term “irreducible symmetry” is my own. I have adopted it in order to distinguish this property of events from related concepts such as general symmetry (a property of two-place relations), “naturally reciprocal events” (a cross-linguistically recurrent class of events that are typically carried out reciprocally, see Section 1), inherently symmetric predicates (i.e., underived), etc.

2. We should more properly say “to a verb or nominal”, or perhaps “to a (syntactic) predicate”. While I do not mean to imply that nominal reciprocalization should be

content: i.e., it must confer reciprocal meaning. I will not further define what is meant by “reciprocal meaning”, since there is no doubt that the constructions under discussion here qualify as reciprocal strategies. It is enough to state that a reciprocal strategy must apply to a predicate of at least two arguments, with the semantic result that some set of participants act on each other as initiators and endpoints of the indicated relation, in the particular way that we recognize as reciprocal. (Some of the works on characterizing reciprocal semantics, based on an inventory of situation schemas and/or prototype situations, were cited in the Introduction; see also König and Kokutani 2006).

A simple, underived verb by itself cannot, by this definition, count as reciprocal: only a reciprocal strategy can create a reciprocal predicate. However, we allow in principle for *reciprocal deponents* (“frozen” reciprocal verbs with no corresponding transitive form, i.e., whose base verb only occurs in the reciprocalized form), and for morphologically null reciprocalization as in English. This requirement for (formal) reciprocal marking is not universally embraced by other authors working on reciprocals. In particular, it is at variance with Rákosi (this volume), who treats as reciprocals symmetric verbs in Hungarian with no formal reciprocal marking. While I believe that there are sound reasons for restricting the category *reciprocal* to constructions with some sort of formal marking, the question is beyond the scope of the present work.

By definition, a two-place predicate is *symmetric* if exchanging its two arguments always preserves truth values; so *X met Y* is symmetric, but *X saw Y* is not (since X might see Y without Y seeing X). Reciprocals can in general be formed from either type of predicate:

- (2) a. *The boys met each other.*  
 b. *The boys saw each other.*

If a reciprocal sentence involves just two participants, it will (in the usual case)<sup>3</sup> express a symmetric relationship between them: each stands as both initiator and endpoint of the activity described. If a predicate is symmetric when restricted to some set, we say that it is symmetric *on* that set; so if John and Mary saw each other, we say that *see* is symmetric *on* the set consisting of John and Mary. (The term “symmetric” with no qualification is reserved for predicates that are symmetric on any set they are applied to). If multiple participants are

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excluded from the domain of the term “reciprocal”, in this work I will be exclusively concerned with reciprocals in the verbal domain, and suppress discussion of reciprocal nouns or adjectives.

3. The exceptions involve examples such as *The children followed each other into the room*, which are briefly discussed in Section 7.

involved, sentence (2b) can be truthfully used to describe situations that are not symmetric; in a suitable context, this sentence is true just if for each participant there is some event of seeing and some event of being seen (weak reciprocity).<sup>4</sup> In other words, if everyone saw one or more other persons, and was seen by one or more persons; but *not necessarily* the same ones. Hence *see* is not a symmetric predicate. Note that this situation schema was stated at the level of the aggregate situation.

In such contexts sentence (2b) describes a plurality of events, each of which might be an event of asymmetric seeing; but such a state of affairs is not possible with events of meeting: even in contexts where weak reciprocity is sufficient, i.e., where it is enough for A to meet *some* others and to be met by some others, the semantics of *meet* are such that any event of A meeting B must also be an event of B meeting A.<sup>5</sup>

Even in situations involving just two participants, the two sentences are distinguished at the level of the individual events comprising the reciprocal situation: Sentence (a) may describe two separate events of non-symmetric seeing; the boys might have seen each other singing on stage, on separate occasions. But there can be no event of John meeting Bill without that *same* event also being an event of Bill meeting John. I will refer to events that have this property as (*irreducibly*) *symmetric events*, and to predicates that are only true of symmetric events as *irreducibly symmetric predicates*. We summarize the definition as follows:

- (3) **Definition.** A predicate is *irreducibly symmetric* if (a) it expresses a binary relationship, but (b) its two arguments have necessarily identical participation in any event described by the predicate.<sup>6</sup>

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4. The term *event* is used in the “neo-Davidsonian” sense introduced by Parsons (1990). An event represents an occurrence or state of affairs in the real world, or rather, in our conceptualization of it. A sentence like *John ran* is about an event of running, in the same sense that it is about the individual named John; and a given event can be described or referred to in multiple ways, just like an individual can.

5. The discussion assumes the weak reciprocity situation type. Strong reciprocity obscures the distinction under discussion, because (for reasons explained in Section 7) there is no difference in the strongly reciprocal situation schemas applicable to *see* and *must*; in that case the two kinds of event are still distinguishable at the level of individual events, as described in the text for the two-participant case.

6. In this paper I take an informal view on what constitutes an “event”. Certain formalizations of events, the “eventualities” of Parsons (1990) among them, do not allow the same thematic role to be assigned to two distinct participants. This is not directly compatible with our definition of irreducibly symmetric events as involving two ar-

It must be understood that the requirement of “identical participation” is restricted to the core activity or state represented by an event. This is generally necessary for symmetric linguistic predicates (as opposed to logical relations): Even with a prototypically symmetric event such as meeting, the participants may be involved in different ways and to different extents: One participant, but not another, may have initiated the meeting, arrived early, provided the refreshments, etc. Only the narrow fact of meeting involves symmetric participation. This issue will be further discussed in Section 6.

While irreducible symmetry of a predicate is thus logically independent of reciprocity, numerous languages have reciprocal strategies that affect the symmetry properties of the predicates they apply to (in addition to making them reciprocal). This is commonly illustrated with the verb *kiss*. A kiss can be given by one person to another, who may or may not give a kiss in return. But there are also kisses, e.g., on the lips, in which both participants are symmetrically involved. The transitive verb *kiss* can describe either type of kissing, as can reciprocals formed with *each other* or with its Greek equivalent, shown in (4a). This might refer to one or more symmetric kisses, or to a series of asymmetric kisses: on the hand, cheek, or top of the head. But the reciprocal construction shown in (b), which involves a verbal suffix with reciprocal meaning,<sup>7</sup> can only refer to one or more kisses with symmetric participation, i.e., on the lips.

(4) Greek<sup>8</sup>

- a. *O Yanis kje i Maria filisan o enas ton alo.*  
 the John and the Maria kissed the one the other  
 ‘John and Maria kissed each other.’ (Symmetric or non-symmetric)
- b. *O Yanis kje i Maria filithikan.*  
 the John and the Maria kissed-RECP  
 ‘John and Maria kissed.’ (Symmetric only)

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guments with “identical participation”. A formalization in the context of a Parsonsian theory of events is proposed in Dimitriadis (2008).

7. The exponent of reciprocalization in example (4b) is in fact ordinary passive morphology; passive marking in Greek may, depending on the particular verb and on the context, confer a passive, reflexive, reciprocal, or middle interpretation.

8. The following non-transparent glosses are used in this paper: FV final vowel, INST instrumental case, PREV preverb, PST past tense, SM subject marker. In the interest of clarity, markers that are formally ambiguous between reflexive and reciprocal meaning are glossed simply as RECP, except when the reflexive meaning is relevant.

The same holds for so-called “covert reciprocals” in English, i.e., symmetric transitive verbs such as *meet*, *kiss* and *marry*, which are interpreted reciprocally when used intransitively with a plural subject; I will assume, following Reinhart and Siloni (2005), that such covert reciprocals are derived from transitive verbs through a morphologically null reciprocalization operation. It is well-known that covert reciprocals are irreducibly symmetric (Gleitman et al. 1996; Schwarzschild 1996), hence the contrast in example (4) is also present in its English translation.

While the verb *see* is not symmetric, its semantics are not incompatible with symmetry: for some pairs of persons X and Y, it may well be true that X saw Y and Y saw X. Such predicates are called *non-symmetric*. If, in a certain situation, the sentence *the boys saw each other* expresses a symmetric relationship over the set of boys, we can say that *see* is symmetric on that set of boys; but it is not a symmetric predicate (without qualification).<sup>9</sup>

Other predicates, such as *precede*, *follow*, etc., cannot be symmetrically true (on a single occasion) of any pair of participants: If A precedes B, B cannot at the same time precede A. Such relations are formally known as *asymmetric*.

At the level of relations, then, we have a three-way distinction: a relation can be symmetric, asymmetric, or non-symmetric (neutral). But at the level of events there are only two possibilities: a predicate is either limited to irreducibly symmetric events, or it is not. An irreducibly symmetric predicate will necessarily encode a symmetric relation, but a predicate that is not irreducibly symmetric might, depending on the circumstances, encode a symmetric, asymmetric or non-symmetric relation.

Even if a predicate always encodes a symmetric relation, it does not follow that it is irreducibly symmetric: The reciprocal predicate “X and Y saw each other”, for example, is symmetric on the X and Y positions, since these can be exchanged without loss of truth (the same is true of almost any predicate with a conjoined subject). But this predicate does not involve symmetric events. It should be added that irreducible symmetry must not be conflated with simultaneity of the reciprocal relationship, either; in Section 4.3 we discuss examples of reciprocal relations that hold simultaneously and symmetrically on a set (e.g., with stative verbs), but will be shown not to be irreducibly symmetric.

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9. For *see* to be symmetric on a set of boys, it is required that for any pair of boys A and B, either A saw B and B saw A, or neither saw the other. This can easily be false for some reciprocal situations, as already discussed; it can also be true of non-reciprocal situations: if no boy saw anyone else, for example, the situation is not reciprocal but the relation *see* is symmetric on that set.

To forestall confusion, I will avoid referring to reciprocal predicates as “symmetric” unless the underlying events are irreducibly symmetric. I will also use the shorthand “non-symmetric” for reciprocals that are *not* irreducibly symmetric (instead of the awkward “not-irreducibly-symmetric”).

Having defined irreducibly symmetric events, we now turn to showing that they are a linguistically meaningful category. This is accomplished by presenting three linguistic phenomena that are sensitive to the parameter of irreducible symmetry. These are: the semantics of certain reciprocal strategies; the use of the discontinuous reciprocal construction; and the *absence* of certain event-counting ambiguities.

### 3. Symmetric and non-symmetric reciprocal strategies

#### 3.1. Obligatorily symmetric strategies

The most obvious role of irreducible symmetry is as an obligatory property of certain reciprocal strategies. Greek, Hebrew and Hungarian have reciprocals of this type; let’s call them *obligatorily symmetric* reciprocals for short. (Covert reciprocals in English also belong to this category, as already mentioned). While some verbs are irreducibly symmetric even when used transitively, an obligatorily symmetric strategy creates irreducibly symmetric predicates, with a greater or lesser meaning shift, even when applied to verbs that are not irreducibly symmetric in their transitive form.

Such strategies always appear to involve a verbal affix or clitic; I am aware of no argument reciprocals that are obligatorily symmetric.<sup>10</sup>

Each of the above languages also has an argument reciprocal strategy, allowing us to contrast the meaning of the two. In each of the following examples, the verbal reciprocal (a) can only refer to symmetric kisses, while the argument reciprocal (b) is ambiguous between symmetric and non-symmetric meaning, like the transitive verb *kiss* in English.

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10. A reciprocal strategy is considered “verbal” if it functions syntactically as an intransitivizing operator, rather than as an argument of the verb. In some cases, the proper classification of a strategy may not be immediately clear. German *sich* is a particularly subtle case; it can be characterized as a weak pronoun, hence as an argument. But a number of interpretive properties, particularly the fact that it is subject-oriented, suggest that it is a verbal operator rather than a simple anaphoric pronoun. Reinhart and Siloni (2005) argue that reflexive *sich* is a verbal operator when locally bound, but an argument reflexive when used as a long-distance anaphor. Accordingly, I will consider *sich* a verbal operator.

- (5) Greek, = (4)
- a. *O Yanis kje i Maria filithikan.*  
the John and the Maria kissed-RECP  
'John and Maria kissed.' (Symmetric only)
  - b. *O Yanis kje i Maria filisan o enas ton alo.*  
the John and the Maria kissed the one the other  
'John and Maria kissed each other.' (Symmetric or non-symmetric)
- (6) Hebrew (Siloni 2001)
- a. *Hem hitnašku.*  
they kissed.RECP  
'They kissed.'
  - b. *Hem nišku ze et ze / one et ha-šeni.*  
they kissed this ACC this one ACC the-second  
'They kissed each other.'
- (7) English
- a. *John and Mary kissed.*
  - b. *John and Mary kissed each other.*

In Hungarian, the reciprocal form of *kiss* can only denote “the sexual type of kissing where the two tongues are involved”, as Rákosi (2003: 52) puts it, while the argument reciprocal can denote any kind of “intensive” kissing activity.

- (8) a. *János és Kati csókol-óz-t-ak.*  
John and Kate kiss-RECP-PST-3PL  
'John and Kate were involved in a mutual sexual type of kissing.'
- b. *Én és a báty-ám meg-csókol-t-uk egymás-t.*  
I and the brother-ISG PREV-kiss-PST-IPL each.other-ACC  
'I and my brother kissed each other.'

It is common for some reciprocal verbs to take on idiomatic, non-compositional meanings, typically related to social interactions; in the languages under discussion these, too, are invariably irreducibly symmetric. In such cases the base verb might not even describe a symmetric or “naturally reciprocal” activity, but the reciprocal form will have all the typical properties of irreducibly symmetric reciprocals. The argument reciprocal in example (9a) can describe a series of blows, simultaneous or at different times, but sentence (9b) can only describe a physical fight. Example (10b) involves a more extreme case of non-compositionality: The verb *tsakono* ‘to catch’ in its transitive form is used to

mean ‘to catch someone in the act’, but its reciprocal form means ‘to argue, to have a falling-out’. Similarly the verb *diastavrono* ‘to cross (combine, interbreed two things)’ has the reciprocal form *diastavronome* ‘to cross paths’. Such behaviour is common cross-linguistically.

## (9) Greek

- a. *O Yorgos kje i Maria xtipisan o enas ton alo.*  
 the Yorgos and the Maria hit the one the other  
 ‘Yorgos and Maria hit each other.’
- b. *O Yorgos kje i Maria xtipithikan.*  
 the Yorgos and the Maria hit.RECP  
 ‘Yorgos and Maria came to blows (with each other).’

- (10) a. *O Nikos kje o Andonis tsakosan o enas ton*  
 the Nick and the Anthony caught the one the  
*allo (na kimate).*  
 other (to sleep)  
 ‘Nick and Anthony caught each other sleeping.’
- b. *O Nikos kje o Andonis tsakothikan.*  
 the Nick and the Anthony caught.RECP  
 ‘Nick and Anthony argued.’

We find the same meaning shift in Hungarian. Example (11a) might be true if John and Peter were taking turns delivering blows at each other, but example (b) denotes an activity in which “the hits cannot be seriated or even individuated in any meaningful way” (Rákosi 2003: 52).

- (11) a. *János és Péter ver-t-ék egymás-t.*  
 John and Peter beat-PST-3PL each.other-ACC  
 ‘John and Peter were beating each other.’
- b. *János és Péter ver-eked-t-ek.*  
 John and Peter beat-RECP-PST-3PL  
 ‘John and Peter were fighting/wrestling.’

These reciprocalization strategies can only be applied to particular verbs; they are “middle strategies” in the sense of Faltz (1977) (see also Kemmer 1993), and the resulting reciprocals usually describe social interactions and other “naturally reciprocal” relationships. As is well-known, the specific inventory of middle reciprocal verbs varies from language to language; for example, it is not possible in English to form an irreducibly symmetric (covert) reciprocal

from the verb *kick*, but in Greek this is allowed; the result describes a kicking match.

- (12) a. \**John and Mary kicked.*  
 b. *O Yanis kje i Maria klotsjundan.*  
 the John and the Maria kicked.RECP  
 ‘John and Mary were having a kicking fight.’

The fact that these are middle strategies explains how they can be restricted to irreducibly symmetric semantics; if a verb cannot be given an irreducibly symmetric meaning (possibly though a meaning shift, as above), the strategy is simply not used with it.<sup>11</sup>

At this point we should clarify the relation between irreducible symmetry and so-called *naturally reciprocal events*. It is well-known that there is a cross-linguistically recurrent class of verbs whose reciprocals tend to receive special encoding in many languages, i.e., to be formed through a middle reciprocal strategy. It has been observed that such verbs describe activities, particularly social interactions, that are either necessarily or very frequently carried out reciprocally. I will reserve the term *naturally reciprocal events* for events belonging to this core class. But while the verbs in this core group are frequently irreducibly symmetric in meaning, the two notions are not coextensive. For example, the transitive verb *to kiss* does not denote an irreducibly symmetric activity; but kissing is a “naturally reciprocal” activity by our definition, since kissing verbs belong to the core semantic class of verbs that tend to form middle reciprocals. (The symmetry of the resulting middle-reciprocal *kiss* is a separate matter.) This distinction is not always made explicit.<sup>12</sup>

### 3.2. Other kinds of strategies

A number of languages have verbal reciprocals that, while not obligatorily symmetric, nevertheless introduce the semantics of irreducible symmetry with *some* verbs that they apply to. Let’s call these strategies *optionally symmetric*. Such a strategy may apply to all, or almost all transitive verbs in its language, but

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11. Note again that it is the resulting reciprocal, not the underlying verb, that has irreducibly symmetric semantics. The underlying verb need not even be related to social interaction (but the resulting reciprocal will be).

12. Kemmer (1993: 102) defines naturally reciprocal events as “events that are either necessarily (e.g., *meet*) or else very frequently (e.g., *fight, kiss*) semantically reciprocal”; but her use of the term may be closer to what is here called irreducibly symmetric events.

it only imposes irreducibly symmetric semantics on some of them. German, French, Serbian, Lao, Swahili and Chichewa, among others, have reciprocals of this type. The (b) examples below either require or strongly favor symmetric kisses, while the (a) examples, which involve argument reciprocals, once again do not introduce an irreducibly symmetric meaning.

(13) French

- a. *Jean et Marie se sont embrassés l'un l'autre.*  
 John and Mary RECP were kissed each other  
 'John and Mary kissed each other.'
- b. *Jean et Marie se sont embrassés.*  
 John and Mary RECP were kissed  
 'John and Mary kissed.'

(14) German (Kemmer 1993: 112)

- a. *Hans und Maria haben einander geküßt.*  
 b. *Hans und Maria haben sich geküßt.*

In other cases, the resulting reciprocal does not have an irreducibly symmetric interpretation. In German, for example, the verbal reciprocal *sich* can be used with the verb *vergöttern* 'to idolize'. Idolizing is evidently not a naturally reciprocal activity, at least as far as German is concerned, and example (15) does not have irreducibly symmetric meaning.

(15) *Johann und Maria vergöttern sich.*

Johann and Maria idolize REFL/RECP

'Johann and Maria idolize each other (or: themselves).'

That *vergöttern* is not irreducibly symmetric can be demonstrated by syntactic tests, as shown in Section 4.2.

It can be seen that German *sich*, French *se*, and analogous optionally symmetric strategies in other languages can function in two ways: they can behave like the symmetricizing reciprocals in Greek or Hebrew, or they can generate non-symmetric reciprocals more akin to *each other* in English. While it might seem that symmetry is simply irrelevant to the application of this type of strategy, it is argued in Dimitriadis (2004) that optionally symmetric strategies are in fact ambiguous: When the resulting verb is irreducibly symmetric, it has all the properties associated with obligatorily symmetric reciprocal strategies; when it is not, it has a complementary cluster of properties associated with what Reinhart and Siloni (2005) describe as reciprocal formation "in the syntax". We could say, therefore, that there are two distinct ways of

applying such a strategy, of which only one imposes irreducibly symmetric semantics.

Besides the obligatorily and optionally symmetric strategies, there are reciprocal types that do not introduce irreducibly symmetric semantics when they apply. Even some of these show a sensitivity to the factor of irreducible symmetry, usually by being incompatible with it. For example, the Serbian argument reciprocal *jedan drugog* ‘each other’ cannot be applied to verbs with irreducibly symmetric meaning; the verbal reciprocal *se* must be used instead.<sup>13</sup>

- (16) a. \**Petar i Marko su sreli jedan drugog.*  
 Peter and Marko AUX met each other  
 ‘Peter and Marko met each other.’  
 b. *Petar i Marko su se sreli.*  
 Peter and Marko AUX RECP met  
 ‘Peter and Marko met.’

Similarly, Rothmayr (2004) reports that the reciprocal *sich gegenseitig* is (at least in some dialects of German) incompatible with inherently symmetric verbs:

- (17) a. *weil die Toni und die Irmi einander treffen/umarmen.*  
 ‘because Tony and Irmi meet/embrace each other.’  
 b. ? *weil die Toni und die Irmi sich gegenseitig treffen/umarmen.*  
 ‘because Toni and Irmi meet/embrace each other.’

Conversely, *sich* by itself (without *gegenseitig*) cannot be used with verbs whose meaning *excludes* symmetric situations:<sup>14</sup>

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13. The distribution of *jedan drugog* is more complicated than alluded to above; while it cannot be used with symmetric two-place predicates, including verbs like *meet* and symmetric *se*-reciprocals, it *can* be added to collective predicates (which are also marked with *se*, and imply identical participation of the participants). In such cases it seems to confer a distributive interpretation.

(i) *Kola su se sudarila jedna s drugim.*  
 cars AUX SE collided each with other  
 ‘The cars collided with each other [several separate collisions].’

These effects were addressed in the talk *Symmetric and non-symmetric reciprocals in Serbo-Croatian*, presented by Alexis Dimitriadis and Tanja Milićev at the conference *Formal Descriptions of Slavic Languages 6.5* (Nova Gorica, December 2006).

14. Sentence (i), called to my attention by Ekkehard König (personal communication), is an exception to this generalization. Many speakers of German find it unacceptable, however.

(18) *Die Kinder folgten einander/\*sich ins Zimmer.*

‘The children followed each other into the room.’

German thus appears to exclusively assign the two ends of the symmetry spectrum, irreducibly symmetric and asymmetric verbs, to distinct verbal reciprocal strategies. The middle ground, those verbs that may or may not be symmetrically true in a situation, are compatible with either form; and the entire range is compatible with the argument reciprocal *einander*.

These effects appear to be idiosyncracies of the various strategies, since they are language-particular; for example, *einander* and *each other* can be used with irreducibly symmetric verbs like *meet*, unlike their Serbian counterpart; and in contrast to *sich*, the French verbal reciprocal *se* can be used with asymmetric predicates:

(19) *Les enfants se sont suivis.*

the children RECP are followed

‘The children followed each other.’

It can be seen that many reciprocal strategies are sensitive, in diverse ways, to the parameter of irreducible symmetry or to symmetry in general. But others, such as *each other* in English, can be described without reference to irreducible symmetry.<sup>15</sup>

#### 4. Discontinuous reciprocals

##### 4.1. The construction

Alongside ordinary reciprocals, many languages allow the *discontinuous reciprocal construction*, in which the logical subject of a reciprocal verb appears to be split between the syntactic subject and a *comitative argument*. In those

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(i) % *Heute jagen sich wieder einmal die Termine.*  
 today chase RECP again the deadlines  
 ‘Today appointments are chasing each other.’

15. A reviewer points out that *each other* is optional, and relatively rare, with symmetric predicates. In this sense, its distribution *is* influenced by the parameter of symmetry. Nevertheless the semantic contribution of *each other*, and the requirements for its successful use, can be stated without reference to the symmetry of the underlying predicate.

languages that have subject-verb agreement, the verb typically agrees with the syntactic subject alone.<sup>16</sup>

- (20) Greek
- a. *O Giannis kje i Maria filithikan.*  
 the John and the Maria kissed-RECP.PL  
 ‘John and Maria kissed each other.’
- b. *O Giannis filithike me ti Maria.*  
 the John kissed-RECP.SG with the Maria  
 ‘John and Maria kissed each other.’
- (21) Hebrew (Siloni 2001)
- a. *Hem hitnašku*  
 they kissed.RECP  
 ‘They kissed.’
- b. *Hu hitnašek im Dina*  
 he kissed.RECP with Dina
- (22) Swahili (Vitale 1981: 145)
- a. *Juma na Pili wa-na-pend-an-a.*  
 Juma and Pili SM.PL-PRES-love-RECP-FV  
 ‘Juma and Pili love each other.’
- b. *Juma a-na-pend-an-a na Pili.*  
 Juma SM.SG-PRES-love-RECP-FV with Pili  
 ‘Juma and Pili love each other.’
- (23) German
- a. *Johann und Maria schlugen sich.*  
 Johann and Maria hit RECP  
 ‘Johann and Maria fought/hit each other.’
- b. *Johann schlug sich mit Maria*  
 Johann hit RECP with Maria  
 ‘Johann and Maria fought/hit each other.’

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16. Volker Gast (personal communication) points out that some languages systematically allow plural agreement in clauses, reciprocal or non-reciprocal, that contain a comitative (“surrogate agreement”). This is the case, for example, in Tzotzil (Aissen 1987: 183); the phenomenon is also found in Greek, particularly with first or second person subjects. In such cases, discontinuous reciprocals can trigger plural agreement like ordinary comitatives.

As we will see, discontinuous reciprocals are intimately connected with irreducible symmetry in their distribution. In this section we summarize the analysis proposed in Dimitriadis (2004, 2008), as it applies to the question of irreducible symmetry.

The discontinuous reciprocal is a construction specific to certain reciprocal-forming strategies; it is possible with *sich* in German, with *se* in Serbian, and with the Greek verbal reciprocal shown above, but not with the “argument” reciprocals of the same languages. In fact, it seems to be restricted to verbal reciprocals; of the many languages discussed in Dimitriadis (2004) that have the discontinuous construction, none allow it with argument reciprocals.<sup>17</sup>

We can add to our list of discontinuous reciprocals the covert reciprocals of English, many of which can be used discontinuously. Again, the construction is not possible with the argument reciprocal *each other*.

- (24) a. *John met/argued/talked/collided with Mary.*  
 b. \**John met each other with Mary.*

Because covert reciprocals are not morphologically marked, however, it is impossible to know when reciprocalization has applied and when we have an underived verb with sufficiently similar semantics. For this reason the English facts must be approached with caution, and are not used as grounds for any conclusions in this work.

It is common to analyze discontinuous reciprocals by reducing them to the corresponding “simple reciprocal” sentences, either by deriving the former from the latter via syntactic movement or at the level of interpretation (Vitale 1981; Mchombo and Ngunga 1994; Siloni 2001). However, it is shown in Dimitriadis (2004) that the semantics of discontinuous reciprocals is more specific, that is, more expressive, than the semantics of the corresponding simple reciprocals, and consequently the meaning of a discontinuous reciprocal cannot be derived from that of its simple counterpart. To see this, we can consider discontinuous examples in which either the syntactic subject or the comitative argument is plural.

- (25) Greek  
 a. *O Yanis, o Nikos kje i Maria tsakothikan.*  
     the John the Nick and the Maria argued.RECP  
     ‘John, Nick and Maria argued.’

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17. For evidence that *se* and *sich* are verbal reciprocals, see Zec (1985), Reinhart and Siloni (2005), and the discussion in Dimitriadis (2004).

- b. *O Yanis kje o Nikos tsakothikan me ti Maria.*  
 the John and the Nick argued.RECP with the Maria  
 ‘John and Nick argued with Maria.’

Example (25a) describes a situation of conflict between the three members of the subject, with no specification of which party or parties were in conflict with whom. But (25b) is either about an argument between John and Nick on the one part and Maria on the other, or possibly about two different arguments between Maria and each of the two men. In each case, the reciprocal relation must involve pairs consisting of one participant (possibly plural) from the syntactic subject, and one participant from the comitative argument. Although the simple reciprocal sentence (a) could also have been used to describe this situation, it could not refer *only* to these possibilities; the meaning of (b) is therefore more specific than that of (a), and is not semantically reducible to it. More generally: The meaning of the discontinuous reciprocal is not reducible to the meaning of the corresponding simple reciprocal. To express the meaning of (b) it is necessary to treat the two positions, subject and comitative, as distinct arguments of the verb at both the syntactic and the syntactic level. In other words, discontinuous reciprocals must be analyzed as two-place predicates. The issue is not further defended here, as it does not directly impact on the questions at hand.<sup>18</sup>

#### 4.2. The role of symmetry

In a great number of languages, irreducible symmetry plays a prominent role in the distribution of discontinuous reciprocals. Specifically, the discontinuous construction can only be used with reciprocal verbs that are irreducibly symmetric in meaning. For the obligatorily symmetric strategies, this means simply that the discontinuous construction is potentially available with all reciprocal verbs, since the reciprocal strategy itself can only be used if the result is irreducibly symmetric.<sup>19</sup> The real test of this prediction is found with “optionally symmetric” strategies. In Serbian, for example, the reciprocal form of *kiss* can be used discontinuously, with irreducibly symmetric semantics, while the (non-symmetric) reciprocal of *hear* cannot; however, the latter verb *can* be used discontinuously with the symmetric, lexicalized meaning *to talk to each other*. Other verbs that allow the reciprocal *se* but cannot be used discontinuously are

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18. For discussion of the argument structure of discontinuous reciprocals, see Dimitriadis (2004) and Rákosi (this volume).

19. Although obligatorily symmetric reciprocals automatically satisfy the symmetry requirement for discontinuous reciprocal formation, the discontinuous construction might still be blocked for other reasons.

*help, praise, etc.* Note that it is the symmetry of the derived (reciprocal) form that matters, not of the basic transitive verb; neither *kiss* nor *hear* are symmetric in their transitive form.

(26) Serbian

- a. *Jovan i Marija se ljube.*  
John and Mary.NOM RECP kiss  
'John and Mary kissed.'
- b. *Jovan se ljubi sa Marijom.*  
Jovan.NOM RECP kisses with Marija.INST  
'John and Mary kiss.'

(27)

- a. *Jovan i Marija se čuju.*  
Jovan and Marija.NOM RECP hear.3PL  
'John and Mary hear each other.'
- b. *Jovan se čuje sa Marijom.*  
Jovan RECP hears with Marija.INST  
(Ok with secondary meaning: 'John and Maria talk [to each other].')

Similarly, most verbs in German can form a *sich* reciprocal; but while *sich schlagen* 'to fight' and *sich küssen* 'to kiss' can be used discontinuously, non-symmetric *sich vergöttern* 'to idolize each other' cannot.

(23)

- a. *Johann und Maria schlugen sich.*  
Johann and Maria hit RECP/REFL  
'Johann and Maria hit each other/themselves.'
- b. *Johann schlug sich mit Maria.*  
Johann hit RECP/\*REFL with Maria  
'Johann and Maria hit each other/\*themselves.'<sup>20</sup>

(28)

- a. *Hans versteht sich mit Maria.*  
Hans understands RECP with Maria  
'Hans and Maria understand each other.'
- b. *Hans verträgt sich mit Maria.*  
Hans gets.along RECP with Maria  
'Hans and Maria get along.'

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20. This sentence also has an irrelevant instrumental reading, which says that Johann used Maria as a club to hit himself.

- (29) a. *Johann und Maria vergöttern sich.*  
 Johann and Maria idolize REFL/RECP  
 ‘Johann and Maria idolize themselves/each other.’
- b. \**Johann vergöttert sich mit Maria.*
- (30) a. \**Hans mag sich mit Maria.*  
 Hans likes RECP with Maria  
 ‘Hans and Maria like each other.’
- b. \**Hans haßt sich mit Maria.*  
 Hans hates RECP with Maria  
 ‘Hans and Maria hate each other.’

For an example outside the European language area we turn to Lao (Enfield, 2003). The primary reciprocal strategy of Lao, the particle *kan3*, can be combined with any transitive verb, as shown by (31a) below. But the discontinuous reciprocal construction is only possible with the usual irreducibly symmetric verbs, as examples (31b) and (31c) show.

- (31) a. *bak2-dèng3 kap2 bak2-sèng3 hèn3/vaw4/tii3/khaa5 kan3*  
 Deng with Seng see/speak/hit/kill RECP  
 ‘Deng and Seng saw/spoke.to/hit/killed each other.’
- b. *bak2-dèng3 vaw4/tii3 kan3 kap2 bak2-sèng3*  
 Deng speak/hit RECP with Seng  
 ‘Deng spoke.to/fought (reciprocally) with Seng.’
- c. \**bak2-dèng3 hèn3/khaa5 kan3 kap2 bak2-sèng3*  
 Deng saw/killed RECP with Seng  
 ‘Deng and Seng saw/killed each other.’

Thus, irreducibly symmetric meaning correlates closely with the ability to be used discontinuously.

Returning briefly to “obligatorily symmetric” reciprocal strategies, recall that such a strategy can itself only be used if the result is irreducibly symmetric, and hence the prediction is that if a verb can be reciprocalized, it can also be used discontinuously. This is not logically necessary, since the discontinuous construction might be blocked for other reasons; but for the most part, I have not found significant restrictions on its availability. For example, the Greek verbs *eklego* ‘elect’, *proslavmano* ‘hire’, and *didasko* ‘teach’ cannot form this type of verbal reciprocal at all; but *sinando* ‘meet’, *sproxno* ‘push’ and *tilefonoao*

‘telephone’ all have irreducibly symmetric verbal reciprocals, and all can be used discontinuously.

## (32) Greek

- a. *O Nikos kje o Andonis tsakothikan.*  
the Nick and the Anthony caught.RECP  
‘Nick and Anthony argued.’
- b. *O Nikos tsakothike me ton Andoni.*  
the Nick caught.RECP with the Anthony  
‘Nick got in an argument with Anthony.’

## (33) Hungarian

- a. *János és Kati csókol-óz-t-ak.*  
John and Kate kiss-RECP-PST-3PL  
‘John and Kate were kissing.’
- b. *János csókol-óz-ott Kati-val.*  
John kiss-RECP-PST Kate-with  
‘John and Kate were kissing.’

A notable exception to this generally good correlation is English, since some covert reciprocals do not allow the discontinuous construction as expected. For example, *John kissed/married with Mary* is not very good. But since there is no visible exponent of a reciprocalization operation, it is not clear what we should make of this observation.

In both types of strategies considered above, the discontinuous construction is restricted to predicates that are irreducibly symmetric. But it should be mentioned here that this correlation does not hold universally. The Bantu languages Swahili, Chicheŵa and Ciyao allow the discontinuous reciprocal construction, but irreducible symmetry is not required. The following is a classic example of a “chained reciprocal”, in which the relationship holding between participants is asymmetric.

## (34) Swahili (Johnson et al. 1939: 99)

- a. *Ugonjwa hu-fuat-ana na upotevu wa maisha.*  
sickness SM-follow-RECP with waste of life  
‘Sickness follows from a life of profligacy.’

## 4.3. On simultaneity

The participants of an irreducibly symmetric event, such as *John and Mary kissed*, play dual roles: each of them is both kisser and kissed. In his discussion of reciprocal situations, Lichtenberk (1985) treats such events as expressing a pair of relations, just like for an ordinary reciprocal situation. The difference is that for symmetric events, the two component relations are necessarily simultaneous. But not all situations involving simultaneous events are irreducibly symmetric, and hence it is possible to tease the two factors apart. Reciprocal stative predicates, which hold simultaneously even if the underlying events are not irreducibly symmetric, provide our test case.

The following examples, all of which involve stative predicates, differ in their compatibility with the discontinuous construction. Those in (35) describe a state of mutual communication or compatibility, which can only hold symmetrically between participants, and are well-formed discontinuous reciprocals. Those in (36) describe psychological states that are directed from one person to another, i.e., that are not irreducibly symmetric (although reciprocated); and they are ungrammatical when used discontinuously.

- (35) a. *Hans versteht sich mit Maria.*  
       ‘Hans and Maria understand each other.’  
       b. *Hans verträgt sich mit Maria.*  
       ‘Hans and Maria get along.’
- (36) a. \**Hans mag sich mit Maria.*  
       ‘Hans and Maria like each other.’  
       b. \**Hans haßt sich mit Maria.*  
       ‘Hans and Maria hate each other.’

We conclude that discontinuous reciprocals are indeed sensitive to irreducible symmetry, rather than to the simultaneity of relations that characterizes symmetric events.<sup>21</sup>

## 5. Counting symmetric events

Sentences with plural subjects are frequently ambiguous between distributive and cumulative interpretations (*inter alia*). As Siloni (2002, this volume) points

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21. This reinforces Lichtenberk’s (1985) conclusion that “the contrast between sequentiality and simultaneity of the relations in reciprocal situations is of no consequence to reciprocal constructions” (p. 24).

out, this ambiguity is absent in certain examples involving verbal reciprocals. While Siloni proposes a morphologically-based account of this effect, we will see here that it is a direct consequence of irreducible symmetry.<sup>22</sup>

In example (37a), the count “five times” can be understood as counting either the total number of kicks or the kicks delivered by each of John and Mary. Exactly the same ambiguity is found with the argument reciprocal in (37b). The irreducibly symmetric sentence (37c), however, can only be about five kicking occasions (each involving an indeterminate, and irrelevant, number of kicks).

- (37) a. *O Yanis kje i Maria klotsisan ti bala pende*  
 the John and the Mary kicked the ball five  
*fores.*  
 times  
 i. John and Mary kicked the ball; there were a total of five kicks,  
 all together.  
 ii. John kicked the ball five times; Mary kicked the ball five times.  
 There were a total of ten kicks.
- (38) a. *O Yanis kje i Maria klotsisan o enas ton alo*  
 the John and the Mary kicked the one the other  
*pende fores.*  
 five times  
 i. John and Mary kicked each other; there were a total of five  
 kicks, all together.  
 ii. John kicked Mary five times; Mary kicked John five times.  
 There were a total of ten kicks.
- b. *O Yanis kje i Maria klotsithikan pende fores.*  
 the John and the Mary kicked.RECP five times  
 i. John and Mary kicked each other. There were a total of five  
 kicks, or five kicking matches, all together.

The same effect is found in Hebrew and in English:

- (39) Hebrew (Siloni 2002)  
 a. *Dan ve-Ron nišku exad et ha-šeni xameš*  
 Dan and-Ron kissed each ACC the-other five  
*pe'amim.*  
 times

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22. Siloni's account is discussed in more detail in Dimitriadis (2008).

- i. There were five mutual kissing events.
    - ii. There were ten kissing events: five by Dan and five by Ron.
  - b. *Dan ve-Ron hitnašku xameš pe'amim.*  
Dan and-Ron kissed five times
    - i. There were five mutual kissing events. (symmetric only)
- (41)
- a. *John and Mary kissed the flag / each other five times.*
    - i. There were five kissing events.
    - ii. There were ten kissing events: five by John and five by Mary.
  - b. *John and Mary kissed five times.*
    - i. There were five mutual kissing events. (symmetric only)

The source of this contrast is not the difference between verbal and argument reciprocals *per se*, but the difference between irreducibly symmetric and non-symmetric predicates: When we count asymmetric events, we can choose between counting the total number of events or counting the number of events attributable to each participant; but when we count symmetric kisses (or symmetric altercations involving kicking), we can count them only once: the symmetric kiss given by Dan to Ron cannot be counted as distinct from a symmetric kiss given at the same moment by Ron to Dan. In other words, symmetric events are atomic as far as this test is concerned.

To see that argument reciprocals are not in themselves the reason for the ambiguous readings, it is enough to consider examples with an irreducibly symmetric base verb.

- (41)
- a. *John and Mary met each other five times.*
    - i. There was a total of five meetings.
    - ii. \* There was a total of ten meetings.
  - b. *John and Mary met five times.*
    - i. There was a total of five meetings.
    - ii. \* There was a total of ten meetings.
- (42)
- Johann und Maria trafen einander/sich fünf mal.*  
Johann and Maria met each other five times
    - i. There were a total of five meetings.
    - ii. \* There were a total of ten meetings.

The contrast we found in the earlier examples has disappeared. In no case is there an ambiguity, since the resulting sentence is always irreducibly symmetric.

Sentence (41a) is unambiguous even though *each other* readily gives rise to scope-like ambiguities elsewhere.

In languages that can have non-symmetric verbal reciprocals, such verbs are ambiguous. We illustrate with another example from German. The non-symmetric verbal reciprocal in (43b) behaves just like the non-symmetric argument reciprocals.

(43) German

- a. *Johann und Maria traten einander fünf mal*  
 Johann and Maria kicked each.other five times  
*vors Schienbein.*  
 against.the shinbone
- i. John and Mary kicked each other. There were a total of five kicks.
- ii. John kicked Mary five times; Mary kicked John five times. There were a total of ten kicks.
- b. *Johann und Maria traten sich fünf mal*  
 Johann and Maria kicked each.other five times  
*vors Schienbein.*  
 against.the shinbone
- i. John and Mary kicked each other. There were a total of five kicks.
- ii. John kicked Mary five times; Mary kicked John five times. There were a total of ten kicks.

The crucial factor, then, is not the type of reciprocal but whether the events described are symmetric. A sentence about non-symmetric events is ambiguous because it can be taken to count either the actions of each participant or the total number of actions; but symmetric events cannot be counted twice (once for each participant), and so the ten-event reading is not possible.

The behaviour described in this section would not be possible if an event of meeting, or a symmetric kiss, in fact consisted of two co-occurring asymmetric events. If that were the case we should be able to add John's "portion" of several symmetric kisses, for example, to Mary's portion, and derive a cumulative reading. But as far as linguistic reference is concerned, symmetric events truly behave as a single, symmetric event, rather than as a pair of simultaneous events that entail each other.

## 6. How symmetric are symmetric events?

While we defined irreducibly symmetric predicates as those whose participants have an identical relationship to the event described, we have glossed over some complicating factors that we now return to. Even a prototypically symmetric event like a meeting is brought about through the varying activities and attitudes of its participants: One may have arranged the meeting, another may have gone to it early, or eagerly, etc. Such potential differences are even present with simple reciprocals like (44a), of course; but they are brought into the forefront when we consider two-place predicates involving symmetric events, such as (44b) and (44c).

- (44) a. *Bill and John met.* (one-place symmetric reciprocal)  
 b. *Bill met John.* (irreducibly symmetric transitive)  
 c. *Bill met with John.* (discontinuous reciprocal)

The discontinuous reciprocal can even be used with modifiers that target the subject only (cf. [45]); such phenomena provide evidence that the two positions are distinct arguments (Dimitriadis 2004). Clearly, we must restrict our attention to the core activity itself if we can hope to consider such events as symmetric.

- (45) German (Behrens et al. 2003: 5)  
*Peter küsste sich gerne mit Maria.*  
 Peter kissed.SG RECP gladly with Maria  
 ‘Peter liked to get kissing with Maria.’

But while it is reasonable to exclude from consideration unstated secondary or preparatory activities, and even the contributions of adjuncts, there remain some asymmetries due to the linguistic encoding of the participants themselves. Example (44b) involves a transitive verb with irreducibly symmetric meaning (hence not a reciprocal, in our terminology). Example (44c) involves a symmetric reciprocal used discontinuously. Both predicates describe symmetric events, according to our analysis, and hence the two participants are said to have identical participation in the event in question. In fact, the two argument positions are not entirely identical. Both types of construction can be used under certain circumstances when one of the participants is credited with more initiative, agency, or importance. When there is considerable difference in the status of the participants, for example, it is often possible to use a symmetric reciprocal discontinuously where its simple reciprocal form would be odd.

- (46) a. *The car collided with the tree.*  
 b. #*The car and the tree collided.*
- (47) a. *The bicycle is near the garage.*  
 b. #*The bicycle and the garage are near each other.*

In such sentences the more active participant must occupy the subject position. But this need not mean that the two arguments are thematically different. As Gleitman et al. (1996) show, there are measurable differences between the two arguments of even logically symmetric predicates like *be equal to*, due to the different syntactic prominence of the arguments. The discontinuous construction assigns unequal discourse status to the participants in a single symmetric event, a property which is no doubt exploited by speakers.

Gleitman et al. suggest that symmetrical predicates, like ordinary predicates, have a Figure-Ground structure; whichever participant appears on nonsubject position becomes the Ground. Thus (48a) is odd because we do not use a moveable object to fix the location of an immovable building; sentence (48b) is odd because the car must be the active participant in any collision scenario.

- (48) a. #*The garage is near the bicycle.*  
 b. #*The tree collided with the car.*

In the case of comparisons, we use the Ground as the source of our standard of measurement, and could therefore get different results when the participants are reversed. Gleitman et al. point out that in similarity comparisons, the subject is understood to have some property that is characteristic of the Ground; therefore example (49a) might be understood to say that China is isolationist like North Korea, while example (b) might be saying that North Korea shares some salient property of China. Gleitman et al. show that if we explicitly include the standard of comparison, as in (60), the difference between the two versions disappears.

- (49) a. *China is similar to North Korea.*  
 b. *North Korea is similar to China.*  
 c. *North Korea and China are similar.*
- (50) a. *North Korea is similar to China in size.*  
 b. *North Korea and China are similar in size.*

Such contrasts are clearly non-thematic, and we can safely attribute them to structural differences between the two argument positions. They must be factored out before we can recognize a relation as symmetric.

There is also some evidence that the two positions, subject and comitative oblique, differ subtly in the degree of agency they require. It is odd to say (51a)

if John forced a kiss on Mary. It is also odd to say (51b) in a situation where John walks up to a statue, embraces it, and plants a kiss on its lips: it seems that the subject position requires intentional participation in the act being described.

- (51) a. # *John and Mary kissed (although Mary resisted).*  
 b. # *John and the statue kissed.*

While the English verb *kiss* cannot be used discontinuously, its Greek equivalent can. Many Greek speakers find (52b), the discontinuous version of (51b), to be acceptable.

- (52) a. # *O Nikos kje to aghalma filithikan.*  
 the Nick and the statue kissed.RECP  
 ‘Nick and the statue kissed.’  
 b. *O Nikos filithike me to aghalma.*  
 The Nick kissed.RECP.SG with the statue  
 ‘Nick engaged in a mutual kiss with the statue.’

This is a subtle effect that does not seem to hold universally. My consultants reported the Hebrew and Serbian equivalents of (52b) to be ill-formed; György Rákosi reports that while he initially disliked the same example in Hungarian, he later came to consider (53b) well-formed.

- (53) Hungarian  
 a. # *János és a szobor csókol-óz-t-ak.*  
 John.NOM and the statue.NOM kiss-RECP-PST-3PL  
 ‘John and the statue kissed.’  
 b. *János részegen csókol-ózo-tt a szobor-ral.*  
 John.NOM drunk kiss-RECP-PST the statue-with  
 ‘John kissed with the statue while drunk.’

There may also be clearer cases. Behrens et al. (2003) report that in Tetun Dili (East Timor), “in cases where one of the participants is presented as the instigator, the subject refers to the instigator [...] and the secondary participants are introduced by *ho* ‘with’” (cited from Williams-van Klinken et al. 2002: 60–61).

- (54) a. *João ho Maria istori malu.*  
 John and/with Maria quarrel RECP  
 ‘John and Maria quarreled (no indication as to who started it).’

- b. *João istori malu ho Maria.*  
 John quarrel RECP and/with Maria  
 ‘John quarreled with Maria (he started it).’

In each case, we can say that intention or “instigation” is distinguished from participation in the act itself; the subject position attributes both instigation and participation to the subject, while the comitative position only attributes participation. The activity (or state) is symmetric with respect to participation only. This argument is somewhat strained in the case of metaphorical extensions to inanimate participants, such as *John met with an untidy end*. As pointed out by Rákosi (this volume), such expressions involve discontinuous reciprocals but are not obviously symmetric in meaning.

Rákosi concludes that discontinuous reciprocals do not in fact always describe a symmetric relationship, while I have considered such contrasts to be peripheral to the core reciprocal meaning (Dimitriadis 2004). But the matter may be more than a question of which factor one considers more important: If such differences in agency and instigation count against symmetry, they should also count against reciprocity: A discontinuous reciprocal like (52b) would not even be a reciprocal if it could not mean something like “Bill kissed the statue and the statue kissed Bill”. A similar argument can be made with less exotic examples, like (55).

- (52b) *O Nikos filithike me to aghalma.*  
 The Nick kissed.RECP.SG with the statue  
 ‘Nick engaged in a mutual kiss with the statue.’

- (53) *The car collided with the tree.*

Given that such discontinuous reciprocals are overtly marked as reciprocals (except in English), and generally considered to be such, we must assign to them an interpretation that allows some sort of reciprocal relation to hold – even if this relationship is not irreducibly symmetric. But any reciprocal relation must exclude considerations of agency, since agency is not in fact reciprocated between the participants: only the subject participant possesses it. And if we exclude considerations of agency, the reciprocal relation in (52b) is symmetric after all (and hence, since a single event is involved, irreducibly symmetric).

Perhaps this becomes clearer if we consider the fact that in two-participant situations, a reciprocal necessarily expresses a symmetric relationship. Therefore, a two-participant discontinuous reciprocal is either symmetric, or is not reciprocal at all. But the conclusions we draw about the two-participant case should also apply to multiple-participant reciprocals: the reciprocated relation-

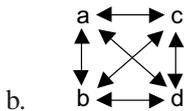
ship in discontinuous reciprocals must hold symmetrically if it is to hold reciprocally at all. Unless one is prepared to claim that many discontinuous reciprocals are not reciprocal at all (in the usual sense of the term), we must conclude that any asymmetries between the subject and comitative argument are irrelevant to our assessment of the reciprocal relation.<sup>23</sup>

While the topic clearly merits further investigation, I assume here that the two positions are thematically identical, in the sense of having the same thematic relationship with the lexical verb; and that additional properties of the subject participant are associated with its syntactic position (thus one might take them to be introduced not by the reciprocal verb, but by another functional head).

## 7. Symmetry and situation types

To characterize the semantic conditions governing the use of reciprocal constructions, a number of studies have identified *reciprocal situation schemas* that describe the essential characteristics of situations that can be truthfully described by a reciprocal sentence. Such situation schemas may be described in terms of logical truth conditions (Langendoen 1978; Langendoen and Magloire 2002; Dalrymple et al. 1998), or more informally through diagrams (Lichtenberk 1985, 1999; Evans this volume). Strong reciprocity, for example, can be described by formula (56a) or by the diagram in (b); we might also explain, in words, that every pair of distinct individuals must stand in the indicated relation.

(56) a.  $\forall x \in A \forall y \in A (x \neq y \rightarrow xRy)$



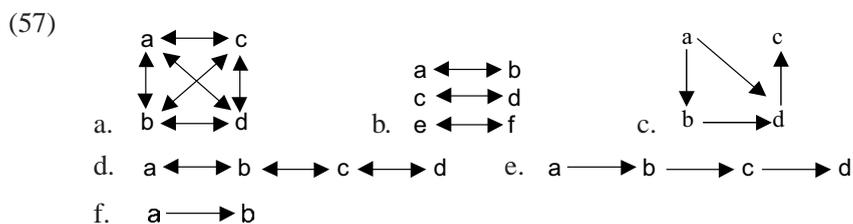
I will not attempt here to reconcile the different proposals, or choose between them; our focus will be on the relationship of irreducible symmetry to situation schemas in general.

A reciprocal situation typically involves a multitude of events, which together, *cumulatively*, must satisfy some stated relationship between their participants. Each event relates the participants occupying the two argument positions targeted by the reciprocal (e.g., Agent and Patient), and the required relation-

23. It must be acknowledged that, as Rákosi (personal communication) points out, I have not adopted a criterion for what qualifies as a reciprocal situation (cf. Section 2); and therefore it cannot be stated with certainty that a non-symmetric construal of a discontinuous reciprocal would not fall within it.

ship determines the “situation type” that must characterize the situation. If all possible pairs of participants must be related, we have Strong Reciprocity; if each participant must appear on the left and on the right of some instance of the relation, we have Weak Reciprocity; etc. For example, a situation described by *The girls pushed each other* satisfies Weak Reciprocity if for each participant there is some event in which this participant was the pusher, and some event in which she was the pushed (cf. Langendoen 1978).

Langendoen’s goal was to identify, out of several situation schemas, a single one that would correctly represent the truth condition schema of ordinary reciprocals. Other studies have arrived at collections of several situation schemas that are applicable on different occasions. For concreteness we consider the situation inventory of Evans (2003):



a. Strong; b. Pairwise; c. Melee; d. Adjacent; e. Chained; f. Asymmetric

Because situation schemas are cumulative, even logically asymmetric predicates such as *defeat* can participate in reciprocal relationships if we allow a reciprocal sentence to be interpreted over multiple occasions. The following examples involve asymmetric verbs, used quite unexceptionally to describe a symmetric cumulative situation.

- (58)
- a. *John and Mary have defeated each other in chess many times before (and they never came to blows before).*
  - b. *They have all visited each other many times.*

If we restrict the context to a single occasion, of course, this will not be possible. An asymmetric relation can then only conform to the melee, chained, or asymmetric situation types.

In contrast to the situation schemas, irreducible symmetry is a property of individual events; we can only determine whether an irreducibly symmetric reciprocal can truthfully describe a situation if we know whether each event, by itself, is irreducibly symmetric. Put differently, irreducible symmetry is a relationship that must hold between the participants of each individual event, not cumulatively between all participants to events in a situation. Diagram (56b)

cannot tell us whether a situation is irreducibly symmetric; it uses a double-headed arrow between two participants, call them  $a$  and  $b$ , to indicate that the relationships  $aRb$  and  $bRa$  hold; but it does not tell us whether they hold by virtue of a single event or different ones.<sup>24</sup> To bring out this distinction, I will use two directed arrows in such cases; a double arrow is reserved for an irreducibly symmetric relation. Accordingly, sentence (59a) is represented by diagram (60a); sentence (59b) by diagram (60b).

- (59) a. *John and Mary kissed each other.*  
 b. *John and Mary kissed.*

- (60) a.  $J \rightleftarrows M$       b.  $J \leftrightarrow M$

Because irreducible symmetry concerns the individual events rather than the cumulative situation schema, it is compatible with any cumulative situation type that is not explicitly asymmetric; for example, diagram (61a) shows a “pairwise” situation consisting of three symmetric events. The pairwise relation could also have been satisfied, preserving the same pairing, by six non-symmetric events as shown in (b). The diagrams might represent three fixed couples, who exchange a total of three symmetric kisses vs. three pairs of asymmetric kisses.

- (61) a.  $a_1 \leftrightarrow b_1$        $a_1 \rightleftarrows b_1$   
 a.  $a_2 \leftrightarrow b_2$       b.  $a_2 \rightleftarrows b_2$   
     $a_3 \leftrightarrow b_3$        $a_3 \rightleftarrows b_3$

Note also that since a strongly reciprocal situation requires every pair of participants to be related, strongly reciprocal relations are *always* symmetric (since it follows that any two participants will be related in both directions).<sup>25</sup> Irreducible symmetry is an additional, independent consideration.

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24. This is not necessarily a shortcoming. Lichtenberk (1985) writes: “I prefer to view situations as made up of relations [...] rather than as made up of events (or states). Viewing situations in this way will enable us to say that even though a situation may consist of a single event, it is nevertheless made up of two relations in which each of the participants plays two roles” (p. 20).

The focus of situation schemas, then, is on relations by design. But in the present context it is useful to explicitly consider both relations and events.

25. The converse is not true: If John and Mary like each other but they neither like nor are liked by Bill, the relationship is symmetric but does not satisfy strong reciprocity. (See also fn. 9.)

(i) John  $\rightleftarrows$  Mary  
       Bill

Chaining situations are typically illustrated with asymmetric predicates such as *follow*. Such predicates are obviously incompatible with irreducible symmetry. But as example (63) shows, irreducibly symmetric predicates can also be chain-like: the graph of both relationships is a long line with each participant being related only to its immediate neighbours, asymmetrically in example (62) but irreducibly symmetrically in (63). The latter is the “adjacent” situation in Evans’s classification, which is also compatible with non-symmetric predicates (i.e., predicates that are neither asymmetric nor irreducibly symmetric), as example (64) shows.<sup>26</sup>

- (62) a. *The children followed each other into the room.*  
 b.  $\dots a_1 \rightarrow a_2 \rightarrow a_3 \rightarrow \dots$
- (63) a. *The players are sitting alongside each other on the bench.*  
 b.  $\dots a_1 \leftrightarrow a_2 \leftrightarrow a_3 \leftrightarrow \dots$
- (64) a. *The guards on the Great Wall can barely see each other.*  
 b.  $\dots a_1 \Leftrightarrow a_2 \Leftrightarrow a_3 \Leftrightarrow \dots$

We similarly find irreducibly symmetric, asymmetric or neutral (non-symmetric) examples of melee reciprocals:

- (63) a. *The bumper cars were colliding with each other.* (irr. symmetric)  
 b. *The fish killed each other.* (asymmetric)  
 c. *The boys were kicking each other.* (non-symmetric)

## 8. Conclusions

Irreducibly symmetric relations play an important role, both in our conceptualization of situations and in the syntactic or semantic behaviour of various constructions. A few of them were discussed in this paper. I have tried to show that irreducible symmetry must be considered an autonomous characteristic of our conceptualization of certain event types; we have seen that it cannot be reduced to simultaneity, or to any “cumulative” property of a situation as a whole. It is also not purely extensional: Two-person reciprocals always describe a relation that is logically symmetric on these two persons (except in the very restricted case of the asymmetric situation type), but irreducibly symmetric predicates are nevertheless distinguished from ordinary, non-symmetric predicates.

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26. The predicate *see* is non-symmetric, since one can see someone else without being seen; and it is not irreducibly symmetric, of course. But the relation is symmetric on the set of guards, since any adjacent pair can see each other in this example.

Reciprocal situation types are “cumulative” in the above sense: they characterize a property of the aggregate relation, not of each constituent event. The two levels of description are distinct, although they interact in non-trivial ways as shown in Section 7.

It should be underscored that irreducible symmetry is a property of our *conceptualization* of a situation or activity, not a property of the situation itself. For example, a conversation normally consists of two people speaking in turns, with one person talking and the other listening; but verbs like *talk* (and suitable counterparts in other languages) conceptualize this activity as an event involving symmetric participation.<sup>27</sup> Similarly, a physical altercation may consist of a series of physical blows, each delivered by one person on another; but we can conceptualize it as the irreducibly symmetric activity “fighting”, and refer to it with the corresponding symmetric verbs. The same can even be said for events of meeting, since these are carried out through a series of acts that are not themselves irreducibly symmetric (as discussed in Section 6); it is our focus on the symmetric aspects of a meeting that renders it an irreducibly symmetric activity.

Symmetry need not always be linked to reciprocity.<sup>28</sup> It is easy to find examples of symmetric predicates that have no evidence of being reciprocal-marked (although languages differ in how frequently they allow this). Gleitman et al. (1996) point out that the equivalent of the simple/discontinuous reciprocal alternation is seen in English with other kinds of symmetric predicates:

- (66) a. *Bees and wasps are similar.*  
 b. *Bees are similar to wasps.*

Siloni (2002) and Rákosi (2003) make the same point on the basis of Hebrew and Hungarian examples. Such examples abound cross-linguistically, and their study could help distinguish those properties of reciprocals that are due to symmetry in general (cumulative or irreducible), from those that are linked to other aspects of reciprocal semantics or syntax. Plank (2006), for example, proposes that the German discontinuous construction was primarily available for symmetric intransitives, and that the discontinuous reciprocals cited above are formed by analogic extension. The present work, however, has focused on sorting out the role of symmetry in reciprocal contexts.

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27. The example is due to Ekkehard König.

28. The force of this statement depends on just how “reciprocity” is defined; cf. Section 2.

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# The inherently reflexive and the inherently reciprocal predicate in Hungarian: Each to their own argument structure

György Rákosi

## 1. Introduction

Languages utilize a variety of strategies to encode reflexivity and reciprocity by marking the predicate itself, rather than any of its dependents. The strategy that has received the bulk of the attention in the pertinent literature involves the relatively productive use of a clitic-like element, such as Romance *se* or German *sich*.<sup>1</sup> I illustrate this construction with a Spanish sentence:

(1) Spanish (Langendoen and Magloire 2003: 257)

*Ana y Pepe se quieren.*

Ana and Pepe SE like

(i) ‘Ana and Pepe like each other.’

(ii) ‘Ana and Pepe like themselves.’

Langendoen and Magloire (2003) cite (1) as an example of a natural language expression that denotes the generalized *reciproreflexive* relation. In the default case, these *se*-clitic constructions are indeed ambiguous between reflexivity

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1. There is no consensus on the syntactic status of *se*-elements. At the two ends of the scale, one may find proposals that treat them in all languages as simple morphological markers with essentially no syntactic status (Reinhart and Siloni 2004, 2005), and proposals which treat these morphemes as syntactic arguments of the predicate (see Alencar and Kelling 2005 both for arguments supporting this claim and for an overview of this whole issue). Since Hungarian lacks *se*-type elements altogether, it is not crucial here to take sides. I will continue to refer to these elements as “*se*-clitics”, but this does not imply any theoretical commitment with respect to their syntactic status.

and reciprocity, which is a well-known fact.<sup>2</sup> Nevertheless, most syntacticians disregarded the existence of this ambiguity until quite recently and discussed the construction *qua* a reflexive construction, assuming that the analysis naturally covered the reciprocal interpretation, too.<sup>3</sup>

In other languages, including Hungarian, Hebrew and Russian, the predicate-marking strategy is not productive and is generally confined to such cross-linguistically identifiable conceptual domains as “grooming” or “body care” actions and “naturally reciprocal” events (cf. Kemmer 1993; Reinhart and Siloni 2004, 2005; Siloni this volume, a.o.). “Inherently reflexive predicates” and “inherently reciprocal predicates”, as I will be referring to these two predicate classes, differ from the Spanish example given above in not licensing a recipro-reflexive ambiguity. As the following Hungarian sentences show, inherent reflexives and reciprocals can generally denote only one of the two respective relations (see also Siloni this volume).

(2) Hungarian

- a. *Anna és Péter csókol-óz-t-ak.*  
 Anna and Peter kiss-RSUF-PST-3PL  
 (i) ‘Anna and Peter kissed (each other).’  
 (ii) \*‘Anna and Peter kissed themselves.’
- b. *Péter és János borotvál-koz-t-ak.*  
 Peter and John shave-RSUF-PST-3PL  
 (i) ‘Peter and John shaved (themselves).’  
 (i) \*‘Peter and John shaved each other.’

It would appear perfectly motivated to expect that this strong semantic bifurcation triggers distinct (albeit appropriately related) paths of grammaticalization. In particular, there is no *a priori* reason to believe that inherently reflexive and reciprocal predicates have the same type of argument structure.

Yet, if data of the type illustrated in (2) are considered, the analysis generally proceeds under the assumption that the argument structure of reflexives and

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2. Depending on the language and the exact choice of the predicate, *se*-constructions can also have impersonal, depatientative, decausative or middle readings. I will not be concerned with this additional interpretive variation.

3. Gast and Haas (this volume) is a recent exception to this relative negligence of the importance of the general reflexive-reciprocal ambiguity in this domain. They argue that German *sich* has a dual categorial status: it is a clitic in (non-stressed) object positions, and a pronoun elsewhere. If a pronoun, *sich* may not denote a reciprocal relation.

reciprocals is essentially identical. There has been an intensive debate on the thematic profile of the subject and the question of whether it is an internal or an external argument of the reflexive/reciprocal predicate. However, little attention has been devoted to uncovering potential *differences* between the two predicate classes at the level of argument structure.

In this paper, I provide evidence from Hungarian showing that the syntactic properties of inherently reciprocal and reflexive predicates are not identical. One may find the occasional remark in the literature that reciprocal predicates are “more active” than reflexives, and I intend to show that this is more than an intuition. In the analysis put forward in this paper, the subject of inherent reciprocals must be an external argument, while the subject of inherent reflexives is external only by default and can be inserted as an internal argument under certain conditions. I assume a lexicalist view of grammar in which operations affecting the argument structure of a predicate take place in the lexicon. In particular, I present my analysis in terms of *Lexical-Functional Grammar* (cf. Bresnan 1982a, 2001).

The organization of the paper is as follows. In Section 2, I propose a heuristics to differentiate the class of inherent reflexives and the one of inherent reciprocals from each other. This will have some consequences, insofar as the so-called “discontinuous construction” is shown to be crucial in understanding the syntax of inherent reciprocals. Unlike inherent reflexives, which are derived lexically from corresponding transitive entries, monadic inherent reciprocals are derived from the predicate that projects the so-called “discontinuous construction”. In Section 3, I first review previous claims concerning the argument structure of inherent reflexives and reciprocals, and then turn to the investigation of how these predicates behave in Hungarian in unergative and unaccusative constructions. In Section 4, I present a novel LFG-theoretic analysis of inherent reflexives and reciprocals. What is shared by the two types of predicates is that both of them undergo the lexical process of “argument unification”. Since, however, the second argument to be unified is different in the two cases, the resulting argument cluster will map onto syntax in different ways, licensing an unaccusative derivation only in the case of inherently reflexive predicates.

## **2. Drawing the profile of inherent reflexives and reciprocals**

### **2.1. Initial assumptions**

By way of a preliminary definition, I assume that predicates in the inherent reflexive and reciprocal classes must meet the following three criteria. First,

they are in general unambiguously either reflexive or reciprocal.<sup>4</sup> Second, the members of each class encode a concept that belongs to a universally available *naturally reflexive* or *naturally reciprocal* conceptual domain characterized in an appropriate way. Third, they are directly marked by some morphology (the default case in Hungarian), or they are morphologically unmarked (the default case in English), but they do not require special marking of any of their arguments or adjuncts for the reflexive or reciprocal relation to hold.

In this section, I first show that there are no necessary or sufficient morphological criteria to identify either inherent reflexives or reciprocals in Hungarian. Then I proceed to defining these two classes instead on the basis of what typical argument structure alternations they participate in. This both helps us to better characterize the two classes, and provides us with some crucial background for the subsequent analysis.

## 2.2. On the role of morphology

In Hungarian, at least the core sets of inherent reflexives and reciprocals are derived from corresponding transitive predicates. Like almost any other word formation process in this language, these derivations are accompanied by morphological changes:<sup>5</sup>

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4. Siloni (this volume) notes that the Hebrew verb *hitlatef* ‘caress.RECP’ is ambiguous, at least for some speakers, between a reflexive and a reciprocal reading. As far as I am aware, this verb is the only one of its kind. In Hungarian, there are certainly no predicates that exhibit this type of ambiguity.
  5. I represent only the two most frequent marking patterns. It needs to be mentioned that the morpho(phono)logical structure of these complex words is not immediately obvious. The third person singular subject agreement morpheme *-ik* is generally claimed to be a middle marker (in the typological sense of Kemmer 1993), and the usual practice in Hungarian descriptive grammars is to treat whatever comes between the agreement morphology and the stem as a single morpheme. Thus in *mos-akod-ik* ‘washes self’, *-akod-* is taken to be a reflexive/middle suffix, where the initial vowel is a linking vowel that surfaces if the stem is monosyllabic. The quality of the suffix vowel(s) is subject to variation according to the rules of vowel harmony. However, *mosakodik* ‘washes self’ (and a number of other predicates under discussion) also has the semantically and functionally equivalent alternate *mosakszik* ‘washes self’, and it is plausible to capture this phonologically conditioned variation by assuming that the two forms share the common bound stem *mosak-* (Miklós Törkenczy, p.c.). I disregard this issue, and simply gloss these strings of phonemes as “R-suffixes” (RSUF), where *R* stands for “reduction”. What is important for us is that the same morphology appears on various types of predicates that undergo argument reduction.

- |     |   |   |  |
|-----|---|---|--|
| (3) | <i>mos-akod-ik</i><br>wash-RSUF-3SG<br>'washes self'      | <i>ver-eked-ik</i><br>beat-RSUF-3SG<br>'fights, wrestles' | <i>fésül-köd-ik</i><br>comb-RSUF-3SG<br>'combs self' |
| (4) | <i>borotvál-koz-ik</i><br>shave-RSUF-3SG<br>'shaves self' | <i>talál-koz-ik</i><br>find-RSUF-3SG<br>'meets'           | <i>ölel-kez-ik</i><br>hug-RSUF-3SG<br>'hugs'         |

Note that this morphology is undisputedly derivational, since the relevant elements precede all inflectional suffixes, and even some other derivational ones.

- |     |   |  |   |
|-----|---|--|---|
| (5) | <i>mos-akod-t-am</i><br>wash-RSUF-PST-1SG<br>'I washed' | <i>mos-akod-ná-tok</i><br>wash-RSUF-COND-2PL<br>'you would wash' | <i>mos-akod-ás</i><br>wash-RSUF-NMLZ<br>'washing' |
|-----|---|--|---|

This marking is thus purely morphological, and in this respect differs from *se*-type markers, which are relatively free with respect to the verbal stem they combine with. What the two types have in common is that they are both general markers of argument reduction (cf. Alsina 1996; Reinhart and Siloni 2004, 2005). Consequently, the Hungarian morphology illustrated above, which I gloss as "RSUF", appears on various types of derived intransitive predicates outside the reciproke domain, e.g.:

- |     |   |   |  |
|-----|---|---|--|
| (6) | <i>ural-kod-ik</i><br>dominate-RSUF-3SG<br>'reigns' | <i>nyal-akod-ik</i><br>lick-RSUF-3SG<br>'nibbles (at) tasty food' | <i>lop-akod-ik</i><br>steal-RSUF-3SG<br>'creeps'               |
| (7) | <i>imád-koz-ik</i><br>adore-RSUF-3SG<br>'prays'     | <i>ér-kez-ik</i><br>reach-RSUF-3SG<br>'arrives'                   | <i>próbál-koz-ik</i><br>try-RSUF-3SG<br>'makes a trial/trials' |

This means that there are no sufficient morphological conditions for establishing membership to either the reflexive or the reciprocal class.

Moreover, most inherently reciprocal predicates are not associated with reduction morphology at all, because (i) they lack a transitive stem (cf. [8a]), (ii) they are simply non-complex morphologically (cf. [8b]), or (iii) they are syntactically complex predicates (cf. [8c]). These can often be paired up with morphologically marked reciprocals which are closely related to them in meaning. Compare the predicates in the following pairs.

- |     |    |   |   |   |
|-----|----|---|---|---|
| (8) | a. | <i>szeret-kez-ik</i><br>like-RSUF-3SG<br>'makes love' | – | <i>közös-ül</i><br>common-RSUF<br>'copulates, makes love' |
|-----|----|---|---|---|

- |    |   |   |   |
|----|---|---|---|
| b. | <i>ver-eked-ik</i><br>beat-RSUF-3SG<br>'wrestles, fights'                     | – | <i>küzd</i><br><br>'struggles, contends, strives'               |
| c. | <i>érint-kez-ik</i><br>touch-RSUF-3SG<br>'associates, mixes,<br>communicates' | – | <i>kapcsolat-ban áll</i><br>contact-in stand<br>'is in contact' |

As we will see directly, the two groups show the same behaviour in any respect relevant to the classification of a given predicate as reciprocal.

The set of inherent reflexives appears to be much smaller on the whole than that of reciprocals, and most reflexives are marked by reduction morphology.<sup>6</sup> This morphology, however, has relatively low productivity in current Hungarian. The few novel activities that have only recently been conceptualized as naturally reflexive events are not R-marked. Consider the following example.

- (9) *Mikor gyantá-z-t-ál utoljára?*  
when resin-SUF-PST-2PL last  
'When did you last wax?'

The default (and indeed the dominant interpretation) of the Hungarian sentence is reflexive, though with appropriate contextual support (when, for example, the question is addressed to a beautician) we can interpret the implicit object as denoting individuals distinct from the subject referent. Nevertheless, it is exactly in such cases that one would expect R-morphology to appear on the predicate (as a formal correlate of the dominant reflexive reading), and the fact that this has not happened is weakly explained by assuming that reduction morphology is not a necessary marker of reflexivity in contemporary Hungarian.

Thus, we cannot define the inherently reflexive and the inherently reciprocal classes on morphological grounds, as R-morphology provides neither a sufficient, nor a necessary criterion for inclusion in either class. In the next two subsections, I present an alternative approach to classification, which is based on a comparison of the meaning of related reflexive and reciprocal constructions.

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6. I gathered 28 inherently reflexive predicates in Rákosi (2006) in Hungarian according to the criteria described in Subsection 2.3. The list is not complete, but the actual number of inherent reflexives in Hungarian is not assumed to be significantly higher. There are 18 inherent reciprocals with a transitive stem that I collected in that paper (again, there could probably be some more), but the set of non-R-marked reciprocals is significantly larger.

### 2.3. Inherent reflexives

It is general practice to relate the argument structure of an inherent reflexive to that of its transitive alternate, with an anaphor taking the position of the object argument:

- (10) a. *Peter shaved.*  
 b. *Peter shaved himself.*

Some authors simply assume that the two constructions are semantically equivalent (for example, Jackendoff 1987).

On closer inspection, however, semantic differences do surface. Langendoen and Magloire (2003) point out that the inherent reflexive is semantically stronger (i.e., more specific) than the transitive version. Consider the following examples.

- (11) a. *Peter and John are shaving.*  
 b. *Peter and John are shaving themselves.*  
 c. *Peter and John are shaving John.*  
 d. *Peter and John are shaving Peter.*

According to Langendoen and Magloire (2003), if (11c) and (11d) are true, then together they imply (11b), but not (11a). Thus (11b) may be true if (11a) is not, though (11b) is always true if (11a) is.

It is more significant for us that inherent reflexives in Hungarian are systematically more constrained in their lexical semantic content than their transitive alternates, as is exemplified by the following two cases.

- (12) a. *borotvál-ja magá-t*  
 shave-3SG himself-ACC  
 ‘removes hair from any part of the body, men or women’  
 b. *borotvál-koz-ik*  
 shave-RSUF-3SG  
 ‘removes hair from the face, only men’

- (13) a. *megtörli magá-t*  
 towel-3SG himself-ACC  
 ‘dries any part of the body, with any appropriate tool that touches the skin’  
 b. *megtöröl-köz-ik*  
 towel-RSUF-3SG  
 ‘dries the whole body with a towel’

Such semantic shifts are expected in lexicalizations. What (12) and (13) show is that in the case of reflexives the shift from the transitive to the intransitive construction generally seems to be accompanied by a unidirectional narrowing in denotation.

These facts can be used to set up an implicational schema which defines the class of inherent reflexives and which rules out other derived intransitives: only inherent reflexive constructions entail their transitive anaphoric paraphrases (Rákosi 2006). The two respective predicates are required to be morphologically related, so *commit suicide* is not considered to be an inherent reflexive even if its meaning is included in the denotation of *kill oneself*. Let me illustrate the operation of the schema here with the English inherent reflexive *shave* and the unaccusative verb *shake*.

- (14) a. *John was shaving.*  
 b. *John was shaving himself.*
- (15) a. *John was shaking.*  
 b. *John was shaking himself.*

In accordance with what I have shown above, (14a) entails (14b), but not vice versa. (15a), on the other hand, does not entail (15b), which furthermore requires strong contextual support to be acceptable, unlike (14b). Therefore the intransitive *shake* is not an inherently reflexive predicate, but the intransitive *shave* is.

## 2.4. Inherent reciprocals

### 2.4.1. What to compare?

At least the core set of inherent reciprocals can be related to transitive alternates, similarly to the case of the inherent reflexives discussed above.

- (16) a. *Péter és Anna csókol-óz-t-ak.*  
 Peter and Anna kiss-RSUF-PST-3PL  
 ‘Peter and Anna were involved in a mutual kissing activity.’
- b. *Péter és Anna (meg)-csókol-t-ák egymás-t.*  
 Peter and Anna PREV-kiss-PST-3PL each.other-ACC  
 ‘Peter and Anna kissed each other.’

It is well-known, however, that reciprocals also license the so-called “discontinuous construction”, in which an oblique expression accompanies the reciprocal predicate. This oblique position is marked by comitative case in Hungarian, and

it either hosts a reciprocal anaphor bound by the subject (cf. [17a]) or a referring expression whose denotation is not included in the denotation of the subject (cf. [17b]). In the latter case, reciprocity holds of the distinctly construed subject and oblique sets (Frajzyngier 1999; Dimitriadis 2004, this volume).

- (17) a. *Péter és Anna csókol-óz-t-ak egymás-sal.*  
 Peter and Anna kiss-RSUF-PST-3PL each.other-with  
 ‘Peter and Anna were involved in a mutual kissing activity with each other.’
- b. *Péter csókol-óz-ott Anná-val.*  
 Peter kiss-RSUF-PST Anna-with  
 ‘Peter was involved in a mutual kissing activity with Anna.’

This complex pattern of syntactic realization requires more attention than the reflexive case: it is not immediately obvious how these different argument structure versions are related to each other. To be able to provide an answer to this question, we must first submerge in the subtleties of the syntax and semantics of reciprocal predicates.

#### 2.4.2. *Inherent reciprocals do not relate systematically to transitive alternates*

In Rákosi (2006), I gathered 18 Hungarian inherent reciprocals altogether that have a transitive stem. More than half of these are more or less opaque semantically, like *találkozik* ‘meet’ (cf. [4] above) with its transitive stem *talál* meaning ‘finds’, or *érintkezik* ‘associates, communicates’ (cf. [8c]), whose transitive stem, *érint*, means ‘touches’. Even in the relatively compositional cases, the meaning shift between the transitive stem and the inherent reciprocal may be quite significant and unpredictable. For example, the reciprocal *csókolózik* ‘kisses’ in (16a) and (17) can only refer to a sexual type of kissing activity, whereas its transitive alternate *csókol* in (16b) might refer to any exchange of kisses (for example, of the greeting type). Therefore, native speakers tend to reject the transitive construction as in (16b) as a good paraphrase of any of the reciprocal constructions in (16a) and (17).

Dimitriadis (2004, this volume) argues that the formation of inherently reciprocal predicates always leads to the creation of *irreducibly symmetric predicates*, i.e. predicates that denote a binary relation whose arguments have identical participation in the event. But the fact that it is possible to define semantic output conditions over a particular lexical operation is in principle independent of whether the operation itself is compositional semantically or not. The semantics

of the majority of the inherently reciprocal predicates of Hungarian certainly cannot be derived compositionally from the meanings of their transitive stems, as we have just seen. Reciprocals contrast with reflexive predicates in this respect, since in the latter case the lexical operation that changes the transitive verb into an inherently reflexive entry has a semantic effect that is relatively easy to compute and predict.

Furthermore, as has already been pointed out in Section 2.1, the majority of reciprocal predicates are not derived, or at least not from transitive stems. It is definitely a challenging task to define the class extensionally, since prominent social activities are often lexicalized as reciprocal predicates, and there are many of these in such social domains as games, sports or communication, to list but a few. *Teniszezik* ‘plays tennis’, *kibékül* ‘make peace with’, *verseng* ‘compete’, and the like are not derived from transitive verbs but otherwise share all their grammatically important properties with the core set of inherent reciprocals.<sup>7</sup>

Thus it is only a relatively small (though perhaps prototypical) set of inherent reciprocals that relate to a transitive alternate with some degree of systematicity. I consider this a crucial grammatical property of the reciprocal class, which will have serious consequences for the analysis to be proposed below. If any given inherent reciprocal does have a (compositionally related) transitive alternate, then that correspondence is to be captured by individual redundancy rules in the lexicon for each such entry. With respect to our current objectives, this means that at the class level we cannot systematically rely on transitive constructions in an attempt at describing the characteristic properties of inherently reciprocal predicates. So let us instead turn our attention to the discontinuous construction.

#### 2.4.3. *The discontinuous construction is dyadic*

The oblique phrase that appears in the discontinuous construction is formally similar to comitative phrases that may be freely added to any agentive predicate. There are good reasons nevertheless not to collapse the two: *with*-phrases of reciprocal predicates have distinguishing semantic (cf. Dimitriadis 2004, this volume) and syntactic properties (cf. Siloni this volume for Hebrew; Komlósy 1994 and Rákosi 2003 for Hungarian). In particular, the oblique phrase in a discontinuous construction shows all the properties of an argument, unlike the more familiar comitative phrases, which are typical adjuncts.

Komlósy (1994) points out that the comitative in a discontinuous construction can be existentially bound in Hungarian. Since the syntactic expression

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7. Some of these predicates, for example, *táncol* ‘dances’ or *kártyázik* ‘plays cards’, are only optionally reciprocal (see also Siloni this volume). These have two lexical entries: one reciprocal and one non-reciprocal entry.

of the oblique phrase is, thus, optional (cf. [18b]), the discontinuous construction may at first sight appear to be indistinguishable from a regular comitative construction (cf. [18a]).

- (18) a. *Péter sétál-t (Kati-val).*  
 Peter walk-PST Kate-with  
 ‘Peter walked (with Kate).’
- b. *Péter csókol-óz-ott (Kati-val).*  
 Peter kiss-RSUF-PST Kate-with  
 ‘Peter was involved in a mutual kissing activity (with Kate).’

But (18b) is necessarily interpreted as denoting a situation in which at least two people were involved, whereas (18a), not containing an inherently reciprocal predicate, is merely compatible with such a construal. In other words, the comitative phrase is only syntactically optional in (18b), but the existence of the comitative referent is entailed by the predicate. Since being entailed is a typical argument property, the easiest way to account for this semantic difference is to treat the comitative as an argument in (18b).

Another argument supporting the same conclusion is that a reciprocal anaphor is only grammatical in the discontinuous construction (Komlósy 1994).

- (19) a. *Péter és Kati (\*egymás-sal) sétál-t-ak.*  
 Peter and Kate each.other-with walk-PST-3PL  
 ‘Peter and Kate walked (\*with each other).’
- b. *Péter és Kati (egymás-sal) talál-koz-t-ak.*  
 Peter and Kate each.other-with find-RSUF-PST-3PL  
 ‘Peter and Kate met (each other).’

Once again, if we analyze the comitative of an inherent reciprocal as an argument, then the licensing of the reciprocal anaphor in (19b) is to be expected. It is also not surprising that regular comitatives, being adjuncts, do not license anaphors (19a).

I would like to add that comitative marking of arguments is a generally available mechanism in Hungarian. Among other things, comitative case is also assigned to the logical subject of causativized transitive predicates.

- (20) *Péter level-et ír-at Anná-val.*  
 Peter letter-ACC write-CAUS Anna-with  
 ‘Peter makes Anna write a letter.’

This lends further support to the dyadic analysis of the discontinuous construction, which likewise includes a comitative argument.<sup>8</sup>

#### 2.4.4. *The discontinuous construction is not necessarily symmetric*

The symmetry-based approach to inherently reciprocal predicates, as developed by Dimitriadis (2004, this volume), rests on the assumption that members of a reciprocal relation have identical participation in any event denoted by the reciprocal predicate. If we limit our attention to two-participant situations only, the symmetry account entails that the simple reciprocal construction (cf. [21a]) is semantically equivalent to both possible corresponding discontinuous constructions (cf. [21b-c]).<sup>9</sup>

- (21) a. *John and Peter fought.*  
 b. *John fought with Peter.*  
 c. *Peter fought with John.*

Furthermore, this analysis also entails that the thematic profile of the subject and the oblique arguments in the dyadic construction (cf. [21b-c]) is the same. This is a serious problem for any theory that assumes the arguments of a predicate to have unique thematic specification.<sup>10</sup>

Suspending specific theoretical commitments for the time being, and drawing instead on a principle implicit in many approaches to the study of language, one has every reason to believe that two, formally non-identical constructions will license at least partially different interpretations. With respect to the case at hand, this implies that the dyadic reciprocal construction need not be equivalent to the monadic construction, and, consequently, that the dyadic construction need not necessarily be symmetric on the two argument positions. This is the position of Dowty (1991: 583–586), among others, who refers to what I am

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8. I refer the reader to Rákosi (2003) for further arguments supporting the non-adjunct status of comitative expressions in the discontinuous construction.

9. If the number of participants in a reciprocal situation is more than two, then the monadic and the dyadic reciprocal constructions are not semantically equivalent any more (see, among others, Dimitriadis 2004; Langendoen and Magloire 2003). The semantic differences that are induced by an increase in the number of participants do not, however, have an effect on how members of the reciprocal relation participate; therefore I will not be concerned with them.

10. LFG is such a theory. The *Function Argument Biuniqueness Principle* (see Section 4.1) requires every argument slot to be uniquely specified thematically. See Carlson (1998) for arguments that the uniqueness requirement stems ultimately from conditions on event representation and it is more than a simple syntactic device.

calling “inherently reciprocal” predicates as “partially symmetric interactive predicates”. What makes these predicates “partially” symmetric is that in the discontinuous construction, at least a subset of them licenses an interpretation in which only one of the arguments is a volitional participant. The crucial observation is that volition is entailed for the subject argument, but the second argument may be underspecified with respect to this semantic feature.

This is also the position that I advocate here and elsewhere (Rákosi 2003, 2005). I will now briefly review some of the arguments indicating that a given dyadic reciprocal construction is not always equivalent semantically to its converse (which should be the case if the construction were necessarily symmetric). First of all, a natural subclass of reciprocals, the set of predicates denoting enmity or conflict between the participants, may easily allow for asymmetric participation in Hungarian and in other languages as well:

- (22) *Én nem veszeked-t-em János-sal, ő veszeked-ett vel-em.*  
 I not quarrel-PST-1SG John-with he quarrel-PST with-1SG  
 ‘I was not quarrelling with John, he was quarrelling with me.’

(22) would result in a plain contradiction if the predicate were fully symmetric on the two argument positions, but the sentence is perfectly well-formed for native speakers. Second, many reciprocals quite naturally allow for non-human participants in the second argument position, but not in the first.

- (23) a. *Péter keringő-z-ött a seprű-vel.*  
 Peter waltz-SUF-PST the broom-with  
 ‘Peter danced the waltz with the broom.’  
 b. *#A seprű keringő-z-ött Péter-rel.*  
 the broom waltz-SUF-PST Peter-with  
 ‘#The broom danced the waltz with Peter.’

Third, metaphoric extensions of reciprocal predicates are regularly asymmetric, and the volitional argument must always be the subject, as is predicted by Dowty (1991).

- (24) a. *A halász-ok meg-küzd-ött-ek az elem-ek-vel.*  
 the fisherman-PL PREV-fight-PST-3PL the element-PL-with  
 ‘The fishermen fought with the elements.’  
 b. *#Az elem-ek meg-küzd-ött-ek a halász-ok-kal.*  
 the element-PL PREV-fight-PST-3PL the fisherman-PL-with  
 ‘#The elements fought with the fishermen.’

Data of this kind all point towards the same conclusion: the discontinuous reciprocal construction is not necessarily symmetric, contra Dimitriadis (2004, this volume) and Siloni (this volume). The least costly assumption in any argument structure theory is to assume that this lack of necessary symmetry derives from the assignment of qualitatively distinct thematic specifications to the two argument positions.

In previous work (Rákosi 2003, 2005), I have proposed that the first argument of a discontinuous reciprocal is a simplex *Agent*, whereas the second argument receives a special thematic role *Partner*. Since discrete thematic role labels have no theoretical status in the Proto-role – based mapping theory that I will assume below (Section 4), both *Agent* and *Partner* are here used simply as terms that refer to the semantic type of the two arguments of the discontinuous predicate. Intuitively, *Partner* is some sort of a “secondary” *Agent*. In terms of the Proto-role approach proposed by Dowty (1991), the subject argument of inherently reciprocal predicates is characterized by the following entailments: (i) volitional involvement, (ii) sentience, and (iii) causing an event or change of state in another participant. Whereas a reciprocal *Agent* is necessarily assigned these properties, a reciprocal *Partner* may have them only possibly (so strictly speaking, none of the above is entailed about the second argument). This, I believe, may provide an explanation for the asymmetries observed in (22)–(24).

To conclude, I agree with Dimitriadis (2004, this volume) in treating monadic reciprocals as necessarily symmetric, but dyadic reciprocals only optionally refer to atomic events in which both participants act in an identical manner. Dyadic reciprocals can naturally be interpreted asymmetrically, and in more extreme cases the second argument may show none of the *Agent* properties (note that it is not required to do so in the current approach):

- (25) *Anna csak játsz-ik Péter-rel.*  
 Anna just play-3SG Peter-with  
 ‘Anna is just playing with Peter.’

In the most likely interpretation (with additional pragmatic support from *csak* ‘just’) the role Peter plays in this situation is completely passive, and it is closer to the sort of participation that we would otherwise regard to be Patient-like. I regard this, and other asymmetry phenomena, as naturally compatible with the thematic dissimilarity of the two arguments.

It is implied by the above discussion that reciprocal predicates are required to be agentive. Consequently, I do not consider stative symmetric predicates to be reciprocals, in compliance with more traditional linguistic practice. Stative symmetric predicates do not show the asymmetry phenomena discussed above,

and their syntax diverges from that of reciprocal predicates in other important ways as well (see Rákosi 2005). In the remainder of this paper, I discuss only reciprocal predicates which are agentive, partially symmetric predicates.

#### 2.4.5. *Monadic and dyadic reciprocals*

The last issue we need to address in this section is the relation between the discontinuous and the simple reciprocal constructions. I have claimed that inherent reciprocals cannot systematically be related to transitive alternates (cf. Section 2.4.2). Each has, however, a discontinuous alternate. The question is, then, whether the discontinuous, dyadic entry is to be derived from the monadic entry, or vice versa.<sup>11</sup>

It might perhaps seem more natural to take the first option. Under such an analysis the *with*-phrase is akin to common comitative adjuncts, but crucially differs from the latter in being inserted as an argument. Dimitriadis (2004, this volume) calls attention to the fact that such an account does not immediately explain why the discontinuous strategy necessarily involves the partitioning of the participants into two sets along the respective denotations of the subject and the oblique arguments. To this I can add that this account can, in general, not easily explain the asymmetries that arise in the discontinuous construction.

No such problems arise, however, if the second analytic strategy is taken and the monadic entry is assumed to be derived from the dyadic one. The resulting monadic entry will have a single argument slot whose denotation is the union of the denotations of the two arguments of the dyadic reciprocal predicate. Moreover, asymmetry phenomena also disappear at the creation of the monadic entry. A further argument for this approach can be made on the basis of differences concerning the diverging potential of reciprocal predicates to drop the oblique phrase. I repeat the earlier example (18) as (26) to illustrate this.

- (26) a. *Péter sétál-t (Kati-val).* [= (18)]  
 Peter walk-PST Kate-with  
 ‘Peter walked (with Kate).’
- b. *Péter csókol-óz-ott (Kati-val).*  
 Peter kiss-RSUF-PST Kate-with  
 ‘Peter was involved in a mutual kissing activity (with Kate).’

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11. There exists, of course, a third option, according to which only a single lexical item is associated with each reciprocal predicate, and this item may be realized in an either monadic or dyadic syntactic construction. Such an analysis is not compatible with the lexicalist assumptions that I am making here, so I do not consider it in detail.

In accordance with Komlósy (1994), I treat the optional omission of the oblique phrase in (26b) as existential binding of this argument slot in the lexicon. The licensing of implicit arguments of this sort, being a lexical operation (cf. Bresnan 1982a), is subject to idiosyncratic constraints. Many reciprocal predicates do not allow it:<sup>12</sup>

- (27) *Péter találko-z-ott \*(Kati-val).*  
 Peter meet-PST Kate-with  
 ‘Peter met \*(Kate).’

These facts are not immediately explained in an approach in which dyadic reciprocals are derived from monadic entries, given that the assumed underlying monadic structure is not grammatical. Thus, unlike comitative adjuncts (cf. [26a]), comitative obliques of reciprocal predicates are not optionally inserted in (overt) syntax: in certain cases, their presence is obligatory (cf. [27]).

On the alternative analysis that I pursue here, existential binding can be defined on the basic dyadic entry depending on the choice of the predicate, and the monadic entry is derived from the dyadic entry in a lexical operation. This lexical operation reduces the number of arguments of the reciprocal predicate by one.<sup>13</sup>

## 2.5. Interim summary

We are now in a position to set up an implicational schema that helps to characterize inherently reciprocal predicates. I have argued that at the class level, inherent reciprocals cannot be related to transitive entries. They have, however, a dyadic (discontinuous) and a monadic (simple) version. Since the discontinuous construction (cf. [28b]) is only optionally symmetric, it is entailed by the simple construction, but not vice versa (cf. [28a]).

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12. I have no explanation for why certain reciprocals allow the oblique argument to be existentially bound, whereas others do not. Nevertheless, this is a possibility for many reciprocals in Hungarian, and the resulting construction is fully grammatical (cf. [26b]). For some reason, other languages do not allow for this sort of implicit argument formation as readily as Hungarian does (cf. Siloni this volume on Hebrew).

13. One potential problem for this analysis is that the formation of a monadic reciprocal from a more basic dyadic reciprocal is arguably a sort of reduction operation, but as such, it does not have any morphological correlates in Hungarian, or in any other language that I am aware of. I am grateful to Tali Siloni for reinforcing the importance of this fact for me.

- (28) a. *John and Peter were quarrelling.*  
 b. *John was quarrelling with Peter.*

Generalizing this, a predicate is regarded to be inherently reciprocal if (i) in one of its diatheses it licenses an argumental comitative phrase, and (ii) this dyadic construction is asymmetrically entailed by the monadic construction as is exemplified in (28).<sup>14</sup> The dyadic and the monadic versions are distinct lexical entries, but both are inherently reciprocal.

For comparison, I repeat the pair that exemplifies the schema for reflexive predicates:

- (29) a. *John was shaving.* [= (14)]  
 b. *John was shaving himself.*

I have claimed that the examples (28a) and (29a) are derived lexically from the dyadic entries in (28b) and (29b), respectively. What is common to these two operations is that in both cases the subject of the monadic predicate somehow inherits properties of both of the corresponding dyadic arguments. What is different in the two processes is that the second argument of the input entry is a *Patient* in the case of reflexives and a *Partner*, as I have argued, in the case of reciprocals. In Section 4, I will present an analysis which incorporates both of these observations.

Before proceeding, let me conclude this discussion with a terminological remark. Whereas *inherent reciprocals* are indeed *inherently reciprocal* in the true sense of the term in my approach, *inherent reflexives* are not *inherently reflexive* technically, as the reflexive relation they encode is derived. Nevertheless, I still adhere to this uniform terminology since the set of reflexive predicates that we

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14. This implicational schema can be appropriately modified to cover the following cases:

- (i) a. *John shared the meal with Mary.*  
 b. *John and Mary shared the meal.*  
 (ii) a. *Peter reconciled John with Mary.*  
 b. *Peter reconciled John and Mary.*

Both pairs contain transitive predicates, the difference being that (i) is reciprocal on the subject position, whereas (ii) is reciprocal on the object position. In the rest of the paper, I concentrate on intransitive reciprocals, but *mutatis mutandis*, the current proposal carries over to these transitive types, too. See Siloni (this volume) for more on the type of predicates represented by (ii).

Furthermore, I have nothing to say about the core English reciprocal verbs (*kiss*, *meet*, *hug*, etc.), which apparently have an object argument, rather than an oblique *with*-phrase in the dyadic construction; cf. also Dimitriadis (this volume).

gain through this procedure contains items that denote what appear to be *naturally reflexive events*. As such, they have a reflexivity potential independently of the fact that they are derived from transitive constructions.

### 3. The syntactic behaviour of inherent reflexives and reciprocals

#### 3.1. Unergatives or unaccusatives?

The more traditional view on the argument structure of inherently reflexive and reciprocal predicates is that they have an Agent subject, which is realized as an external argument (see de Groot 1989 and Komlósy 1994 specifically on Hungarian). In the general linguistic literature, it is the Romance data that have received most of the attention. I repeat (1) as (30) for illustration.

(30) Spanish (Langendoen and Magloire 2003: 257) (= [1])

*Ana y Pepe se quieren.*

Ana and Pepe SE like

(i) 'Ana and Pepe like each other.'

(ii) 'Ana and Pepe like themselves.'

Diverging from the traditional view, the unaccusative analysis of this construction came to be popular in the 1980s, starting with Marantz (1984).<sup>15</sup> Under this analysis, the subject noun phrase is an internal argument. What such proposals share with traditional accounts is that the subject is assumed to bear a single thematic role, but this time it is a Patient, rather than an Agent.

The two types of analyses are obviously not compatible with each other. One could argue that the productive *se*-constructions in Romance are not of the same grammatical type as the inherent reflexives and reciprocals that we have considered so far. Reinhart and Siloni (2004, 2005) formalize such an approach by proposing that the former are created in the syntax and the latter are derived in the lexicon.<sup>16</sup> This, however, does not in itself provide an immediate explanation for why both the unaccusative and the unergative analyses have proponents in the literature. After all, what we might deem the *simplex unergative approach* (i.e., the subject is regarded as a regular Agent) has been proposed independently for the Romance data, too (for example, in Grimshaw 1982).

15. I refer the reader to Alsina (1996), Reinhart and Siloni (2004) and Alencar and Kelling (2006) for a more detailed historical review of the literature.

16. Siloni (2001, this volume) extends this account specifically to reciprocals.

A possible way out of this analytical paradox is to treat the subject of reflexive and reciprocal predicates as some kind of a “hybrid” category. I want to focus on two like proposals, without entering the technical details of either for the time being. The first is that of Alsina (1996), who specifically builds an account of Romance *se*-predicates, arguing that they are intransitive predicates whose subject is a (Proto-)Agent and a (Proto-)Patient at the same time. He further argues that these predicates license either an unergative or an unaccusative derivation, depending on whether the phenomenon in question is sensitive to unergativity or to unaccusativity. The second proposal is that of Reinhart and Siloni (2004, 2005), which aims at universal coverage. They also treat the subject of these predicates as a bearer of two thematic roles (for them, it is Agent and Theme), but they differ from Alsina in only allowing for an unergative derivation.

To get a better grasp of the empirical side of this problem, it is crucial, I believe, to recognize that reflexive (and reciprocal) predicates do not show any traits of what Bresnan and Zaenen (1990) refers to as “surface unaccusativity”. In the current context, this means that if the particular testing construction involves the basic form of the predicate, which is not affected by any operations targeting argument structure, then no unaccusative behaviour is licensed, irrespective of the choice of language. The following two examples from Reinhart and Siloni (2004: 172–174) illustrate this point (cf. also Siloni this volume). First, (31b) shows that reflexives (and reciprocals) in Italian do not license *ne*-cliticization, in contrast to unaccusatives (cf. [31a]).

- (31) a. *Ne sono arrivati tre.*  
of.them are arrived three  
‘Three of them arrived.’  
b. \**Se ne sono vestiti tre.*  
se of.them are dressed three  
‘Three of them have dressed.’

Second, unaccusatives can appear in simple inversion in Hebrew (i.e., they can occur in a surface object position), while reflexives (and reciprocals) cannot.

- (32) a. *Nišbar mašehu.*  
broke something  
‘Something broke.’  
b. \**Hitlabšu šaloš dugmaniyot ba-knisa.*  
dressed three models in.the-entrance  
‘Three models dressed in the entrance.’

I refer the reader to the works cited above for a comprehensive catalogue of the contexts in which reflexive and reciprocal predicates show unergative properties.

Note that Alsina's theory cannot easily provide a principled explanation for the ungrammaticality of (31b). If Romance *se*-predicates are alternatively unergative or unaccusative, and the choice is dependent on the phenomenon in question, then we would expect (31b) to be grammatical. The same goes for (32b), if Alsina's analysis is to be extended to inherent reflexives outside the Romance domain. It seems to be a robust cross-linguistic generalization that the default syntax of reflexive and reciprocal predicates is unergative, and this fact must be captured in any adequate account.

Alsina (1996), however, also discusses three grammatical phenomena which show the selfsame predicates to be unaccusative, rather than unergative. There are in principle two ways to accommodate such data. It is possible to argue that the tests are in fact not directly sensitive to unaccusativity, but to the presence of a Patient argument. This condition is satisfied in both proposals under consideration, inasmuch as the subject is taken to be associated with both the Agent and the Patient/Theme thematic roles.<sup>17</sup>

The second, and more interesting, possibility is that reflexive predicates *can* undergo unaccusative derivations. To see what may license this, let me subject his third unaccusativity test to closer scrutiny. Alsina (1996: 102) points out that in the so-called "participial absolute" construction in Italian an overt noun phrase may follow the participle in what appears to be an object position, but only if this noun phrase is an internal argument. Thus, the construction licenses unaccusatives (cf. [33a]) *and also reflexives* (cf. [33b]), but not unergatives (cf. [33c]).

- (33) a. *Arrivata Maria, Gianni tirò un sospiro di sollievo.*  
lit.: 'arrived Maria, Gianni was relieved'

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17. At least one of Alsina's unaccusativity tests that reflexive and reciprocal *se*-constructions pass might be explained under this premise. When a transitive or an unergative verb is causativized in Romance, the causee can be omitted with a human arbitrary interpretation. Reflexives and unaccusatives do not allow this omission. Alsina (1996: 99) mentions, however, that this difference disappears in generic contexts, in which unaccusatives also license the omission of the object causee. Therefore, this kind of omission may be conditioned by purely semantic factors.

His second test concerns auxiliary selection in complex tenses: in Italian and in French reflexives and reciprocals tend to require a *be*-type auxiliary (*essere* and *être*, respectively), just like unaccusatives do. I refer the reader to Reinhart and Siloni (2005) for detailed arguments against treating auxiliary selection as an unaccusativity diagnostic.

- b. *Rintanatosi Don Enzo tra le amate antiche carte, ...*  
 ‘Don Enzo having shut himself away among his beloved manuscripts, ...’
- c. \**Telefonato Gianni, Maria andò all’appuntamento.*  
 lit.: ‘telephoned Gianni, Maria went to the appointment’

The same participle form, however, also appears in what Reinhart and Siloni (2004: 173) discuss as the “reduced relative construction”. Reflexives are not grammatical in this construction, in which they pattern with unergatives, as unaccusatives are fine:

- (34) a. *L’uomo arrivato a Ginevra è una spia.*  
 the man arrived in Geneva is a spy
- b. \**L’uomo lavatosi ieri è mio nonno.*  
 the man washed-SI yesterday is my grandfather
- c. \**L’uomo telefonato a suo nonno è una spia.*  
 the man telephoned to his grandfather is a spy

(33b) and (34b) contrast in a way that appears to be puzzling at first sight.

The contrast, however, is only apparent. As Adriana Belletti informs me (p.c.), the more idiomatic and non-compositional the participle is, the more acceptable it is in *both* participial constructions. Thus not only (33b) but (35), too, is acceptable, this latter being only “perhaps a bit less natural” than (33b) (A. Belletti p.c.). (35) involves the idiomatic reflexive *rintanatosi* ‘shut oneself away, lock oneself in one’s room’ in the reduced relative construction.<sup>18</sup>

- (35) *L’uomo rintanatosi tra le amate antiche carte, era*  
 the man shut.himself among his beloved manuscripts was  
*Don Enzo.*  
 Don Enzo

*Rintanatosi* is an inherently reflexive predicate in the sense in which I use this term here: it is an unambiguously reflexive predicate that is stored in the lexicon as such. In actual fact, it has a direct R-marked equivalent in Hungarian: the intransitive *bezárkózik* ‘locks oneself away’, which is derived from the transitive *bezár* ‘shuts’. As an inherently reflexive predicate, both the Hungarian and

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18. I owe this example to Adriana Belletti. *Presentatisi* ‘(having) present(ed) self, (having) appear(ed)’ and *dedicatosi* ‘(having) dedicate(d) self’ are two other participles derived from idiomatic reflexives that behave the same way as *rintanatosi* ‘(having) shut self’.

the Italian predicates are stored in the lexicon as separate entries. Siloni (2001, this volume) makes the same claim with respect to certain Romance reciprocal predicates, such as French *se battre* ‘fight’, whose syntax is different from the syntax of productive *se*-predicates. Whatever one thinks of the *se*-strategy of reciprocative marking, it must be acknowledged that *se*-forms may also denote a naturally reflexive or reciprocal concept and that they can be lexicalized as such.<sup>19</sup>

The conclusion to be drawn from (33)–(35) is that at least certain reflexive predicates can show unaccusative behaviour. In Romance languages, it is a restricted set of perhaps a handful of lexicalized, non-compositional *se*-predicates. I will hypothesize here that such predicates only license an unaccusative derivation if there is a *lexical* operation which takes the base form of the predicate as its input, and which feeds on the presence of a Patient argument. Therefore the unaccusative derivation of lexical reflexives is a restricted option: it is only licensed if there is a specific lexical trigger for it (like, arguably, participle formation is a lexical process). Otherwise, reflexives and reciprocals have an unergative derivation by default, determined by the presence of an Agent role, which is also assigned to the subject of reflexive and reciprocal predicates. For expository purposes, I summarize this as a hypothesis on the syntactic realisation of argument clusters.

(36) **Hypothesis on the syntactic realization of argument clusters**

- a. By default, an argument cluster is realized as an external argument.
- b. Lexical operations may override the default, in which case it is the lower ranking thematic role in the cluster that determines the mapping.

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19. What is less predictable is exactly which *se*-predicates will get lexicalized in the Syntax languages of Reinhart and Siloni (2004, 2005). As Tali Siloni warns me, one must not forget the fact that not every predicate that apparently has a naturally reflexive or reciprocal conceptual content is lexicalized in these languages. The participle *lavatosi* ‘(having) wash(ed) self’ is not grammatical in the unaccusative reduced relative construction (cf. [34b]), unlike *rintanatosi* ‘(having) shut self’. By one of my previous criteria (see Section 2.1.), the former is not an inherently reflexive predicate, since it may in principle denote either a reflexive or a reciprocal relation (among others). *Rintanatosi*, on the other hand, is unambiguously reflexive on the intended reading. It may be that lexicalization of *se*-predicates is only triggered in Romance if the predicate is substantially idiomatic, but I do not wish to speculate on this.

(36) represents some sort of a middle ground between Alsina (1996), who allows for unaccusative derivations quite freely, and Siloni and Reinhart (2004, 2005), for whom the unergative derivation of reflexive and reciprocal predicates is obligatory. The next task is to check whether this Hypothesis makes the right predictions for Hungarian, a language where reflexive and reciprocal predicates are always formed in the lexicon. We should keep in mind that I have argued that inherent reciprocals have a derivational history that is different from that of inherent reflexives. If this is indeed on the right track, then reciprocals are expected to differ from reflexives. Let us see if this is so.

### 3.2. Testing the Hungarian data

#### 3.2.1. Overview

Hungarian is known to be a discourse configurational language, in which syntactic functions are not coded configurationally in overt syntax. As a result, Hungarian shows properties of “deep unaccusativity” only (cf. Bresnan and Zaenen 1990). In this section, I will test inherently reflexive and reciprocal predicates in three constructions that have been claimed to be sensitive to unaccusativity: resultative predication, attributive perfect participles and stative -vA-participles.

Recall that I have argued that inherent reciprocals cannot be productively related to transitive entries. Furthermore, they have two diatheses: a dyadic, discontinuous version (cf. [37a]), and a monadic version (cf. [37b]) that is derived from the former through a special type of “argument unification process” (to be discussed in Section 4).

- (37) a. *Peter quarrelled with Jane.*  
b. *Peter and Jane quarrelled.*

If this is true, the reciprocal entry in (37a) has a simplex Agent subject, and the subject of the monadic entry bears the cluster that I will refer to as “Agent-Partner”. Neither reciprocal is expected to license unaccusative derivations, in contrast to inherent reflexives, which have an Agent-Patient subject. The presence of the Patient role can in principle give rise to unaccusative derivations for inherently reflexive predicates, as follows from the Hypothesis in (36).

#### 3.2.2. Resultative predicates

As is well-known, resultative predicates can be added to unaccusative, but not to unergative predicates (cf. Simpson 1983; Bresnan and Zaenen 1990; Rothstein 2004 for more recent arguments that resultative predication is lexically governed). Nevertheless, unergatives can take a *fake reflexive* or *nonsemantic*

*object*, which licenses a resultative predicate. This applies to Hungarian as well (cf. Komlósy 1994; Bene 2005).

- (38) a. *A váza darab-ok-ra tör-t.*  
 the vase piece-PL-onto break-PST  
 ‘The vase broke into pieces.’
- b. *A kutya rekedt-re uga-tta magát-t.*  
 the dog hoarse-onto bark-PST itself -ACC  
 ‘The dog barked itself hoarse.’

These two constructions can thus be used as unaccusativity or unergativity tests, respectively.

Let us see first whether inherent reflexives and reciprocals can take a resultative predicate in the absence of a fake reflexive, i.e. whether their subject can behave as an internal argument. It turns out that reflexives are generally grammatical licensors of resultatives (cf. [39]), but reciprocals are not, even if the secondary predicate is such that it could plausibly denote an appropriate resultant state of the inherently reciprocal event (cf. [40]). Whether the reciprocal is used in the monadic or the dyadic pattern has no effect on the grammaticality judgements.

- (39) a. *A katoná-k száraz-ra töröl-köz-t-ek.*  
 the soldier-PL dry-onto towel-RSUF-PST-3PL  
 ‘The soldiers towelled (themselves) dry.’
- b. (?) *A katoná-k tisztá-ra mos-akod-t-ak.*  
 the soldier-PL clean-onto wash-RSUF-PST-3PL  
 ‘The soldiers washed (themselves) clean.’
- (40) a. \**A katoná-k fáradt-ra küzd-ött-ek (az ellenség-gel).*  
 the soldier-PL tired-onto fight-PST-3PL the enemy-with  
 ‘\*The soldiers fought tired (with the enemy).’
- b. \**A fiatal-ok beteg-re szeret-kez-t-ek (egymás-sal).*  
 the youth-PL sick-onto love-RSUF-PST-3PL each.other-with  
 ‘\*The youths copulated sick.’ [on the resultative reading]

This test, therefore, shows that the subject of inherent reflexives can be an internal argument, while that of inherent reciprocals cannot.

On the other hand, both reflexives and reciprocals can license the fake reflexive construction:

- (41) a. *A katonák beteg-re borotvál-koz-t-ák maguk-at.*  
 the soldier-PL sick-onto shave-RSUF-PST-3PL  
 themselves-ACC  
 ‘The soldiers shaved themselves sick.’
- b. *A fiatal-ok beteg-re szeret-kez-t-ék maguk-at.*  
 the youth-PL sick-onto love-RSUF-PST-3PL themselves-ACC  
 ‘The youths copulated themselves sick.’

This confirms that both reflexive and reciprocal subjects can have unergative properties, i.e. the subject can be an external argument in the case of both predicate classes.

### 3.2.3. Attributive perfect participles

In standard Hungarian, perfect participles can be used attributively if the modified nominal head corresponds to an argument of the verbal stem that is causally affected or undergoes a change of state. As these are Proto-Patient properties (Dowty 1991), the construction can be used as an unaccusativity test (cf. Alberti 1997; Laczkó 2000).<sup>20</sup> If the verbal stem is intransitive, it is generally required to be telic. Unergatives, whether atelic or telic (cf. [42b]), cannot form attributive perfect participles.

- (42) a. *a reggel érkez-ett vendég-ek*  
 the morning arrive-PTCP guest-PL  
 ‘the guests who arrived in the morning’
- b. *\*a váratlanul fel-kiált-ott fiú*  
 the unexpectedly up-shout-PTCP boy  
 ‘the boy who cried out unexpectedly’

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20. There exists extensive literature of the two Hungarian participial constructions that I discuss in Sections 3.2.3 and 3.2.4. The interested reader may find English overviews in Komlósy (1994), Alberti (1997), Laczkó (2000) and Horváth and Siloni (2005). With respect to the attributive use of the perfect participle, it should be noted that generic contexts and the heaviness of the participial phrase may facilitate the acceptability of unergative inputs, therefore these two factors are filtered out in the examples below. Also, certain versions of Hungarian (most notably, journalism) extend the use of the perfect participle to any context in which the event denoted by the participle is anterior to the reference time. In those dialects, the distinction between unaccusatives and unergatives is not as clear as in the case of the standard dialect.

Telic inherent reflexives are generally fine as an input to this type of participle formation for most speakers, though some find (43) somewhat marked (as opposed to [42a]).

- (43) <sup>(?)</sup>*a reggel meg-borotvál-koz-ott / meg-fésül-köd-ött*  
 the morning PREV-shave-RSUF-PTCP / PREV-comb-RSUF-PTCP  
*katonák*  
 soldier-PL  
 ‘the soldiers who shaved/combed in the morning’

Telic reciprocals, as a class, fare much worse in this test than reflexives. Let us consider dyadic reciprocals first, some of which are unacceptable (cf. [44a]); some others are judged to be better, even though not completely grammatical (cf. [44b]).

- (44) a. \**a Kati-val reggel össze-találkoz-ott /*  
 the Kate-with morning PREV-meet-PTCP /  
*meg-állapod-ott fiú*  
 PREV-agree-PTCP boy  
 ‘the boy who came across/made an agreement with Kate in the morning’
- b. <sup>??</sup>*a Kati-val reggel össze-barát-koz-ott /*  
 the Kate-with morning PREV-friend-RSUF-PTCP /  
*ki-békül-t fiú*  
 out-make.peace-PTCP boy  
 ‘the boy who made friends/peace with Kate in the morning’

There is no obvious correlation between the morphological structure of the reciprocal (i.e. whether it has a transitive stem or not) and its relative (un)acceptability in this construction.

Switching from the discontinuous construction to the simple construction considerably improves acceptability:

- (45) a. <sup>??</sup>*a reggel össze-találkoz-ott / meg-állapod-ott*  
 the morning PREV-meet-PTCP / PREV-agree-PTCP  
*fiatal-ok*  
 youth-PL  
 ‘the youths who came across each other/made an agreement in the morning’

- b. <sup>?(?)</sup>*a reggel össze-barát-koz-ott /*  
 the morning PREV-friend-RSUF-PTCP /  
*ki-békül-t fiatal-ok*  
 out-make.peace-PTCP youth-PL  
 ‘the youths who made friends/peace in the morning’

Note that this improvement cannot be explained by simply assuming that it is the mere presence of the comitative-marked (Partner) argument in (44) which makes those examples somewhat worse than the ones in (45). The subject of a causativized transitive predicate is also comitative-marked (cf. [20] above), but its presence or absence is equally grammatical if a perfect participle is formed from the causativised predicate:

- (46) *a (Péter-rel) reggel meg-ír-at-ott levél*  
 the Peter-with morning PREV-write-CAUS-PTCP letter  
 ‘the letter which Peter was made to write in the morning’

To sum up, monadic reciprocals are more acceptable in this participial construction than dyadic reciprocals, but they contrast with reflexives in still not being fully acceptable. This shows, once again, that only the subject of inherent reflexives can behave as a full-fledged internal argument.

### 3.2.4. Stative -vA participles

The formation of stative participles marked with the -vA participial suffix is subject to similar constraints as perfect participle formation (cf. Section 3.2.3). In addition to the requirement that the verbal stem should be telic and have an argument which is causally affected (of which the participle is predicated), the construction is also required to be stative in standard Hungarian, in the sense that it has to describe the resultant state in which the Patient argument is at the culmination of the event denoted by the stem. It is for this reason that this participle formation process can be used as an unaccusativity test (cf. Alberti 1997; Bene 2005; Laczkó 2000).

- (47) a. *János el van fárad-va.*  
 John PREV is get.tired-PTCP  
 ‘John is in the state of having got tired.’
- b. \**János már fel van kiált-va.*  
 John already up is shout-PTCP  
 intended meaning: ‘John is already in the state of having cried out.’

As (47b) shows, unergative verbs cannot form stative -vA participles.

As in the previous case, inherent reflexives are fully acceptable for most speakers, though again, some find them slightly marked.

- (48) (?) *A katonák már meg annak borotvál-koz-va /*  
 The soldier-PL already PREV are shave-RSUF-PTCP /  
*fésül-köd-ve.*  
 comb-RSUF-PTCP  
 ‘The soldiers are in the state of having shaved/combed.’

Reciprocals, just like in the perfect participial construction, do not behave uniformly. Some are totally ungrammatical in both the dyadic and the monadic patterns:

- (49) \**A katonák össze vannak találko-z-va (az ellenség-gel).*  
 the soldier-PL PREV are meet-PTCP the enemy-with  
 ‘The soldiers are in the state of having come across (with the enemy).’

Others are marginally acceptable if dyadic, and they improve in the monadic use.

- (50) a. ??*János meg van egyez-ve Kati-val.*  
 John PREV is agree-PTCP Kate-with  
 ‘John is in the state of having agreed with Kate.’  
 b. ?*János és Kati meg vannak egyez-ve.*  
 John and Kate PREV are agree-PTCP  
 ‘John and Kate are in the state of having made a mutual agreement.’

And there are a few which are not fully acceptable in the dyadic alternate, but are judged perfectly acceptable by most native speakers in the monadic version.

- (51) a. ??(?)*János össze van házasod-va Kati-val.*  
 John PREV is marry-PTCP Kate-with  
 ‘John is married to Kate.’  
 b. *János és Kati össze vannak házasod-va.*  
 John and Kate PREV are marry-PTCP  
 ‘John and Kate are married.’

It seems that what matters here is the nature of the result state: if the result state describes a property of the subject argument that is salient and is generally

conceptualized as such, then the participial construction can be licensed by reciprocal predicates, too, even if it is not always fully natural.

It may very well be the case that the fully grammatical reciprocal participles (such as [51]) have been more or less lexicalized, just like the English *be married* or *be agreed* (cf. [52]).

(52) *We are agreed* (\*with each other).

Note that this use of *agreed* does not readily tolerate a comitative argument, which is reminiscent of the weaker grammaticality contrast we have observed between the Hungarian monadic and dyadic reciprocal constructions above.

### 3.3. Interim summary

The Hungarian data just surveyed lend empirical support to the two initial hypotheses made above. First, it must be acknowledged that, even though the subject of inherently reflexive predicates is dominantly realized as an external argument, it may be realized as an internal argument as well, under certain conditions. This is compatible with Alsina's (1996) Romance-based account, but not with the approach of Siloni and Reinhart (2004, 2005). However, the unaccusative derivation is a restricted option. By the hypothesis in (36), the unaccusative derivation is only licensed if the basic argument structure of the reflexive predicate serves as an input to a lexical operation that feeds on the presence of an internal argument. The two types of participle formation operations and resultative predication are lexical processes of this sort.

The second expectation was that inherent reciprocals will not necessarily pattern with resultatives, and the tests that we have carried out have confirmed this expectation. On the whole, inherent reciprocals pattern with unergative, and not with unaccusative predicates, as is argued specifically by Siloni (2001, this volume). Nevertheless, some reciprocal predicates have turned out to be marginally or relatively acceptable in either of the two participial constructions. The systematic pattern that emerges in these cases is that monadic reciprocals score observably better in these unaccusative structures than dyadic reciprocals.

Finally, it is inherent in the formulation of the hypothesis on the syntactic realization of argument clusters (cf. [36]) that the two mapping options licensed by the cluster are strictly disjunctive: the relevant argument will either behave as an internal or as an external argument in any particular construction in which it appears. In other words, the unergative and the unaccusative derivations of reflexives are not licensed *at the same time*. I repeat two earlier examples as (53).

- (53) a. *A katonák beteg-re borotvál-koz-t-ák*  
 the soldier-PL sick-onto shave-RSUF-PST-3PL  
*maguk-at.* [= (41a)]  
 themselves-ACC  
 ‘The soldiers shaved themselves sick.’
- b. <sup>(?)</sup>*a reggel meg-borotvál-koz-ott katonák* [= (43)]  
 the morning PREV-shave-RSUF-PTCP soldier-PL  
 ‘the soldiers who shaved in the morning’

(53a) shows that the subject of the inherent reflexive *borotválkozik* ‘shaves’ can be an external argument, and (53b) shows that it can be an internal argument. However, if we try to force these two constructions into a single expression, the result is ungrammatical:

- (54) \**a reggel maguk-at beteg-re borotvál-koz-ott*  
 the morning themselves-ACC sick-onto shave-RSUF-PTCP  
*katonák*  
 soldier-PL  
 ‘the soldiers who shaved themselves sick in the morning’

This is to be expected, since a single instance of the realization of a predicate cannot be unaccusative and unergative at the same time.

#### 4. The argument structure of inherent reflexives and reciprocals

##### 4.1. The LFG mapping theory

Lexical-Functional Grammar regards a(rgument)-structure as a level of representation where the “minimal lexical information needed for the projection of semantic roles onto surface syntactic functions” is stored (Bresnan 2001: 368). I will briefly review the generally accepted mapping theory that constrains this projection. In particular, I will adopt a Downtian reconsideration of the original proposal made by Bresnan and Kanerva (1989).<sup>21</sup>

The mapping of argument structures to the set of subcategorizable syntactic functions (subject, object, oblique and secondary object in languages which have a ditransitive construction) is conditioned by two component sets of rules. One provides argument structure roles (i.e. thematic roles) with syntactic role

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21. See also Bresnan (2001) and Dalrymple (2001) for a more detailed presentation of this mapping theory.

classifications, by assigning them two valued features: [+/-r] and [+/-o], where *r* stands for the feature *semantically restricted*, and *o* stands for the feature *objective*. These features cross-classify the subcategorizable syntactic functions in the following way.

(55)

	-r	+r
-o	SUBJ	OBL <sub>Θ</sub>
+o	OBJ	OBJ <sub>Θ</sub>

The valued features can each be regarded as shorthands for natural classes of syntactic functions, as is clear from the table.

Thematic roles assigned to argument slots of a predicate receive these features in two steps. I assume a nondiscrete approach to thematic roles as advocated in Dowty (1991), with the only two roles being *Proto-Agent* and *Proto-Patient*.<sup>22</sup> Dowty’s Proto-role theory has been adapted to the standard LFG mapping theory by Ackermann (1992), Zaenen (1993), and Alsina (1996), among others. In this approach, arguments first receive an intrinsic classification on the basis of their inherent thematic content as described below (Ackermann 1992: 64):

- (56) Principles of intrinsic classification
- (i) The argument with the most or most heavily weighted Proto-Patient properties is intrinsically classified as [-r].
  - (ii) The argument with the most or most heavily weighted Proto-Agent properties is intrinsically classified as [-o].
  - (iii) All other arguments are intrinsically classified as [-o].

Second, in what is called the “default classification”, the highest ranking argument receives a [-r] valued feature, and the rest receive [+r] – unless it would repeat or contradict the intrinsic classification. I assume that which argument qualifies as highest is calculable by counting and weighting Proto-Agent entailments, as is suggested by Dowty (1991). The operation of this feature assignment mechanism will be described in the next section on reflexive and reciprocal data.

Lexical forms are further subject to certain well-formedness constraints, of which two are relevant here. The *Subject Condition* requires that every verbal argument structure should have at most one subject. The *Function-Argument Biuniqueness Principle* defines a one-to-one mapping between argument slots and syntactic functions.

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22. Though I will continue using traditional thematic role labels, too, which are regarded here as convenient means of referring to certain semantic types of arguments.

(57) *Biuniqueness of Function-Argument Assignments* (Bresnan 1982b: 163)

$G = g_1 \dots g_n$  is a possible grammatical function assignment to  $P(1 \dots m)$  iff the mapping from  $1 \dots m$  to  $G$  defined by  $i \rightarrow g_i$  is injective (one-to-one and into).

[Where  $g_1 \dots g_n$  is a list of grammatical functions, and  $P(1 \dots m)$  is a semantic form with a list of arguments  $1 \dots m$ .]

Note that (57) allows for a single argument slot to receive multiple thematic specifications, since biuniqueness is not relative to thematic roles, but to argument *slots*.

Finally, I will follow the standard LFG practice in treating the unaccusative-unergative distinction as primarily an argument structure phenomenon, without necessary configurational correlates (cf. Bresnan and Zaenen 1990, a.o.). For our current purposes, the term ‘unergative predicate’ will be understood to denote a predicate with a Proto-Agent subject, and by ‘unaccusative predicates’ I will mean intransitive predicates whose subject has Proto-Patient properties, the Proto-roles being interpreted in terms of Dowty (1991).<sup>23</sup> By the feature classification system that I have briefly summarized above in (56), unergative predicates are those intransitive predicates whose subject is intrinsically classified as [-o], whereas the subject of an unaccusative predicate is intrinsically classified as [-r] (cf. Bresnan and Zaenen 1990; Zaenen 1993).

## 4.2. Argument unification

As we have seen, both Alsina (1996) and Reinhart and Siloni (2004, 2005) discuss the formation of inherent reflexives and inherent reciprocals as a process in which an argument cluster is created. Alsina (1996) refers to this process as *argument-structure binding*. The term is indicative of the fact that in his proposal, reflexives and reciprocals are technically dyadic entries, but two of their argument slots receive the same mapping index and therefore they map onto the same syntactic function. By contrast, Reinhart and Siloni (2004, 2005) discusses this operation as *Bundling*. Bundling is a reduction operation which unifies two thematic roles upon one and the same argument slot, which bears the complex thematic role Agent-Theme.

I follow the spirit of this latter proposal, but I will use the somewhat more neutral term “argument unification” to refer to the lexical operation that is involved

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23. The existence of theme unergatives (the internally caused verbs of Levin and Rappaport 1995) represent a problem for this approach, but I disregard this issue here.

in the formation of inherently reflexive and reciprocal predicates. I diverge, however, from both Alsina (1996) and Reinhart and Siloni (2004, 2005) in relating reciprocals to transitive stems. Rather, dyadic reciprocals are taken to be primitives, as has been extensively argued in Section 2. Monadic reciprocals are derived from the corresponding dyadic entries by unifying the comitative and the subject arguments.

Thus the two basic structures which argument unification acts upon are the following:

- (58) a. *János meg-fésül-te magát.*  
 John PREV-comb-PST himself -ACC  
 ‘John combed himself.’
- b. *A katonák veszekedtek az őrmesterrel.*  
 the soldier-PL quarrel-PST-3PL the sergeant-with  
 ‘The soldiers quarrelled with the sergeant.’

The mapping of the predicate in (58) is straightforward (see the overview in Section 4.1).

(59)	<i>megfésül</i>	‘comb <sub>tr</sub> ’ intrinsic default	<[P-Agent], [-o] [-r]	[P-Patient] > [-r]
-----				
	Biuniqueness		SUBJ SUBJ	SUBJ/OBJ OBJ

As for the dyadic reciprocal, I argued in Section 2.4.4 that it has an Agent subject and a Partner oblique. The thematic role Partner is underspecified for the Proto-Agent properties *volitional involvement*, *sentience* and *being a causer* (i.e., these are taken to be defined properties of Partner-type participants, but the values are not specified). This makes it a secondary Agent role, which does not qualify either as a Proto-Agent or a Proto-Patient. I follow Alsina (1996) in treating this argument as one which lacks Proto-role classification, marked below by a pair of square brackets without internal content.<sup>24</sup> Thus, intrinsic classification (cf. [56]) assigns the [-o] feature to this argument.

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24. This assumption, in fact, derives from Dowty (1991), who argues that Proto-role classification is directly relevant only in the selection of arguments for the direct syntactic functions (i.e., subject and object).

(60)	<i>veszekedik</i> <sub>2</sub>	‘quarrel <sub>2</sub> ’	< [P-Agent], intrinsic default	[ ]> [-o] [-r]	[ ]> [-o] [+r]
-----					
				SUBJ	OBL

The argument structures in (59) and (60) serve as inputs for argument unification.

(61) and (62) are the corresponding inherent reflexive and monadic reciprocal constructions, which I analyze as being projected by predicates that are the outputs of argument unification.

- (61) *János meg-fésül-köd-ött.*  
 John PREV-comb-RSUF-PST  
 ‘John combed (his hair).’
- (62) *A katonák veszekedtek.*  
 the soldier-PL quarrel-PST-PL  
 ‘The soldiers quarrelled.’

Argument unification is a lexical operation of the following kind. First, it includes an external (Proto-Agent) argument (as in the Alsina and the Reinhart-Siloni approach). Second, it reduces the number of argument slots by one (contra Alsina, but in line with Reinhart and Siloni). Among other things, it allows us to capture the disjunctive mapping of the two roles (recall the discussion on the data in [53]) and [54]) in a more principled way, as is described below.

Argument unification creates an ordered pair of argument roles (a *role cluster* for short) and assigns it to a single argument slot.

- (63) *Argument Unification*  
 $P: \langle [P\text{-Agent}], [Arg_2], \dots, \rangle \Rightarrow P: \langle [[P\text{-Agent}] [Arg_2]], \dots, \rangle$   
 $Arg_2 \in \{ [P\text{-Patient}], [ ] \}$

The previous hypothesis (36) can now be restated in a more definitive format in the light of the confirmation that we gained through the analysis of the Hungarian data in Section 3.2.

- (64) *The mapping of role clusters*
- (i) Argument role clusters map onto syntactic functions disjunctively, i.e., it is always exactly one role in the cluster which is active syntactically and which is available for the purposes of the mapping.
  - (ii) By default, it is the P-Agent role which determines the mapping.

- (iii) It is only lexical operations which may override the default mapping, in which case the mapping is determined by the second role in the cluster.

Thus I differ from Reinhart and Siloni (2004, 2005) in allowing for unaccusative derivations of role clusters. But this, as I have argued, is a restricted option and is only licensed if further lexical operations affect the argument structure of the predicate that has an argument cluster. This explains why inherent reflexives and reciprocals always pattern with unergative predicates in testing constructions where no lexical operation is involved. It needs to be emphasized that (64) does not make it necessary for every lexical operation to change the default, but it opens up a possibility for operations that feed on, for example, the presence of a Proto-Patient argument.

An inherent reflexive may thus be realized in the syntax in two distinct ways, which are separated by a vertical line in (65). The one to the left of this line represents the default mapping, while the other is the marked mapping, which is available only if further lexical operations target the argument structure containing the cluster.

(65)	<i>fésülködik</i>	‘comb <sub>REFL</sub> ’	<[[P-Agent]		[P-Patient]]>
	intrinsic		[-o]		[-r]
	default		[-r]		
	Subject Cond.				SUBJ/OBJ
			SUBJ		SUBJ

As role clusters are treated disjunctively, the second argument in the cluster counts as the highest one in the case of the unaccusative derivation (i.e. the role which is not targeted is assumed to be suppressed for the purposes of the mapping).

An inherent monadic reciprocal predicate may also map onto the syntax in two distinct ways, but since the intrinsic classification of the two argument roles in the cluster is the same, the mappings are equivalent in a technical sense in either case:

(66)	<i>veszekedik<sub>1</sub></i>	‘quarrel <sub>1</sub> ’	<[[P-Agent]		[ ]>
	intrinsic		[-o]		[-o]
	default		[-r]		[-r]
			SUBJ		SUBJ

This also means that both dyadic and monadic reciprocals are technically treated as unergative predicates, and neither is allowed to have an unaccusative version. This captures the class-level difference between inherent reflexives and reciprocals, which we have seen manifested in Section 3.

On the other hand, we have also seen that reciprocals may show unaccusativity traits to various degrees in participial constructions. I have pointed out that there is significant variation among individual predicates, which ranges from unacceptability to almost complete acceptability. An emerging pattern that has been found is that the monadic version tends to be more acceptable than the dyadic one in unaccusative environments. This, however, can be accounted for by assuming that these constructions are constrained by lexical semantic information *beyond*, as well as including, that amount of information that is utilized by argument structure. Once a Partner argument is unified with an Agent on the subject slot of a reciprocal predicate, it adds a role-type to the characterization of the subject referent that is much less Agent-like than Agents proper. This semantic correlate of argument role unification is here regarded as the trigger for the observed melioration effects. As the relevant participle formation operations may not target oblique functions, the mild Patient-like properties of the Partner argument are expected to become active only when assigned onto the subject argument, as is shown in (66).

## 5. Conclusion

The paper started with two related problem sets, both of which have validity beyond Hungarian. First, it was pointed out that even if there is an intuitive understanding of what should be considered an inherently reflexive or an inherently reciprocal predicate, the two classes are not easy to define formally. Second, and related to this, it is not immediately obvious whether the two classes should be distinguished from each other on formal grounds, that is, on the basis of whether the two relations reflexivity and reciprocity are coded in this domain of language as grammatically distinct or not.

On the basis of Hungarian data, I have argued that it is possible to distinguish the two classes at the level of argument structure. I have pointed out that inherent reciprocals do not relate systematically to transitive alternates in Hungarian, but they may have a second argument which I have claimed to bear a secondary Agent-like role, referred to here as *Partner*. Monadic reciprocals and inherent reflexives are similar in being the outputs of an argument unification process, but they differ in the nature of the second argument that participates in this operation: it is a Patient for reflexives, but a Partner for reciprocals. This results

in reflexives showing not only unergative but also unaccusative properties under certain conditions, whereas reciprocals are always unergative technically. This analysis, being presented the way it has been, is expected to have cross-linguistic validity. It is a matter for further research to investigate whether inherently reflexive and reciprocal predicates in other languages behave the way Hungarian ones do.

The process of argument unification has been defined as a lexical operation which creates a role cluster that maps onto the syntax disjunctively. The default mapping of a role cluster is unergative. An unaccusative derivation is also licensed for a cluster which includes a Patient role, but this is only possible if the basic lexical form serves as input to a lexical operation that feeds on the presence of a (Proto-)Patient argument. Needless to say, the current proposal should be checked against further empirical domains to see if it has validity beyond what has been my primary concern here: the set of inherently reflexive and reciprocal predicates.

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# The Syntax of Reciprocal Verbs: An Overview\*

*Tal Siloni*

## 1. Introduction

This paper suggests a typology of reciprocal verbs and discusses their respective argument structure and derivation. In part, it relies on findings reported in Siloni (2001). However, many aspects have been refined here and subsequent work has been taken into consideration (Dimitriadis 2004b, this volume; Hron 2005; Rákosi 2003, this volume; Reinhart and Siloni 2005; Siloni 2002). The paper argues that reciprocal verbs can be derived in the lexicon and in the syntax. It thus offers strong evidence that the lexicon must be an active component (Siloni 2002), and not mere lists of lexical items (Borer 2004; Marantz 1997, 2000, among others).

The organization of the paper is as follows. Section 2 sets apart reciprocal verbs and transitive verbs taking a reciprocal object. Section 3 discusses the argument structure of reciprocal verbs that acquire their reciprocal meaning as a result of the operation deriving them. It shows that cross-linguistically, they project an external argument. Nonetheless, they split into two types: lexical and syntactic reciprocals. The distinctions between the two types are discussed in Sections 4, 5 and 6. Particular attention is given to the discontinuous reciprocal construction, which is argued to be possible only with lexical reciprocals (Section 6). Section 7 is devoted to reciprocal predicates that denote reciprocity – in fact, symmetry – inherently.

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## 2. Reciprocal verbs vs. reciprocal anaphors

Consider the examples in (1). In (1b) the verb denotes an eventuality that involves reciprocity between its participants.<sup>1</sup> An alternative way of expressing reciprocity is by way of a reciprocal anaphor (called in certain traditions a “quantificational reciprocal”) as in (1a). Henceforth, I use the term “reciprocal verbs” (or reciprocals) to refer to verbs such as *hitnašku* in (1b), which denote reciprocity without realizing a reciprocal anaphor.

### (1) Hebrew

- a. *Hem nišku ze et ze / exad et ha-šeni.*  
 they kissed this ACC this / one ACC the-second  
 ‘They kissed each other.’
- b. *Hem hitnašku.*  
 they kissed.RECP  
 ‘They kissed.’

Typically, reciprocal verbs are morphologically coded as such. There are several encoding devices. Reciprocity can be encoded by a verbal template as in Hebrew (often the fifth template, *hitpa’el*; cf. [1b]), or by a verbal suffix as in Russian (cf. [2a]) and Hungarian (cf. [2b]). The Romance family (e.g. Italian, see [2c]), Serbo-Croatian (cf. [2d]), and Czech (cf. [2e]) use a clitic to form reciprocals. English uses zero morphology with reciprocals (cf. the translations of the examples in [2]). Cross-linguistically, the same morphological marking is also found with other types of predicates: reflexives, unaccusatives, subject-Experiencer verbs, middles, impersonals, and passives. This morphology is typical of valence reducing operations, as discussed in detail by Reinhart and Siloni (2005).

### (2) Russian

- a. *Miša i Maša obnjali-s’.*  
 Misha and Masha hugged-RECP  
 ‘Mish and Masha hugged.’

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1. Reciprocity encompasses various relations (cf. Langendoen 1978; Kim and Peters 1998, and references cited there). For now, it suffices to understand reciprocity in its naive sense. The type of reciprocity denoted by reciprocal verbs will be better defined in the course of the paper.

Hungarian

- b. *János és Mari csókol-óz-t-ak.*  
 János and Mari kiss-RECP-PST-3PL  
 ‘János and Mari kissed.’

Italian

- c. *Giovanni e Maria si sono abbracciati.*  
 Giovanni and Maria *si*(CL) are hugged  
 ‘Giovanni and Maria hugged.’

Serbo-Croatian

- d. *Petar i Marija se ljube.*  
 Petar and Marija *se*(CL) kiss  
 ‘Petar and Marija kissed.’

Czech

- e. *Dan a Petr se políbili.*  
 Dan and Petr *se*(CL) kissed  
 ‘Dan and Petr kissed.’

The two modes of expression of reciprocity in (1) seem equivalent, but in more articulated contexts, interpretative differences are revealed between them. For instance, (3a), where reciprocity is expressed using a reciprocal object, is ambiguous in a way its counterpart with a reciprocal verb is not.

(3) Hebrew

- a. *Dan ve-Ron amru še-hem katvu exad la-šeni.*  
 Dan and-Ron said that-they wrote one to.the-other  
 i. ‘Dan and Ron said that they corresponded.’  
 ii. ‘Dan said that he wrote to Ron and Ron said that he wrote to Dan.’
- b. *Dan ve-Ron amru še-hem hitkatvu.*  
 Dan and-Ron said that-they wrote.RECP  
 i. ‘Dan and Ron said that they corresponded.’

It is well known that sentences of the type in (3a), which involve a reciprocal object in the embedded clause, are ambiguous depending on whether the reciprocal is associated with a narrow or broad distributive reading (cf. Higginbotham 1980; Heim, Lasnik and May 1991a, among others). Under the narrow reading (distribution over the subject of the embedded clause), (3a) means that Dan and

Ron said that they each wrote to the other; in other words, they said they corresponded (cf. reading i.). In contrast, the wide distributive reading (distribution over the subject of the matrix clause) results in the interpretation that each member of the pair Dan and Ron said that he wrote to the other (cf. reading ii.).<sup>2</sup> Crucially, reciprocal verbs allow only the local reading. In (3b), long distance distribution is impossible, and the sentence has only the reading in i.

The two readings are very conspicuous in the context of (4). (4a) is contradictory because it can only mean that Dan and Ron defeated each other in the final. (4b), in contrast, also has a non-contradictory interpretation, saying that Dan said that he defeated Ron and Ron said that he defeated Dan in the final, which is available because the reciprocal object can be associated with a broad distributive reading:

(4) Hebrew

a. # *Dan ve-Ron nicxu exad et ha-šeni ba-gmar.*  
 Dan and-Ron defeated each other in.the-final  
 ‘Dan and Ron defeated each other in the final.’

b. *Dan ve-Ron amru še-hem nicxu exad et ha-šeni*  
 Dan and-Ron said that-they defeated each other  
*ba-gmar.*  
 in.the-final  
 ‘Dan and Ron said that they defeated each other in the final.’

Let us now back up the claim that the Romance clitic *se* (or *si*) indeed forms reciprocal verbs. As the clitic is reminiscent of object pronominal clitics, a possible analysis is that verbs with *se* are transitive verbs taking a reciprocal object clitic. There are, however, good reasons to reject the object clitic analysis of the Romance clitic *se* (*si*). Heim, Lasnik and May (1991a) (acknowledging Luigi Rizzi for the observation) point out that when a contradictory reciprocal sentence formed with the clitic is embedded as in (4b), it remains a contradiction. Consider the sentences in (5). As expected, (5a) is a contradiction just like (4a) above. Importantly, however, even when (5a) is embedded as in (5b), the only available reading is a contradiction, which would be unexpected if a reciprocal object were involved. But as *se* forms a reciprocal verb, only the local, contradictory reading is available:

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2. For more discussion of the two readings, cf. Heim, Lasnik and May (1991a, 1991b), Williams (1991), Siloni (2008) and references cited there.

- (5) a. # *Pierre et Jean se sont vaincus à la finale.*  
 Pierre and Jean *se* are defeated in the final  
 ‘Pierre and Jean defeated each other in the final.’
- b. # *Pierre et Jean ont dit qu’-ils se sont vaincus à la finale.*  
 Pierre and Jean have said that-they *se* are defeated in  
 the final

In Czech, embedding of the contradictory sentence (6a) under a verb of saying does not lead to a non-contradictory reading either.<sup>3</sup>

- (6) Czech
- a. # *Dan a Petr se porazili ve včerejší šachové partii.*  
 Dan and Petr *se* defeated in yesterday(ADJ) Chess  
 game
- b. # *Dan a Petr říkali, že se porazili ve včerejší šachové partii.*  
 Dan and Petr said that *se* defeated in yesterday(ADJ)  
 Chess game

French provides additional evidence that *se* is not an object clitic, and the verb is not a transitive verb, but rather an intransitive reciprocal. Diagnostics of tran-

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3. The same behaviour can be observed in German when the reciprocal meaning is expressed via *sich*. The reciprocal reading in (i) is contradictory, unlike the one in (ii), where the reciprocal anaphor *einander* is used. Unlike (ii), (i) does not have the meaning ‘Hans said that he defeated Paul in the final and Paul said that he defeated Hans in the final’ (Volker Gast, personal communication). This suggests that (i) contains a reciprocal verb, and not a reciprocal anaphor.

- (i) *Hans und Paul sagten, dass sie sich im Finale besiegt hatten.*  
 Hans and Paul said that they *sich* in.the final defeated had
- (ii) *Hans und Paul sagten, dass sie einander im Finale besiegt hatten.*

The same argument is made by Gast and Haas (this volume) on different grounds. Reinhart and Siloni (2005) provide evidence that the reflexive *sich* in local contexts (not the long distance anaphor *sich*) likewise forms a reflexive verb, and does not have the syntactic status of an argument.

Heim, Lasnik and May (1991a) note that under certain conditions, it may be possible to construe the broad scope reading. I will not pursue this any further here, as independent evidence strongly suggests that the verbs in question are intransitive verbs.

sitivity confirm that the complex ‘*se* + verb’ does not behave on a par with transitive verbs. As observed by Kayne (1975), French causative constructions treat transitives and intransitives differently. Reciprocals (just like reflexive verbs) pattern with intransitives. When the verb embedded under the causative verb *faire* ‘make’ is a transitive verb, its subject must be introduced by the preposition *à* (‘to’) (cf. [7a]). When the lower verb is intransitive, its subject cannot be introduced by *à* (cf. [7b]).<sup>4</sup> As is clear from (7c), when the direct object of the embedded verb is a pronominal clitic, the verb patterns with transitive entries. But when the clitic *se* is used, the subject surfaces without the preposition (cf. [7d]), just like the subject of intransitive verbs. (Note that the different positioning of the pronominal clitic and *se* in the causatives of [7] suggests in itself that they deserve a different syntactic treatment.)

## (7) French

- a. *Pierre a fait embrasser Jean à Marie.*  
 Pierre has made kiss Jean to Marie  
 ‘Pierre made Marie kiss Jean.’
- b. *Pierre a fait courir Marie.*  
 Pierre has made run Marie  
 ‘Pierre made Marie run.’
- c. *Pierre l’-a fait embrasser à Marie.*  
 Pierre him/her-has made kiss to Marie  
 ‘Pierre made Marie kiss him/her.’
- d. *Pierre a fait s’-embrasser Jean et Marie.*<sup>5</sup>  
 Pierre has made *se*-kiss Jean and Marie  
 ‘Pierre made Jean and Marie kiss.’

Further, as is well known, in French and Italian transitive verbs standardly use the auxiliary *avoir* ‘have’ to form complex (perfect) tenses. Reciprocals (like

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4. The subject of intransitives is an accusative argument. This is clear when it is cliticized, as the accusative clitic is used:

(i) *Je le ferai courir.*  
 I him<sub>cl</sub> will.make run

5. Like other sentences involving a “*se*-verb” in Romance, Serbo-Croatian and Czech, (7d) can have a reflexive reading (less dominant here owing to world knowledge). As will become clear in Section 4, this is a property typical of languages forming their reciprocals in the syntax. In this paper, the focus is on the reciprocal reading, unless otherwise specified.

reflexives) employ *être* ‘be’. The use of *être* triggers obligatory agreement on the past participle (cf. [8a]) unlike the optional (high register) agreement triggered by direct object clitics (cf. [8b]). As noted by Sportiche (1998), if *se* were simply an object clitic, this would be unexpected.<sup>6</sup> Reinhart and Siloni (2005) argue that in certain languages the application of a valence reducing operation (e.g., the formation of reciprocal verbs) leaves a case residue, which triggers the use of the auxiliary ‘be’. This, in turn, triggers obligatory past participle agreement.

(8) French

- a. *Marie et Claire se sont embrassé-(es).*  
 Marie and Claire *se* are kissed-(PL.F)  
 ‘Marie and Claire kissed.’
- b. *Ces filles, ils les ont embrassé-(es).*  
 These girls, they them.F.PL have kissed-(F.PL)  
 ‘These girls, they kissed them.’

As mentioned above, the set of reciprocal verbs is not uniform; it includes different types of predicates. Some reciprocal verbs acquire their reciprocal meaning as a result of the operation deriving them. Others denote reciprocity (in fact, symmetry) inherently. The bulk of the paper is devoted to the former set, which I call “derived reciprocals” or simply “reciprocals”. The next section shows that their argument structure involves an external argument. As will become clear in Section 7, the argument structure of verbs of the “inherent set” differs substantially from that of derived reciprocals.

### 3. The subject of reciprocals

The subject of (derived) reciprocals is understood to be associated with two thematic roles. In (8a), for instance, the subject *Marie and Claire* have the Agent as well as the Theme role in the event of kissing. The question then arises whether the subject is generated VP-internally or whether it is an external argument. In this section I show that the subject of reciprocals fails common tests diagnosing an internal argument status, in the languages of my sample.

As noted by Shlonsky (1987), among others, Hebrew allows two types of inversion: triggered inversion, which is licensed by some XP immediately preceding the verb [XP V S], and simple inversion [V S]. The latter is possible only

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6. For more arguments that *se* verbs are intransitives, cf. Dimitriadis (2004b) and Siloni (2008).

with subjects that are internal arguments, e.g., subjects of passives (cf. [9a]) and unaccusatives (cf. [9b]). Reciprocals do not allow simple inversion (cf. [9c]) just like other predicates whose subject is an external argument (cf. [9d]).

## (9) Hebrew

- a. *Butlu štey harca'ot.*  
were.cancelled two lectures
- b. *Higi'u šney studentim.*  
arrived two students
- c. \**Hitnašku šney studentim.*  
kissed.RECP two students
- d. \**Avdu šney studentim.*  
worked two students

Modification by possessive datives can also be used to show that arguments are VP-internal in Hebrew. As noted by Borer and Grodzinsky (1986), possessive datives (here *le-mi* 'to-whom', roughly 'whose') can only modify internal arguments. Hence, they can function as the possessor of a subject of passive (cf. [10a]) or unaccusative predicates (cf. [10b]), but not of the subject of unergatives (cf. [10c]). The subject of reciprocals (cf. [10d]) patterns with the subject of unergatives.

## (10) Hebrew

- a. *Le-mi nuka ha-xeder?*  
to-whom was.cleaned the-room  
'Whose room was cleaned?'
- b. *Le-mi nixšelu šney studentim?*  
to-whom failed two students  
'Whose students failed?'
- c. \**Le-mi avdu šney studentim?*  
to-whom worked two students
- d. \**Le-mi hitxabku šney studentim?*  
to-whom hugged.RECP two students

As briefly mentioned, the *hitpa'el* template appears not only with reciprocals but also with other types of predicates, including unaccusatives, reflexives, and (a few) passives. Alongside the biblical form *hitpa'el*, literary Hebrew has a post-biblical form *nitpa'el* (in past tense). Interestingly, for speakers whose grammar includes the form, it is clear that its distribution is limited. While unaccusatives

and passives can use the *nitpa'el* conjugation, reciprocals, just like reflexives, cannot do so. The possibility to use *nitpa'el* seems to correlate with the type of argument that functions as a subject. Unaccusatives (cf. [11a-b]) and passives (cf. [11c-d]), whose subject is an internal argument, allow it, but not reciprocals (cf. [11e-f]) and reflexives (cf. [11g-h]), whose subject is the external argument (for reflexives, cf. Reinhart and Siloni 2004).

(11) Hebrew

- a. *Ha-mixnasayim nitkavcu.*  
the-pants shrank(*nitpa'el*)  
'The pants shrank.'
- b. *Ha-sukar nitmoses.*  
the-sugar dissolved(*nitpa'el*)  
'The sugar dissolved.'
- c. *Ha-uvdot nitgalu al yedey xoker.*  
the-facts were.discovered(*nitpa'el*) by researcher  
*švecari.*  
Swiss  
'The facts were discovered by a Swiss researcher.'
- d. *Ha-yecira nitxabra al yedey malxin.*  
the-work was.composed(*nitpa'el*) by composer  
*carfati.*  
French  
'The work was composed by a French composer.'
- e. \**Hem nitnašku.*  
they kissed(*nitpa'el*)
- f. \**Hem nitxabku.*  
they hugged(*nitpa'el*)
- g. \**Hu nitlabeš.*  
he dressed(*nitpa'el*)
- h. \**Hu nitgale'ax.*  
he shaved(*nitpa'el*)

In French, verbs whose subject is an internal argument can appear in expletive constructions (cf. [12a,c]) and typically allow *en*-cliticization out of their subject (cf. [12b,d]), as *en* can cliticize only out of an internal DP argument. Reciprocals like their Hebrew equivalents do not pattern with verbs whose subject is an

internal argument. They are marginal in expletive constructions (cf. [12e]) and disallow *en* cliticization (cf. [12f]).

## (12) French

- a. *Il est arrivé trois filles hier soir.*  
 there is arrived three girls yesterday evening  
 ‘There arrived three girls yesterday evening.’
- b. *Il en est arrivé trois hier soir.*  
 there of.them is arrived three yesterday evening  
 ‘There arrived three of them yesterday evening.’
- c. *Il s’est cassé beaucoup de verres dans ce lave-vaisselle.*  
 there se-is broken many of glasses in this  
 dishwasher  
 ‘Many glasses broke in this dishwasher.’
- d. *Il s’en est cassé beaucoup dans ce lave-vaisselle.*  
 there se-of.them is broken many in this  
 dishwasher  
 ‘Many of them broke in this dishwasher.’
- e. ??*Il s’est embrassé beaucoup de filles à cette fête.*  
 there se-is kissed many of girls in this party
- f. \**Il s’en est embrassé beaucoup à cette fête.*  
 there se-of.them is kissed many in this party

The subject of reduced relatives whose predicate is a perfect participle must be an internal argument. Hence the predicate can be a passive (as in [13a]) or an unaccusative (cf. [13b]) but not an unergative one (cf. [13c]) (see Siloni 1995, 1997). Reciprocals (as in [13d]) pattern with unergatives.<sup>7</sup>

## (13) Italian

- a. *L’uomo arrestato dalla polizia è una spia.*  
 the-man arrested by.the police is a spy  
 ‘The man arrested by the police is a spy.’

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7. Judgments are thanks to Guglielmo Cinque and Alessandra Lukinovich. In French the test is not applicable, as participial relatives of this kind disallow clitics altogether (unlike relatives with the *-ant* participle; see Siloni 1995, 1997 for discussion).

- b. *Il bicchiere rotto-si ieri apparteneva a mio*  
 the glass broken-si yesterday belonged to my  
*nonno.*  
 grandfather  
 ‘The glass that broke yesterday belonged to my grandfather.’
- c. *\*L’-uomo telefonato a suo nonno è una spia.*  
 the-man telephoned to his grandfather is a spy
- d. *\*I ragazzi baciati-si ieri sono miei alunni.*  
 the children kissed-si yesterday are my pupils

In Russian, the genitive of negation can be used as a diagnostic for an internal argument status. Internal arguments can bear genitive case when the predicate is negated (cf. Pesetsky 1982). Unlike the subject of unaccusatives (as in [14a]), the subject of reciprocals cannot bear genitive case (cf. [14c]), just like the subject of unergatives (cf. [14b]).<sup>8</sup>

(14) Russian

- a. *Ne objāvilos’ studentov.*  
 NEG showed.up students.GEN  
 ‘Students did not show up.’
- b. *\*Ne tancevalo studentov.*  
 NEG danced students.GEN
- c. *\*Ne obnimalos’ detej.*  
 NEG embraced.RECP children.GEN

In sum, cross-linguistic evidence shows that the subject of reciprocals is an external argument.<sup>9</sup> I suggest that reciprocals are derived from the corresponding transitive entry by an operation of “reciprocalization” that prevents mapping of a  $\theta$ -role of the complement domain to its canonical syntactic position. The operation, however, does not eliminate the role altogether, but associates it with the external role. As will be shown in what follows, although reciprocalization is a universal operation that associates two roles with one – external – argument, it manifests systematic cross-linguistic variation.

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8. Judgments vary as genitive of negation is not equally productive among speakers.

9. See Rákosi (this volume) for the claim that Hungarian reciprocal (and reflexive) verbs that serve as input to a lexical operation that feeds on the presence of an internal argument license an unaccusative derivation in addition to the unergative.

#### 4. Lexical vs. syntactic reciprocalization

The reciprocalization operation, then, associates two  $\theta$ -roles with the external argument. The subject in (15a) is associated with both the Agent and the Theme role (which is not mapped to the object position) of the corresponding transitive alternate (cf. [15b]). Just like the subject of a reflexive (as in [15c]) is associated with both roles of the transitive entry (cf. [15d]), so is the subject of a reciprocal. But while the reflexive describes a reflexive event (of self-washing in [15c]), the reciprocal describes a reciprocal event (an event of mutual kissing in [15a]). The reciprocalization operation is similar to that forming reflexives (for reflexivization, cf. Reinhart and Siloni 2005), but its semantics is different; discussing the operation and its semantics is beyond the scope of this overview (cf. Siloni 2008 for discussion). For our purposes, it is sufficient to understand that reciprocalization suppresses the syntactic realization of a role of the complement domain, and links this role with the external role, so that both end up associated with the same argument.<sup>10</sup>

- (15) a. *John and Mary kissed.*  
 b. *John kissed Mary.*  
 c. *John washed.*  
 d. *John washed the baby.*

Reciprocals in the languages that I have examined split into two types: one type is found in Hebrew, Russian, Hungarian, and English, and the other, in the Romance family, Serbo-Croatian, Czech, (and German, which I will not discuss here). The two sets of languages systematically differ in several respects. As I will show below, the distinctions can all be accounted for under the assumption that reciprocals can be formed in different components of the language faculty. Specifically, reciprocalization can apply in the lexicon or in the syntax, like other valence changing operations (“arity operations”), which are extensively discussed by Reinhart and Siloni (2005). This is formulated by the Lex(icon)-Syn(tax) parameter (16). The setting of the parameter for the relevant languages is listed in (17):

- (16) The Lex-Syn Parameter  
 UG allows arity operations to apply in the lexicon or in the syntax.

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10. I assume that this would not be in contradiction with the spirit of the  $\theta$ -criterion. I believe that the requirement that  $\theta$ -information be assigned is an indispensable part of the criterion, unlike the biuniqueness requirement it imposes on arguments and roles (for justification, cf. Bošković 1994; Chomsky 1995; Reinhart and Siloni 2005).

- (17) Lexicon setting: Hebrew, Russian, Hungarian, English.  
 Syntax setting: Romance, Serbo-Croatian, Czech.

As far as reciprocals are concerned, the parameter classifies languages to languages where reciprocalization applies in the syntax, forming syntactic reciprocals, and languages that cannot form reciprocals in the syntax but only in the lexicon, thus having only lexical reciprocals. The former languages also form reflexives and middles in the syntax, while the latter form them in the lexicon (Reinhart and Siloni 2005; Marelj 2004). For ease of presentation, I refer to languages setting the lex-syn parameter to “lexicon” as “lexicon languages”, and to the ones setting it to “syntax” as “syntax languages”.<sup>11</sup> Both types of languages can, in addition, express reciprocity using reciprocal anaphors. This option is orthogonal to the discussion and does not concern the lex-syn parameter.

I will now turn to a discussion of the cluster of properties that follow from the setting of the lex-syn parameter. As the distinctions hold across the languages in my sample, I will freely alternate between the languages when illustrating them.

**(i) Productivity:** In lexicon languages, reciprocals are restricted to a closed, relatively small set of verbs. Roughly speaking, the set includes verbs denoting situations of social interaction, as illustrated in (18). In syntax languages, the formation of reciprocals is a productive operation. Thus, for example, while in French reciprocalization can apply to the verb *dessiner* ‘draw’ (cf. [19]), in Hebrew, Russian, and Hungarian this is impossible.

- (18) Hebrew
- a. *Dan ve-Dina hitxabku.*  
 Dan and-Dina hugged.RECP  
 ‘Dan and Dina hugged.’
- b. *Dan ve-Dina hitkatvu.*  
 Dan and-Dina wrote.RECP  
 ‘Dan and Dina corresponded.’

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11. As will be discussed in detail in Section 6.2, there are occurrences of lexical reciprocals in syntax languages (but not vice versa). This is why, for now, languages with a syntactic setting are not defined as languages where reciprocalization can apply only in the syntax; see Section 6.2 for more discussion. There is no evidence in favour of the existence of instances of lexical reflexives and middles in syntax languages.

- c. *Dan ve-Dina nilxemu.*  
 Dan and-Dina fought.RECP  
 ‘Dan and Dina fought.’

## (19) French

- Jean et Marie se sont dessinés.*  
 Jean and Marie *se* are drawn  
 ‘Jean and Marie drew each other.’

In lexicon languages, where reciprocals constitute a closed set, the set of reflexive verbs is also limited; it includes grooming verbs and a few others. In syntax languages, where reciprocal formation is productive, the formation of reflexives is also productive, because it is syntactic, as mentioned above. Hence, it is not surprising that in syntax languages verbal forms can be ambiguous between a reflexive and reciprocal reading (if they share the same morphology, as is the case in the sample of languages discussed here). In addition to a reciprocal reading, (19) also has a reflexive reading (‘Jean and Marie draw themselves’). Likewise, (20) has a reflexive (see [20i]) and a reciprocal reading (cf. [20ii]). Of course, the reciprocal reading of (20) requires an appropriate context, otherwise speakers strongly prefer the reflexive interpretation, on the basis of world knowledge (i.e., people tend to wash themselves and not each other). The parallel sentence in Hebrew is unambiguous (cf. [21]). Its only reading is reflexive, as in lexicon languages *wash* belongs to the set of reflexives and not to the set of reciprocals.<sup>12</sup>

## (20) French

- Pierre et Jean se sont lavés.*  
 Pierre and Jean *se* are washed  
 i. ‘Pierre and Jean washed.’  
 ii. ‘Pierre and Jean washed each other.’

## (21) Hebrew

- Dan ve-Ron hitraxcu.*  
 Dan and-Ron washed(hitpa’el)  
 ‘Dan and Ron washed (\*each other).’

Productivity is not in principle impossible for lexical operations. It is important to note that the sets of (lexical) reciprocals and reflexives are rather coherent cross-linguistically. Why are they restricted the way they are? The exact defi-

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12. At least for some speakers, the Hebrew verb *hitlatef* ‘caress.RECP’ is ambiguous between a reflexive and a reciprocal interpretation; that is, it belongs to both sets.

inition of the sets is not yet understood. It may turn out that specific properties of the lexicon determine the definition of these sets. But even if the sets are to some extent language specific, it seems theoretically convenient that these idiosyncrasies fall in the domain of the lexicon. It has often been argued independently of the question of reciprocalization or reflexivization that irregularities are confined to the lexicon, which contains lists that have to be acquired anyway, whereas the syntactic component is a productive engine "uncontaminated" with idiosyncrasies. The difference in productivity between the lexical and syntactic setting of the lex-syn parameter corresponds to this view of the two components. Crucially, as will be shown below, additional evidence points in the same direction.

**(ii) ECM reciprocals:** Languages also differ regarding the possibility to reciprocalize exceptional case marking (ECM) predicates. Consider the ECM predicate in (22a) and its reciprocal equivalent in (22b). The matrix predicate *voit* 'see' does not take a DP as its internal argument, but rather a clause. *Marie* in (22a), to which *voit* assigns accusative case, is not an argument of *voit*, but the subject of the clause, and receives its  $\theta$ -role from the embedded verb *danser*. Nonetheless, *voit* can undergo reciprocalization involving, in addition to its own external role, the external role of the verb *danser*, as is clear from (22b).

(22) French

- a. *Pierre voit Marie danser.*  
Pierre sees Marie dance
- b. *Pierre et Jean se voient danser.*  
Pierre and Jean *se* see dance  
'Pierre and Jean see each other dance.'

Languages that set the lex-syn parameter to "lexicon" do not allow ECM reciprocals (cf. [23a]). They must use a reciprocal anaphor to express the relevant meaning (as in [23b]). It is worth noting that the verb 'see' in Hebrew can give rise to a reciprocal predicate as in (23c), thereby showing that the form is possible, although it has undergone semantic drift (cf. the English translation) and lost its original meaning.

(23) Hebrew

- a. \**Dan ve-Ron hitra'u racim.*  
Dan and-Ron see.RECP run
- b. *Dan ve-Ron ra'u [exad et ha-šeni] racim.*  
Dan and-Ron saw each other run

- c. *Dan ve-Ron hitra'u.*  
 Dan and-Ron see.RECP  
 'Dan and Ron met.'

This linguistic variation is expected in the light of the lex-syn parameter. The lexicon contains lists of items that are combined to phrases by the syntax. In the lexicon there is no relation whatsoever between distinct predicates; they are distinct items on a list. Only the syntax puts them together, merging them into structure, thereby establishing structural relations between them. It is thus straightforward that an operation in the lexicon is limited to act on a single predicate and its  $\theta$ -grid, and cannot involve two predicates, as in the lexicon they are distinct entries which nothing ties together.

When the operation is syntactic, it applies after the formation of syntactic structure, which establishes structural relations between distinct lexical items. It is thus not surprising that a syntactic operation can affect  $\theta$ -roles of two distinct predicates that the syntactic component has put in a local configuration.<sup>13</sup>

Notice now that since the set of lexical reciprocals is limited, it may be argued that there are no lexical ECM reciprocals because these verbs do not belong to the lexical set. The claim made here, however, is stronger: lexical ECM reciprocals are in principle impossible, independently of the definition of the set. While there could be minor differences between lexicon languages regarding the members of the lexical set, no lexicon language can have an ECM reciprocal, because such a predicate cannot be formed, as explained above.<sup>14</sup>

**(iii) Frozen input:** There are instances of lexical reciprocals whose transitive alternate does not exist in the vocabulary. For example, the verbs *hitgošeš* 'wrestled' in (24a) and *borot'sja* 'fight' in (24b) do not have a transitive counterpart. There are no instances of syntactic reciprocals lacking a transitive alternate (but cf. Note 11).

(24) Hebrew

- a. *Dan ve-Dina hitgošešu.*  
 Dan and-Dina wrestled  
 'Dan and Dina wrestled.'

13. For a definition of the concept "local configuration", cf. Siloni (2008).

14. György Rákosi (p.c.) points out that the present account will receive stronger support if one finds a minimal pair of the type in (23a) and (23c), where the reciprocal has not undergone semantic drift, thus proving that a verb that belongs to the set of lexical reciprocals cannot license an ECM construction. I am not aware of such a pair in lexicon languages. However, as will become clear in Section 6.2, the Czech examples (38) and (39b) constitute such a minimal pair.

Russian

- b. *Masha i Dima borolis*.  
 Masha and Dima fought  
 ‘Masha and Dima fought.’

Why should that be so? It has often been suggested that the lexicon includes entries that are frozen in the sense that they exist in the lexicon but cannot be inserted into syntactic derivations, and hence are not part of the actual vocabulary of the language (cf. Horvath and Siloni forthcoming for more discussion). If frozen entries are available in the lexicon, they can feed lexical operations, in particular, the formation of reciprocals. However, they cannot feed syntactic operations because they are not accessible to the syntax. Hence, syntactic reciprocals always have a transitive alternate in the vocabulary of the language.

**(iv) Semantic shift:** Lexical reciprocals can undergo semantic change – often referred to as “semantic drift” – thereby acquiring a new meaning (alongside the original meaning or replacing it). Semantically drifted reciprocals are found in Hebrew, Hungarian and Russian. For example, the verb *vstrechat’sja* ‘meet’ in Russian also has the meaning ‘to go out on a date’, which is not shared by its transitive counterpart. Horvath and Siloni (forthcoming) argue that only items that are lexical entries can acquire an innovative, drifted meaning, as otherwise this meaning cannot be listed. It automatically follows that lexical reciprocals can drift, while syntactic reciprocals can only keep the meaning of their transitive alternate, as they are not listed in the lexicon.

**(v) Idioms:** Reciprocals formed in the lexicon can appear in phrasal idioms that are not available for their transitive counterparts. The transitive alternate of (25a), for example, has only a literal meaning (cf. [25b]). Preliminary searches suggest that syntactic reciprocals cannot form idioms which are not shared by the corresponding transitive verbs.

(25) Hebrew

- a. *Nipageš ba-sivuv*.  
 will.meet.RECP.IPL in.the-turn  
 ‘Just you wait and see.’
- b. *Nifgoš ota ba-sivuv*.  
 will.meet.IPL you in.the-turn  
 ‘We will meet you at the turn.’

Syntactic reciprocals are completely unavailable in the lexicon. They are inserted as two-place predicates and are reciprocalized in the syntax. Horvath and Siloni (forthcoming) argue that phrasal idioms, such as (25a), are listed in the lexicon as subentries of their matrix predicate, that is, their lexical head (the reciprocal in [25a]). Diachronically, idioms start out literal, and acquire a special meaning in some specialized contexts (by *ad hoc* inferences). After consistent use of the expression with that contextually adapted interpretation, the innovative interpretation enters the lexicon, that is, it gets lexicalized. A special meaning of a phrasal expression cannot be readily listed in the lexicon if its matrix predicate is not an entry in the lexicon, as is the case with syntactic reciprocals. An idiom containing a syntactic reciprocal can be stored with the transitive alternate, which does exist in the lexicon; hence, such idioms always share the idiomatic meaning with their transitive alternates.

**(vi) Accusative case:** In both lexicon and syntax languages the operation of reciprocalization suppresses the syntactic realization of an accusative (cf. [26]) or a dative argument (cf. [27]). However, in case a dative argument is suppressed, syntactic reciprocals can realize an accusative argument (cf. [27a–b]), while lexical reciprocals cannot (cf. [27c–d]).

(26) French

- a. *Pierre et Marie se sont embrassés.*  
 Pierre and Marie *se* are kissed  
 ‘Pierre and Marie kissed.’

Spanish

- b. *Juan y María se han besado.*  
 Juan and María *se* have kissed  
 ‘Juan and María kissed.’

Hebrew

- c. *Dan ve-Dina hitnašku.*  
 Dan and-Dina kissed.RECP  
 ‘Dan and Dina kissed.’

Hungarian

- d. *János és Mari csókol-óz-t-ak.*  
 János and Mari kissed-RECP-PST-3PL  
 ‘János and Mari kissed.’

(27) French

- a. *Pierre et Marie se sont chuchoté des mots*  
 Pierre and Marie *se* are whispered INDEF.PL words  
*d'-amour*.  
 of-love  
 'Pierre and Marie whispered words of love to each other.'

Spanish

- b. *Juan y María se dicen palabras de amor*.  
 Juan and María *se* say words of love  
 'Juan and María said words of love to each other.'

Hebrew

- c. *Dan ve-Dina hitlaxšu* (\**milot ahava*).  
 Dan and-dina whispered.RECP (words of love)

Hungarian

- d. *János és Mari (\*hízelgő szavak-at)*  
 János and Mari (flattering words-ACC)  
*sugdol-ódz-t-ak*.  
 whisper-RECP-PST-3PL

The direct object cannot be realized in (27c-d), although reciprocalization has targeted the dative argument. This suggests that valence reducing operations applying in the lexicon reduce accusative case at any rate, even when the case of the suppressed argument is dative. When no operation applies in the lexicon, there is no case reduction in the lexicon, and the verb is inserted in the syntax with its case abilities. Some mechanism takes care of the case feature associated with the syntactically suppressed argument. But if the verb has an additional case feature, it remains available for assignment. I assume with others that the clitic *se/si* (or a parallel morphological device) reduces the redundant case, and is indiscriminant as to whether that case is accusative or dative. Indeed, syntactic reciprocalization is only possible when such a device is available.<sup>15</sup>

There are additional differences between reciprocals across languages, which, at first glance, do not seem to neatly follow from the lex-syn parameter.

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15. Syntactic reciprocals can also realize a dative argument when the accusative one is suppressed. This cannot be tested with regard to lexical reciprocals as it seems that there is no instance where reciprocalization suppresses the accusative argument of an input that takes a dative in addition.

In Sections 5 and 6, I will show that on closer inspection, these differences do match the partition into lexical and syntactic reciprocals.

## 5. Event nominals

We find reciprocal event nominals with reciprocal morphology in lexicon languages. In Hebrew (cf. [28a]) and Hungarian (cf. [28b]), reciprocal nominals are marked for reciprocity by the same morphology which is also used by their verbal counterparts. We do not find anything of the sort in Romance languages (cf. [29]) or Serbo-Croatian.<sup>16</sup>

(28) Hebrew

- a. *hitnaškut bney ha-esre*  
 kissing.RECP the.teenagers  
 ‘the teenagers’ mutual kissing’

Hungarian

- b. *a gyerekek csókol-óz-ás-a*  
 the children kiss-RECP-NMLZ-AGR  
 ‘the children’s mutual kissing’

It may be suggested that the explanation for this fact is just morphological, namely that Romance (and Serbo-Croatian) *se* is incompatible with nominal morphology. While this is indeed correct, French (Romance) nonetheless allows unaccusative nominals without *se* (cf. [29a]), although their verbal counterpart appears with *se* (cf. [29b]). So the question is why there are no reciprocal nominals of the sort.

(29) French

- a. *le rétrécissement du pantalon au lavage*  
 the shrinking of.the pants in.the washing  
 ‘the shrinking of the pants in the washing’
- b. *Le pantalon s’est rétréci au lavage.*  
 The pants se-is shrunk in.the washing  
 ‘The pants shrank in the washing.’

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16. The discussion is limited to event nominals, as the interpretation of result nominals is vaguer. The fact that a noun such as *kiss* could be used in the context of a mutual kissing does not make it a reciprocal nominal.

Similarly, in Russian the reciprocal suffix (-*sja*) is incompatible with nominals. Reciprocal event nominals appear without it. Some Russian event nominals are ambiguous between a transitive and a reciprocal interpretation (cf. [30a]), others are disambiguated by the prefix *pere-* (cf. [30b]), which appears with many reciprocal verbs, but is neither a necessary nor sufficient marker for reciprocity, although it can strengthen the reciprocal interpretation of verbs.

(30) Russian

- a. *obnimanie detej*  
hugging children.GEN  
'the children's (mutual) hugging'
- b. *perešjoptyvanie detej*  
whispering.RECP children.GEN  
'the children's mutual whispering'

Moreover, Hron (2005) observes that Czech, unlike Romance (and Serbo-Croatian) allows reciprocal event nominals (cf. [31]), although its reciprocals pattern with syntactic reciprocals. Why does Czech allow reciprocal nominals unlike the other syntax languages in my sample?

(31) Czech

- Nepřetržité hádání se jejich dětmi jim zkazilo  
constant quarreling se their children.GEN them ruined  
celou dovolenou.  
whole vacation  
'Constant quarreling of their children ruined their whole vacation.'*

Hron (2005) points out that *a priori* two derivational paths are possible for reciprocal nominals: they can be derived either from their verbal counterparts by an operation of nominalization, or from their corresponding transitive nominals by an operation of reciprocalization. I assume that nominalization is invariably a lexical operation, as argued by Siloni (1997). Reciprocalization, in contrast, is subject to the lex-syn parameter.

In lexicon languages, then, we expect to find reciprocal nominals, whether they are derived by nominalization of the corresponding reciprocal verbs, which are available in the lexicon, or by reciprocalization of the corresponding event nominal. Evidence in favour of the former derivational path comes from agglutinative languages, such as Hungarian, where the reciprocalization suffix is closer to the root than the nominalizing one, as is clear from the gloss of exam-

ple (28b). It may still be that this is not the only derivational path used to form reciprocals in the lexicon.

Let us now examine syntax languages. First, if nominalization is indeed a lexical operation, then it cannot form reciprocal nominals in syntax languages. The reason is that these languages derive the corresponding verbs in the syntax, and therefore in their lexicon there is no reciprocal input to nominalize. As will be briefly discussed in Section 7, the operation deriving unaccusative verbs applies across languages in the lexicon, that is, even in languages where reciprocalization and reflexivization are syntactic. Hence, unaccusative nominalizations are possible (cf. [29a]).

Is reciprocalization of the corresponding transitive event nominal an attested option? Showing that Czech reciprocal nominals cannot be argued to be formed by syntactic nominalization of the corresponding reciprocal verb (if this were the case, their syntactic structure would include a verbal projection, contrary to facts), Hron (2005) suggests that they are derived by reciprocalization of the corresponding transitive nominal. He further shows that, as is expected from the setting of the lex-syn parameter, reciprocalization of nominals in Czech is a syntactic operation, just like reciprocalization of verbs: it is productive and possible with ECM nominals.

The question then arises why reciprocalization of nominals cannot take place in Romance the way it does in Czech. Recall first that the clitic in Romance is a verbal clitic and can never be attached to nouns, unlike its Czech equivalent. Hence, reciprocal nominals with reciprocal morphology (of the Czech type) are blocked. Why is it impossible to derive reciprocal nominals with no reciprocal morphology from the corresponding transitive nouns? The reason for that, I believe, lies in the role of the clitic as a case reducer.

In the previous section, I concluded that lexical operations reduce the case abilities of the predicate, while syntactic operations require a particular case reducer. Thus, for a valence reducing operation to apply in the syntax, the case feature associated with the suppressed argument must be reduced, whether the predicate is a verb or an event noun. Syntactic operations suppressing the syntactic realization of an argument are expected to be possible (on verbs and nouns) only if a device is available to take care of the redundant case. Romance languages as well as Czech are syntax languages. However, syntactic reciprocalization of nouns is expected to be possible in Czech as it can use the clitic to reduce case, but not in Romance where the clitic is incompatible with nouns.<sup>17</sup>

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17. There are nominalizations such as French *entraide* ('mutual aid'), which involve a derivational affix (*entre-* 'between, mutual'). The existence of such nominals is not in contradiction with the claims advanced here, because these nominals include a

## 6. The discontinuous construction

### 6.1. Setting the stage

Alongside the reciprocal constructions discussed so far (e.g. [32a]), lexicon languages also manifest the so-called “discontinuous construction” (or briefly, “discontinuity”), as in (32b):<sup>18</sup>

- (32) Hebrew
- a. *Ha-yeladim ve-ha-yeladot hitnašku.*  
The-boys and-the-girls kissed.RECP
  - b. *Ha-yeladim hitnašku im ha-yeladot.*  
the-boys kissed.RECP with the-girls

As pointed out by Frajzyngier (1999) and Dimitriadis (this volume), in the discontinuous construction (32b), reciprocity holds between the subject set and the oblique set introduced by the preposition *with*, and not between the members of the subject set as in (32a). Thus, in (32b), there were mutual kissing events between boys and girls; but no kissing events within the set of boys or girls. Reciprocity in (32a) is not limited this way: mutual kissing events are possible between all members of the subject set. As the discontinuous construction denotes reciprocity between the subject set and the oblique set, the subject set can be a singleton set, unlike in regular reciprocal constructions, which require the subject set to be equal to or bigger than two for reciprocity to be possible.

The discontinuous construction entails that both the subject and the oblique constituent play the same role in the event. (33a) and (33b), where the syntactic positions of Dan and Dina are reversed, are equivalent. (33c) is a contradiction as its second conjunct negates the equal participation of both constituents.<sup>19</sup>

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reciprocal affix that can attach to nouns and verbs, and the corresponding verbs are lexical entries.

18. In English, which I will not discuss here in detail, not all reciprocals allow the discontinuous construction although the language is a lexicon language, with a limited set of reciprocals, no ECM reciprocals, etc.

19. Some reciprocals have non-reciprocal homophonous alternates taking an oblique constituent sometimes introduced by a preposition other than *with*, e.g.: *ha-mexonit hitnağša im ha-masa'it/\*ha-gader* ('the car collided with the truck / \*fence') versus *ha-mexonit hitnağša ba-gader* ('the car collided with the fence').

## (33) Hebrew

- a. *Dan hitnašek im Dina.*  
 Dan kissed.RECP with Dina  
 ‘Dan and Dina kissed.’
- b. *Dina hitnaška im Dan.*  
 Dina kissed.RECP with Dan  
 ‘Dan and Dina kissed.’
- c. # *Dan hitnašek im Dina, aval Dina lo hitnaška*  
 Dan kissed.RECP with Dina, but Dina didn’t kiss.RECP  
*im Dan.*  
 with Dan

The discontinuous construction seems to be impossible with syntactic reciprocals, as illustrated below.

## (34) French

- a. \**Jean s’est embrassé avec Marie.*  
 Jean se-is kissed with Marie

Italian

- b. \**Giovanni si è abbracciato con Maria.*  
 Giovanni si is hugged with Maria

Spanish

- c. \**Juan se ha besado con María.*  
 Juan se has kissed with Maria

Romanian

- d. \**Ana s-a curățat cu Ion.*  
 Ana se-has cleaned with Ion

Czech

- e. \**Dan se obviňoval s Petrem.*  
 Dan se accused with Petr

However, closer inspection reveals that certain verbs in syntax languages do allow the discontinuous construction. In the next subsection, I will argue that instances of lexical reciprocals are possible in syntax languages, and only these can appear in the discontinuous construction, and show properties typical of reciprocals in lexicon languages such as semantic drift. Syntactic reciprocals disallow the construction.

## 6.2. Lexical reciprocals in syntax languages

In certain syntax languages (e.g., French and Italian) we find isolated reciprocals allowing the discontinuous construction, while in others, e.g., Serbo-Croatian and Czech, a wider set of reciprocals allows discontinuity. Below I will show that there are good reasons to believe that these are instances of lexical reciprocals in syntax languages.

The verb *se battre* allows discontinuity. The basic entry, *battre*, means ‘beat’ (and ‘defeat’). *Se battre* naturally means ‘fight’ and can also mean ‘beat’ (the two meanings are distinct, as shown by the scenario in [35i]). (Reasonably, *se battre* has lost the meaning ‘defeat’ because reciprocal verbs are logically incompatible with this meaning.) It follows that semantic drift has applied to *se battre*, associating it with the meaning ‘fight’. As mentioned in Section 4, only items that are lexical entries can acquire an innovative, shifted meaning, as otherwise this meaning cannot be listed. If that is so, it follows that the reciprocal *se battre* ‘fight’ must be listed in the lexicon, because it is associated with a special meaning.

## (35) French

*Jean et Pierre se sont battus.*

Jean and Pierre *se* are beaten

## i. ‘Jean and Pierre beat each other.’

Scenario: *Jean et Marie étaient censés battre les noyers pour faire tomber les noix, mais par mégarde ils se sont battus.* (‘Jean and Mary were supposed to beat the walnuts to make the nuts fall, but by mistake they beat each other.’)

## ii. ‘Jean and Pierre fought.’

Moreover, it turns out that when *se battre* occurs in the discontinuous construction, it can only mean ‘fight’ (cf. [36]). (It has an additional drifted nonreciprocal meaning ‘struggle with something’, when it appears with a *with*-phrase; this reading is irrelevant here as it is not reciprocal.) As ‘fight’ is a drifted meaning, it means that only the lexical reciprocal *se battre* licenses the discontinuous construction. Note that this means that the lexical reciprocal *se battre* has lost the original meaning of *battre*, since otherwise it would also be able to mean ‘beat’ in the discontinuous construction. (This is not always the case: sometimes items acquire a drifted meaning in addition to the original one.) Note, in addition, that in (35) *se battre* can also mean ‘beat’ (reading i.) because here it is ambiguous between a syntactic reciprocal (reading i.) and a lexical one (reading ii.). The fact that the lexical reciprocal *se battre* has lost the original meaning allows

us to determine that only the lexical (not the syntactic) alternate can feed the discontinuous construction, thus supporting my claim that the discontinuous construction cannot be fed by outputs of a syntactic operation.

## (36) French

*Jean s-est battu avec Pierre.*

Jean *se-is* beat with Pierre

- i. 'Jean and Pierre fought.'
- ii. \*'Jean and Pierre beat each other.'

Next, one does not find ECM predicates in the discontinuous construction. Thus, while (37a) is grammatical in Romanian, (37b), which involves an ECM reciprocal, is completely impossible.

## (37) Romanian

a. *Ana s-a sărutat cu Ion.*

Ana *se-has* kissed with Ion

'Ana and Ion kissed.'

b. \**Ana s-au auzit cu Ion cantand Marsilieza.*

Ana *se-has* heard with Ion singing Marseillaise

This is expected if discontinuous reciprocals are enabled by lexical – not syntactic – reciprocals. ECM reciprocals involve two distinct predicates and therefore can only be formed in the syntax (cf. Section 4). As they are syntactic outputs, they cannot feed the discontinuous construction.

In Czech we find a minimal pair of the same kind. Czech allows a set of reciprocals to appear in the discontinuous construction, among them the verb *vidět se*. The verb *vidět* means 'see'. The reciprocal *vidět se* means 'see each other' or 'meet'. When *vidět se* appears in the discontinuous construction, it predominantly means 'meet' (the drifted meaning), and can also mean 'see each other' at least for some speakers.

## (38) Czech

*Dan se viděl s Petrem.*

Dan *se* saw with Petr

'Dan and Petr saw/met each other.'

Crucially, when *vidět se* functions as an ECM predicate, it has its original meaning, and reciprocal discontinuity is ruled out (39b). Again, this is expected if only lexical reciprocals can give rise to the discontinuous construction.

## (39) Czech

- a. *Dan a Petr se viděli tančit.*  
 Dan and Petr *se* saw dance
- b. \**Dan se viděl s Petrem tančit.*  
 Dan *se* saw with Peter dance

Intended meaning: ‘Dan and Petr saw each other dance.’

In sum, we must conclude that there are instances of lexical reciprocals in syntax languages. These instances seem to belong to the core set typical of lexicon languages. But there is variation: the number of lexical reciprocals varies from one syntax language to another, and the exact choice of verbs seems to be somewhat idiosyncratic. In lexicon languages, in contrast, we never find instances of syntactic reciprocals, e.g., ECM reciprocals. This is expected, because when the operation is syntactic it is necessarily productive.

Dimitriadis (2004a) entertains the idea that the lex-syn parameter (16) should, in fact, determine whether an operation can apply in the syntax or not, whereas lexical application is always possible. I do not think this direction is promising. First, in certain syntax languages we find only isolated instances of lexical reciprocals and not the core set of lexical reciprocals. Second, there is no evidence that other valence reducing operations such as reflexivization are applicable in the lexicon of syntax languages.

It is important to emphasize that the classification to a lexical and syntactic setting dictated by the lex-syn parameter is well-founded and insightful, despite the existence of (more or less) instances of lexical reciprocals in syntax languages. As these instances do not substitute their syntactic equivalents, they do not undermine the generalizations discussed in Section 4. Rather, in addition to a wide set of syntactic reciprocals, which pattern as expected by the lex-syn parameter, syntax languages can also have additional instances that pattern with lexical reciprocals.

As already mentioned above, a set of valence changing operations is subject to the lex-syn parameter, and there is evidence that the value of the parameter is identical across the various operations, at least all those that use the same morphological form, as is the case with reciprocalization, reflexivization, and middle formation in my sample. The parameter, thus, derives important cross-linguistic generalizations. Languages setting the parameter to “lexicon” are languages that can only carry out these operations in the lexicon. That is, they ban the application of reciprocalization in the syntax. Hence, there are no instances of syntactic reciprocals in lexicon languages. Languages setting the parameter to “syntax”, in contrast, do not exclude the possibility of having instances of lex-

ical reciprocals. The question is whether these instances are outputs of lexical reciprocalization or reciprocals that have gotten lexicalized as such, and have to be acquired separately?

Taking parameter setting at the acquisition stage into consideration, I tend to opt for the latter alternative. Note first that the distinctions between syntax and lexicon languages provide the necessary triggers for acquisition. As the value of the lex-syn parameter turns out to be identical across various operations, parameter setting is facilitated because evidence from various sources (operations) converges to set the choice. More specifically, consider reciprocalization. Setting the lex-syn parameter to "syntax" will be triggered by encountering ECM reciprocals and reciprocals that do not belong to the universal lexical set. By contrast, the existence of reciprocal event nominals and discontinuous reciprocals will trigger a lexical setting.

But given the existence of instances of lexical reciprocals in syntax languages, the child may be exposed to both types of triggers. How are such data processed by the acquirer? Concluding that the acquired language allows both syntactic and lexical application of reciprocalization, the child risks overgeneralizing as syntax languages may have only isolated instances of lexical reciprocals, and not the whole lexical set. It thus seems more plausible that upon exposure to both types of evidence, the child has to acquire lexical reciprocals on an individual basis. If this is correct, in syntax languages, too, the operation of reciprocalization is limited to apply in one component only, namely, in the syntax, just like in lexicon languages it applies exclusively in the lexicon. The fact that syntax languages can have instances of lexical reciprocals but not vice versa naturally follows from the different nature of these two components. As already mentioned in Section 4, the lexicon allows listing of irregularities, while the syntax is a computational system, not an inventory of items, which can list irregular meanings.

Additional evidence that discontinuous reciprocals are restricted to lexical reciprocals is offered in the next section. The evidence relates to the notion of "symmetry".

### 6.3. Symmetry – more evidence for the lexical approach

Dimitriadis (this volume) argues that the discontinuous construction is possible only with predicates denoting irreducibly symmetric events.<sup>20</sup> To understand what a symmetric event is, consider the examples in (40). (40a), which expresses reciprocity using the reciprocal *hitmašek* 'kiss', necessarily refers to five mutual

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20. Dimitriadis notes that Bantu languages constitute an exception to this generalization.

kissing events, each of which involves Dan kissing Ron and vice versa. That is so because *hitnašek* can only denote a symmetric event of kissing. (40b), in contrast, which expresses reciprocity using a reciprocal object, is ambiguous between five symmetric kissing events and ten non-symmetric kissing events – five by Dan and five by Ron. Under the latter reading (i.e., [40bii]), the relation between Dan and Ron is symmetric (because Dan kissed Ron and Ron kissed Dan), but the atomic events are not: there were 10 sequential asymmetric events of kissing, which result in a symmetric relation between Dan and Ron.

(40) Hebrew

- a. *Dan ve-Ron hitnašku xameš pe'amim.*  
 Dan and-Ron kissed.RECP five times  
 i. There were five symmetric kissing events.
- b. *Dan ve-Ron nišku exad et ha-šeni xameš pe'amim.*  
 Dan and-Ron kissed each other five times  
 i. There were five symmetric kissing events.  
 ii. There were ten asymmetric kissing events: five by Dan and five by Ron.

The notion of “symmetric event” is indeed very relevant to our discussion. As shown by Siloni (2002), whether a reciprocal must have a symmetric event interpretation or not is determined by its locus of formation. Lexical reciprocals necessarily denote symmetric events, while syntactic reciprocals denote other reciprocal situations, as will be discussed shortly. Moreover, not only lexical reciprocals but any other verb whose lexical meaning encompasses reciprocity denotes a symmetric event, whether its reciprocity is the result of the operation deriving them (as in the case of lexical reciprocals) or whether it is inherent (which will be discussed in Section 6.3 and 7).

In lexicon languages – Hebrew, Hungarian and Russian in my sample – reciprocals must denote a symmetric event. Thus, only the reading entailing five symmetric kissing events is available with the reciprocal ‘kiss’ in Russian (41a) and Hungarian (41b), just like in the corresponding Hebrew example (40a).

(41) Russian

- a. *Masha i Dima pocelovalis' pjat' raz.*  
 Masha and Dima kissed.RECP five times  
 There were five symmetric kissing events between Masha and Dima.

## Hungarian

- b. *János és Mari öt-ször csókol-óz-t-ak.*  
 János and Mari five-times kissed-RECP-PST-3PL

There were five symmetric kissing events between János and Mari.

Note that even a lexical reciprocal such as *hitkatev* ‘corresponded’, which expresses reciprocity that is composed of distinct writing events, necessarily refers to exchanges of letters, and not to the separate writing events. Thus, to the extent that it is possible to modify *hitkatev* by the adverb ‘five times’ (as in [42a]), the only available reading is that there were five events of letter exchanging between Dan and Ron (five “units” of corresponding). The parallel sentence with a reciprocal object (cf. [42b]) entails that each individual of the pair Dan and Ron wrote to the other five times, the temporal ordering of these writing events being undetermined.

## (42) Hebrew

- a. *Dan ve-Ron hitkatvu xameš pe'amim.*  
 Dan and-Ron corresponded five times
- b. *Dan ve-Ron katvu exad la-šeni xameš pe'amim.*  
 Dan and-Ron wrote each to.the-other five times

Syntactic reciprocals, in contrast, can describe a symmetric event but do not have to. In French, the inherently asymmetric verb *follow* can appear as a reciprocal, as illustrated in (43).

## (43) French

- Les enfants se sont suivis.*  
 the children *se* are followed  
 ‘The children followed each other.’

Similarly, the verb *s'embrasser* in (44), which most naturally describes five symmetric kissing events, can also denote ten asymmetric events in the appropriate context. Imagine the following scenario: Jean and Marie are playing a game; the loser at each turn has to kiss the winner. At the end we can announce the final score using (cf. [44a]). Moreover, when a reciprocal anaphor is added to the sentence, this reading becomes more salient (cf. [44b]). Addition of a reciprocal anaphor to the parallel Hebrew reciprocal verb does not change the

interpretation of the verb: only the five-symmetric-events reading is available, as the verb necessarily denotes a symmetric event (45).<sup>21,22</sup>

(44) French

- a. *Jean et Marie se sont embrassés cinq fois.*  
 Jean and Marie *se* are kissed five times
- b. *Jean et Marie se sont embrassés l'un l'autre cinq fois.*  
 Jean and Marie *se* are kissed each other five times

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21. Reciprocal anaphors can be added to reciprocal verbs. In Romance languages, in case the accusative argument is suppressed, they are added bare, and in case a dative is suppressed, they are introduced by the dative preposition. In Hebrew and Hungarian, they can only be introduced by a *with*-preposition. Russian does not allow them readily, but to the extent that it does, they must be introduced via *s* 'with'. The generalization seems to be that with lexical reciprocals, reciprocal anaphors can only be added when introduced by *with*. Syntactic reciprocals in Serbo-Croatian and Czech do not avail themselves of the Romance option, but their lexical reciprocals seem to pattern with Hebrew and Hungarian, as is expected if the *with* option is available to lexical but not syntactic reciprocals. Note that this provides further support to the claim that there are lexical reciprocals in syntax languages, and that they systematically pattern with lexical reciprocals. The difference between Romance on the one hand and Serbo-Croatian and Czech on the other, may be related to the different ways they realize emphatic pronouns, along lines entertained by Siloni (2001). I will not pursue this any further here.

22. Note that we have a three way distinction: lexical reciprocals allow only symmetric events (cf. [40a], [41]), syntactic reciprocals allow a symmetric and separate asymmetric events reading (cf. [44]), and reciprocal anaphors allow symmetric events, separate asymmetric events, and distribution over a long distant subject (as in [3a-iii]). The long distance reading entails that the predicate allows the separate events reading, but not vice versa. When the reciprocal reading is incorporated in the predicate, as in the case of syntactic reciprocals, long distance distribution seems impossible. When reciprocity holds between more than two entities, we get additional differences regarding the level of reciprocity. For instance, *The roommates kissed* can either denote strong reciprocity (if there was a kissing event between all possible pairs of roommates) or weak reciprocity (any roommate participated in a mutual kissing event, but not necessarily with all other roommates). These readings are irrelevant for our purposes. Cf. Langendoen (1978), Kim and Peters (1998), Dimitriadis (this volume) and references cited there for discussion.

(45) Hebrew

*Dan ve-Ron hitnašku exad im ha-šeni xameš*  
 Dan and-Ron kissed.RECP each with the-other five  
*pe'amim.*  
 times

Neither *s'embrasser* ([34a] repeated in [46a]) nor *se suivre* (cf. [46b]) allows discontinuity.

(46) French

- a. \**Jean s'est embrassé avec Marie.*  
 Jean *se-is* kissed with Marie
- b. \**Les enfants se sont suivis avec les filles.*  
 The boys *se* are followed with the girls

The reciprocal 'kiss' in Romanian and Czech, just like their French equivalent, most dominantly describes a symmetric event of kissing (five kissing events in [47]), but can also denote ten asymmetric events if the context enforces it (cf. scenario suggested for [44]).

(47) Romanian

- a. *Ana și Ion s-au sărutat de cinci ori.*  
 Ana and Ion *se-have* kissed PREP five times

Czech

- b. *Dan a Petr se pětkrát políbili.*  
 Dan and Petr *se* five times kissed

Crucially, however, as shown in (37) above – repeated in (48a) – and in (48b), in both languages, the reciprocal 'kiss' licenses the discontinuous construction, in sharp contrast with its French equivalent.

(48) Romanian

- a. *Ana s-a sărutat cu Ion.*  
 Ana *se-has* kissed with Ion  
 'Ana and Ion kissed.'

Czech

- b. *Dan se políbil s Petrem.*  
 Dan *se* kissed with Petr.  
 'Dan and Petr kissed.'

Given these observations, the kind of reciprocity expressed by a given verb does not seem to be the main factor determining whether the formation of a discontinuous reciprocal is possible (contra Dimitriadis this volume). The crucial factor is whether the reciprocal predicate is a lexical entry or the output of a syntactic operation. The former – but not the latter – entails a symmetric event and allows the discontinuous construction. The difference between the French reciprocal ‘kiss’ and its equivalents in Romanian and Czech must be that the latter can be formed in the lexicon, while the former cannot. This difference is most probably idiosyncratic, but as shown in 6.2, the evidence for that is solid. Below I offer additional evidence to the same effect.

If the present view is correct, we expect reciprocals in the discontinuous construction to necessarily denote a symmetric event not only in lexicon languages, where this is the only reading reciprocals have, but also in syntax languages, as the construction is based on lexical reciprocals.

The prediction is borne out. The reciprocal ‘kiss’ in Romanian and Czech, when appearing in the discontinuous construction, necessarily denotes a symmetric event. In sharp contrast with (47), the sentences in (49) allow the five-symmetric-events reading only. Although Romanian and Czech are syntax languages, and their reciprocals do not necessarily describe symmetric events, the discontinuous construction must have a symmetric event reading, as it is fed by lexical reciprocals.

(49) Romanian

- a. *Ana s-a sărutat cu Ion de cinci ori.*  
 Ana *se*-has kissed with Ion PREP five times  
 ‘Ana and Ion kissed five times.’

Czech

- b. *Dan se pět krát políbil s Petrem.*  
 Dan SE five times kissed with Petr  
 ‘Dan and Petr kissed five times.’

Likewise, when the French verb *se battre* (derived from *battre* ‘beat’, as discussed in Section 6.2) is used in the discontinuous construction, it can only denote symmetric events of fighting (cf. [50]), as it is a lexical reciprocal.

(50) French

- Jean s’-est battu avec Pierre cinq fois.*  
 Jean *se*-is fought with Pierre five times  
 ‘Jean fought with Pierre five times.’

In general, as observed by Omer Preminger (p.c.), we predict drifted reciprocals in both lexicon and syntax languages to always denote symmetric events. The reason is that a drifted meaning can be listed only once the syntactic reciprocal has been lexicalized. Once it is a lexical reciprocal, it must denote a symmetric event even if it undergoes semantic drift (unless it loses the reciprocal interpretation altogether).

The symmetric event reading is not a peculiarity of lexically derived reciprocals only. All verbs whose lexical meaning encompasses reciprocity entail a symmetric event interpretation. Consider verbs such as *shake hands* and *play*. While *shake hands* must denote reciprocity, *play* can, but does not have to, describe a reciprocal situation. Both verbs do not bear morphology typical of valence reducing operations, nor do they have a two-place alternate from which they could be derived. It is, in fact, hard to imagine what the corresponding transitive concept could be. In this sense, they are underived verbs. Importantly, however, both *play*, in its reciprocal reading, and *shake hands* entail a symmetric event. (51a) and (51b) (in its reciprocal reading) entail five symmetric events of shaking hands and playing chess respectively.

- (51) a. *John and Mary shook hands five times.*  
 b. *John and Mary played chess five times.*

Thus, such verbs constitute an additional set of verbs necessarily denoting a symmetric event. I call them “subject symmetric verbs”, because they express symmetry between members of the subject set. As expected, they allow discontinuity.

- (52) a. *John shook hands with Mary.*  
 b. *John played chess with Mary.*

Verbs whose lexical meaning encompasses reciprocity necessarily denote a symmetric event because the only way an event in itself can convey a reciprocal reading is by being symmetric. Any other reciprocal reading is the result of the accumulation of asymmetric sub-events, which do not exist in the lexicon.

In Section 7, I will examine two additional sets of verbs whose lexical meaning is reciprocal. They, too, will turn out to entail symmetric events and allow discontinuity. Prior to that, however, let us examine the properties of the oblique, discontinuous phrase.

## 6.4. The discontinuous phrase

The discontinuous phrase is reminiscent of the so-called “comitative” *with*-phrase, which can be added rather freely to sentences, as in (53). A conceivable analysis (entertained in Siloni 2001), then, is that the discontinuous construction simply utilizes a comitative phrase.

(53) *John rode to the store (with Mary).*

There are however important distinctions between the comitative phrase and the discontinuous one. For one thing, the comitative phrase can be freely dropped, while the discontinuous one does not readily allow omission (cf. [54]). Further, the interpretation of the comitative phrase is vaguer than that of the discontinuous phrase. Dimitriadis (2004b) observes that in (53), for instance, Mary may have been given a ride rather than riding a bike herself. Dimitriadis (2004b), Komlósy (1994), and Rákosi (2003, this volume) convincingly argue that while the comitative phrase is an adjunct, the discontinuous phrase is an argument. If so, then discontinuous reciprocals must be two-place predicates, unlike regular (i.e., non-discontinuous) reciprocals. This explains why the discontinuous phrase is not readily dropped and why its interpretation is stricter. Moreover, to the extent that the discontinuous phrase can be omitted, it is implicit, as expected if it is an argument (cf. [54]). But if we drop the comitative phrase in (53), the sentence, obviously, does not imply the participation of any additional entity in the event (Komlósy 1994; Rákosi 2003).

(54) Hebrew

??*Dan hitnašek.*

Dan kissed.RECP

‘Dan and someone kissed.’

An additional test showing that the comitative phrase passes while the discontinuous phrase fails is the addition of the modifier ‘together’ (Komlósy 1994 and Rákosi 2003). (55a) cannot mean that there was a mutual kissing event between Dan and Dina, because the discontinuous phrase disallows the modifier ‘together’. It is nonetheless marginally acceptable with the meaning: ‘Dan and someone kissed in the presence of Dina, or while Dina was also kissing someone’. This meaning results from analyzing the sentence as involving a comitative phrase, ‘together with Dina’, and omission of the discontinuous phrase, which is only marginally possible, as already illustrated in (54). By contrast, (55b) is possible, as the *with* phrase is a comitative phrase.

(55) Hebrew

a. ??*Dan hitnašek yaxad im Dina.*  
 Dan kissed.RECP together with Dina

b. *Dan halax habayta yaxad im Dina.*  
 Dan went home together with Dina

One may suggest that ‘together’ cannot be added to the discontinuous phrase, as it is redundant, because it is clear that if Dan and Dina kissed they were together. But it is equally clear in (55b) that they were together, and nonetheless modification by ‘together’ is possible. Moreover, writing to each other does not entail being together, and still (56) is impossible (I find omission of the discontinuous phrase impossible here; hence, the sentence is ungrammatical). The modifier ‘together’, thus, serves as an additional test distinguishing between the comitative and discontinuous phrases.<sup>23</sup>

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23. Although I do not deal here with the modifier ‘together’, I would like to briefly elaborate on its distribution. The modifier ‘together’ is also impossible in the regular (non-discontinuous) construction (cf. i.). But when reciprocity is denoted via a reciprocal anaphor, ‘together’ can be added (cf. ii.) (outside the ‘with’-phrase, ‘together’ sounds better with the prepositional prefix *be-* ‘in’):

Hebrew

(i) \**Dan ve-Dina hitkatvu (be-)yaxad.*  
 Dan and-Dina wrote.RECP together

(ii) *Dan ve-Dina katvu exad la-šeni mixtavim (be-)yaxad.*  
 Dan and-Dina wrote each to.the-other letters together

I believe the correct generalization is that ‘together’ cannot refer to (modify) the arguments of a symmetric event. Setting aside the marginal possibility to drop the discontinuous phrase, when a ‘with’-phrase appears with a reciprocal verb, the construction must be interpreted as discontinuous (cf. iii.), even if the subject is not a singleton set, and reciprocity could have held between members of the subject set (and the ‘with’-phrase could have been interpreted as comitative). Hence, (iv.) is expected to be ungrammatical, owing to the addition of ‘together’. However, it is possible to add an additional ‘with’-phrase that can be modified by ‘together’ (Rákosi 2003) since it is comitative, and not an argument of the symmetric event (cf. v.).

Hebrew

(iii) *Ha-yeladot hitnašku im Dan.*  
 the-girls kissed.RECP with Dan  
 ‘A symmetric event of kissing held between Dan and the girls.’

(iv) \**Ha-yeladot hitnašku yaxad im Dan.*  
 the-girls kissed.RECP together with Dan

(56) Hebrew

\**Dan hitkatev yaxad im Dina.*  
 Dan wrote.RECP together with Dina

In sum, the discontinuous phrase is an argument, whose participation in the event is equal to that of the subject. Given that, we would expect it to pass tests diagnosing Agenthood. However, Rákosi (2003) observes that when an infinitival adjunct and an Agent oriented adverb, which are both used as a diagnostic of Agenthood, are added to the discontinuous construction, they can refer to the subject only, and not the discontinuous phrase. This is illustrated in (57a-b). If both arguments are interpreted as Agents, why do these Agent diagnostics diagnose the subject only?

(57) Hebrew

- a. *Dan hitnašek im Dina bli le-hit'ayef.*  
 Dan kissed with Dina without to-be.tired  
 'Dan tirelessly kissed Dina.' (not 'Dan and Dina kissed tirelessly.')
- b. *Dan hitnašek im Dina be-xavana.*  
 Dan kissed with Dina in-intention  
 'Dan intentionally kissed Dina.' (not 'Dan and Dina kissed intentionally.')

It can be argued that this follows from the fact that the subject is structurally higher than the discontinuous phrase. Consider, for instance, the French causative construction in (58). It is a biclausal structure containing two Agents, that of the higher predicate, Jean, and that of the lower predicate, Paul. Only the higher predicate can control the subject of the infinitive in (58a) and be modified by *exprès* 'on purpose' in (58b).

(58) French

- a. *Jean a fait courir Paul sans avoir peur.*  
 Jean has made run Paul without have fear  
 'Jean, without being afraid, made Paul run.'
- b. *Jean a fait courir Paul exprès.*  
 Jean has made run Paul deliberately  
 'Jean, deliberately made Paul run.'

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(v) *Dan hitnašek im Dina yaxad im Ron.*  
 Dan kissed.RECP with Dina together with Ron  
 'Ron accompanied Dan to some extent in his symmetric kissing event with Dina.'

But the Instrument diagnostic of Agents is not equally sensitive to structural hierarchy. An Instrument requires the explicit or implicit presence of an Agent. As shown in (59), the Instrument ‘with a cane’ can modify the Agent of either *faire* ‘make’ or *marcher* ‘walk’, despite the structural “superiority” of the former.

(59) French

*Jean a fait marcher Paul avec une canne.*  
 Jean has made walk Paul with a cane  
 ‘Jean made Paul walk with a cane.’

An Instrument added to the discontinuous construction also diagnoses the subject only, and not the discontinuous phrase. Sentence (60a) states that Dan used a fountain pen to write to Dina. As to Dina, (60a) does not supply any information regarding the instrument she used. Hence, the addition of ‘and she wrote to him with a pencil’ does not give rise to a contradiction (60b).

(60) Hebrew

- a. *Dan hitkatev im Dina be-et nove'a.*  
 Dan wrote.RECP with Dina in-pen fountain  
 ‘Dan corresponded with Dina using a fountain pen.’
- b. *Dan hitkatev im Dina be-et nove'a ve-hi*  
 Dan wrote.RECP with Dina in-pen fountain and-she  
*katva lo be-iparon.*  
 wrote to.him with-pencil  
 ‘Dan corresponded with Dina using a fountain pen and she wrote to him with a pencil.’

Despite the fact that the discontinuous phrase is an argument whose participation in the event is equal to that of the subject, it fails to be diagnosed as Agent. This seems very puzzling. It turns out, however, that this behavior is typical of predicates denoting a symmetric event in the lexicon.

Consider again the subject symmetric verbs mentioned in Section 6.3. *Shake hands* and *play* (in its reciprocal reading) clearly take a discontinuous argument, not a comitative adjunct. To the extent that *with Mary* can be omitted in (61a), the participation of an additional entity in the event is implicit. Likewise, as arguments are not readily dropped, the preferred reading of (61b) without the oblique phrase is not reciprocal.

- (61) a. *John shook hands ??(with Mary).*  
 b. *John played (with Mary).*

Now, although (62a) states that both Dan and Dina played, the Instrument ‘red pen’ modifies Dan’s playing only. We have no information as to which instrument Dina used in the game: it may be the same pen but it may also be another pen, a pencil, etc. Hence, the addition of ‘and she used a blue pen’ does not give rise to a contradiction (62b).

(62) Hebrew

- a. *Dan sixek iks-miks-driks im Dina be-et adom.*  
 Dan played *x-mix-drix* with Dina in-pen red  
 ‘Dan played *x-mix-drix* with Dina with a red pen.’
- b. *Dan sixek iks-miks-driks im Dina be-et adom.*  
 Dan played *x-mix-drix* with Dina in-pen red  
*ve-hi hištamša be-et kaxol.*  
 and-she used in-pen blue  
 ‘Dan played *x-mix-drix* with Dina with a red pen and she used a blue pen.’

I conclude that lexical reciprocals and subject symmetric verbs assign their respective  $\theta$ -role exclusively to the subject. The discontinuous phrase is not assigned this role. Hence, the Instrument diagnostic does not detect it. It is nonetheless an argument. How is it licensed? Below I sketch my ideas, which I will not develop here as the paper does not deal with the semantics of reciprocals (cf. Siloni 2008).

Verbs whose lexical meaning is reciprocal must denote a symmetric event. This is so because the only way an atomic event, in itself, can convey a reciprocal reading is by being symmetric. Any other reciprocal reading is the result of the accumulation of asymmetric sub-events, which do not exist in the lexicon. We can label such verbs “symmetric event verbs”. They can be mapped to the syntax either as one-place predicates or as two-place predicates. As monadic verbs, they assign their respective  $\theta$ -role to the subject, and require a symmetric relation to hold between members of the subject set. As dyadic verbs, they also assign their role to the subject, but in addition they take an argument introduced by a *with* type element. We can call this argument a “symmetric argument”. A symmetric argument is only possible with symmetric event predicates. It is by definition in a symmetric relation with another participant in the symmetric event (a co-argument). In the cases examined so far, this participant is realized as the subject. In the next section, it will be shown that a symmetric argument can also be in a symmetric relation with the object. The symmetric argument, then, is not assigned the same role that is assigned to the participant with which

it is in a symmetric relation. This should be the reason why it is not diagnosed as Agent.

Syntactic reciprocals do not license a discontinuous argument, as they are not symmetric event verbs. Their reciprocal reading is the result of the accumulation of asymmetric sub-events. It can denote an asymmetric relation between the participants in the event (for instance, *se suivre* ‘follow.RECP’) or a symmetric one. A symmetric relation can be construed either by sequential sub-events (say, sequential asymmetric hugging events between X and Y) or by simultaneous sub-events (say, asymmetric hugging events between X and Y taking place at the same time interval). The latter construal is equivalent to the meaning of symmetric event verbs. Hence, syntactic reciprocals can have readings identical to those of lexical reciprocals (e.g. [44]). Crucially, however, syntactic reciprocals are not symmetric event verbs, and therefore do not license the discontinuous construction.

## 7. Inherent reciprocity

Consider the verbs in (63)–(64). Just like derived reciprocals, they express reciprocity, bear morphology typical of valence reducing operations, and have a transitive alternate (cf. [65]–[66]).

(63) Hebrew

- a. *Ha-cva'im hit'arbevu.*  
the-colors mixed  
‘The colors mixed.’
- b. *Šney ha-neharot hitxabru.*  
two the-rivers merged  
‘The two rivers merged.’

(64) French

*Les forces ouvrières et les forces intellectuelles se sont*  
the forces working and the forces intellectual *se* are  
*unies à cette occasion.*  
united at this occasion  
‘The working forces and the intellectual forces united at this occasion.’

(65) Hebrew

- a. *Ha-yeled irbev et ha-cva'im.*  
the-child mixed ACC the-colours  
‘The child mixed the colours.’

- b. *Ha-po'alim xibru et šney ha-neharot.*  
 the-workers merged ACC two the-rivers  
 'The workers merged the two rivers.'

(66) French

- Le chef a uni les forces ouvrières et les forces*  
 the leader has united the forces working and the forces  
*intellectuelle.*  
 intellectual  
 'The leader united the working forces and the intellectual forces.'

At first glance, the verbs in (63)–(64), then, may seem analogous to the reciprocals discussed so far. But on closer inspection they turn out to be rather different. First, their reciprocity is inherent, and not the result of the operation deriving them. Thus, not only do they denote reciprocity, but so do their transitive alternates (cf. [65]–[66]). The latter denote reciprocity between members of the object set. The reciprocals discussed in previous sections are endowed with a reciprocal meaning by the operation of reciprocalization. Their transitive alternates, from which they are derived, do not denote reciprocity. 'John kissed Mary' obviously does not entail that Mary kissed John as well, as in its reciprocal counterpart 'John and Mary kissed'. But if the child mixed the colours, as in (65a), then the colours mixed. The reciprocal meaning here is inherent to the concept and independent of the valence reducing operation.<sup>24</sup>

Second, the operation deriving these verbs suppresses the realization of the external (not the internal) role of their transitive alternate, i.e., 'the boys', 'the workers', and 'the leader' in the above examples.

Following Chierchia (2004) and Reinhart (2002), I assume that universal grammar avails itself of an operation that reduces the external role. Reinhart (2002) shows that external role reduction always targets a Cause role, that is, a role that can be realized by an animate or inanimate entity, as it is underspecified regarding the mental state of the argument it is assigned to, unlike the Agent, which requires an animate entity. The operation has been consequently labeled "decausativization" by Reinhart and Sioni (2005). Indeed, the operation forming the verbs in (63)–(64) targets a Cause role, as shown by the fact that the subject of their transitive alternates is underspecified with regard to animacy (cf. [67]–[68]). I therefore call these verbs "decausative reciprocals".

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24. Note also that verbs such as *mix* impose a collective (exhaustive) interpretation, unlike derived reciprocals, such as 'kiss'.

## (67) Hebrew

- a. *Ha-gšamim irbevu et ha-cva'im.*  
 the-rains mixed ACC the-colours  
 'The rains mixed the colours.'
- b. *Ha-gšamim xibru et šney ha-neharot.*  
 the-rains merged ACC two the-rivers  
 'The rains merged the two rivers.'

## (68) French

*La situation a uni les forces ouvrières et les forces intellectuelles.*  
 the situation has united the forces working and the forces intellectual  
 intellectual  
 'The situation united the working forces and the intellectual forces.'

Reinhart further shows that when the argument remaining after decausativization is a Theme, the decausativized verb is unaccusative.<sup>25</sup> The subject of decausative reciprocals is a Theme, and indeed it passes tests diagnosing an internal argument status, unlike the subject of derived reciprocals (cf. Section 3). In Hebrew, it can appear post-verbally (cf. [69a]), and it can be modified by a possessive dative (cf. [69b]); the decausative reciprocal itself can appear in the *nitpa'el* form, which is possible only with verbs whose subject is an internal argument.<sup>26</sup>

## (69) Hebrew

- a. *Hit'arbevu šney cva'im.*  
 mixed two colours  
 'The two colours mixed.'
- b. *Le-mi hit'arbevu ha-cva'im?*  
 to-whom mixed the-colours  
 'Whose colours mixed?'

---

25. This is not a vacuous generalization, as it is not the case that all one-place predicates whose argument is a Theme are unaccusatives, only derived predicates of this kind are unaccusative (cf. Horvath and Siloni 2002, for some discussion of Theme-unergatives).

26. When the remaining argument after decausativization is an Experiencer, the resulting predicate is unergative (cf. Reinhart 2002). Rubinstein (2003) observes that there are also instances of decausativized Experiencer reciprocals, which are indeed unergatives, e.g. *hitkarev* 'become closer'.

- c. *Šney cva'im nit'arbevu.*  
 two colours mixed(*nitpa'el*)  
 'Two colours mixed.'

If these verbs are formed by decausativization, why do they bear the same morphological form as derived reciprocals? As mentioned in Section 2, this morphology is typical of valence reducing operations in general. It can code not only the application of reciprocalization, but also of reflexivization, middle formation, passivization, and decausativization, as in the case discussed here. Simply, the fact that decausative reciprocals denote reciprocity and bear the same morphology as derived reciprocals blurs their distinct derivational origin.

In Siloni (2002), I argue that operations changing the thematic information of predicates are illicit in the syntax, as stated in the Lexicon Interface Guideline (70).<sup>27</sup>

- (70) The Lexicon Interface Guideline  
 The syntactic component cannot manipulate  $\theta$ -grids: Elimination, modification and addition of a  $\theta$ -role are illicit in the syntax.

If the Lexicon Interface Guideline is correct, decausativization can only apply in the lexicon. Indeed, no cross-linguistic variation of the type attested by derived reciprocals can be detected with regard to the outputs of the decausativization. As far as decausative reciprocals are concerned, we expect them to show properties typical of lexical reciprocals not only in Hebrew (or other languages that form derived reciprocals in the lexicon) but also in French (or other syntax languages), as in both types of languages decausativization applies in the lexicon. This prediction is borne out. Specifically, decausative reciprocals allow the discontinuous construction in both Hebrew (cf. [72]) and French (cf. [73]).

- (71) Hebrew
- a. *Ha-adom hit'arbev im ha-šaxor.*  
 the-red mixed with the-black  
 'The red mixed with the black.'
- b. *Ha-nahar ha-ze hitxaber im ha-nahar ha-hu.*  
 the-river the-this merged with the-river the-that  
 'This river merged with that river.'

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27. Dimitriadis (2004a) suggests deriving a similar insight from the basic properties of the semantic representation.

(72) French

*Les forces ouvrières se sont unies avec les forces*  
 the forces working *se* are united with the forces  
*intellectuelles.*

intellectual

‘The working forced united with the intellectual forces.’

We equally predict their transitive alternate to allow discontinuity, but in the complement domain, as they are lexical entries that express reciprocity between members of the object set. The prediction is borne out.

(73) French

a. *Ha-yeled / ha-gešem irbev et ha-adom im ha-šaxor.*  
 the-child / the-rain mixed ACC the-red with the-black  
 ‘The child / the rain mixed the red and the black.’

b. *Ha-po’alim / ha-gšamim xibru et ha-nahar ha-ze*  
 the-workers / the-rains merged ACC the-river the-this  
*im ha-nahar ha-hu.*  
 with the-river the-that

‘The workers/the rains merged this river with that river.’

(74) French

*Le chef/la situation a uni les forces ouvrières avec*  
 the leader / the situation has united the forces working with  
*les forces intellectuelles.*  
 the forces intellectual

Finally, we expect both decausative reciprocals and their transitive alternates to denote symmetric events. This is in fact so, and, what is more: as their reciprocity is inherent to the concept, it is even impossible to imagine an event of unification or mixing that will not be symmetric. Thus, the addition of the modifier ‘five times’ to these verbs always entails five symmetric events.

Decausative reciprocals and their transitive alternates share with subject symmetric verbs such as *shake hands* (cf. Section 6.3) the property of denoting a symmetric event inherently, not as the result of reciprocalization. In this respect, decausative reciprocals are “decausative symmetric verbs”, and their transitive alternates, from which they are derived, “object symmetric verbs”.

The behaviour of decausative symmetric verbs provides support for the validity of the Lexicon Interface Guideline. More generally, the behaviour of

symmetric verbs reinforces my claim that verbs whose lexical meaning is reciprocal necessarily involve a symmetric event, and allow the discontinuous construction, unlike verbs that acquire their reciprocal meaning in the syntax.

## 8. Conclusions

The paper is a detailed study of the different types of verbs denoting reciprocity in a sample of ten languages. It mainly focuses on derived reciprocals, that is, verbs that acquire their reciprocal meaning as the result of the operation that derives them. Cross-linguistically, derived reciprocals are formed by the same type of operation, namely, reciprocalization. Nonetheless they split into two types depending on where the operation applies. In accordance with the lex(icon)-syn(tax) parameter, reciprocalization can apply in the lexicon or in the syntax. A cluster of distinctions follows from the setting of the parameter. These distinctions are summarized in (76)–(77):

(76)

### Lexical Reciprocals

- constitute a close set
- cannot be ECM predicates
- can have a frozen input
- can undergo semantic drift
- can participate in idioms not available for their transitive alternate
- undergo accusative case reduction obligatorily whether the reduced argument is associated with accusative or dative
- can undergo nominalization forming reciprocal event nominals
- denote a symmetric event
- allow the discontinuous construction

(77)

### Syntactic Reciprocals

- are formed by a productive operation
- can be ECM predicates
- cannot have a frozen input
- cannot undergo semantic drift
- cannot participate in idioms not available for their transitive alternate
- do not necessarily lose accusative case; require a case reducer to handle the case of the reduced argument
- cannot be nominalized; in case they have event nominal counterparts, the latter are derived by syntactic reciprocalization of the transitive noun
- allow asymmetric and symmetric constructions; the latter can be sequential or simultaneous
- disallow the discontinuous construction

The paper argues that all verbs denoting reciprocity in the lexicon necessarily denote symmetric events, which is a necessary condition for the discontinuous reciprocal construction to be possible. Evidence to this effect is provided by verbal entries denoting reciprocity inherently, and not as the result of the operation of reciprocalization. Among the ‘inherent set’, one finds underived verbs and decausative verbs. Both types of predicates denote reciprocity in the lexicon, on a par with lexical reciprocals and in contrast with syntactic reciprocals, which acquire their reciprocal meaning in the syntax. As expected, both the underived and the decausative type denote symmetric events and license the discontinuous construction.

The data discussed in the paper supply robust evidence that valence changing operations can apply in the lexicon and the syntax.

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# **Anaphoric dependencies: How are they encoded? Towards a derivation-based typology\***

*Eric Reuland*

## **1. Introduction**

The typology of reflexives presented in Faltz (1977) had a major impact on the research in this field. But since Faltz's work, the study of reflexives and related issues has undergone significant developments. In addition to reflexives, reciprocals have recently become the subject of systematic studies as well. Rather than being taken for granted, the notion of binding itself has become the subject of investigation, and the distinction between anaphors and pronominals turned out to be less clear cut than previously assumed. In this contribution I will address these developments, focusing on the following three questions:

- (i) Can a typology of reciprocals be modeled on the typology developed by Faltz (1977) for reflexives? And how could such a typology be refined?

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Some of the comments I received made me realize that it is hard to present a full summary of the arguments for the theory that serve as the background for the present discussion. Where crucial for an understanding I included the main arguments and facts, but many issues discussed elsewhere I had to leave out. For a full discussion I have to refer to previous works such as Reinhart and Reuland (1993) and Reuland (2001).

- (ii) What is (syntactic or semantic) “binding”? Can reciprocity and reflexivity both be described in terms of that notion?
- (iii) Does the term “anaphor” have any theoretical significance, or is it merely a convenient label used to refer to a specific class of pronominals or pronoun-like elements with certain (“defective”) referential properties? Can elements like English *each other* be said to be “anaphors”?

I will start with the second question, and show that it has in fact more ramifications than one may have initially thought. Thus, a great deal of the paper will be devoted to a discussion of issues revolving around (ii). It will be shown that a typology of reflexives is needed that uses dimensions complementing Faltz’s original typology. In short, whereas Faltz’s typology is based on the morphological status of the reflexive elements, the origin of their composite parts, and the way they are morpho-syntactically connected, we will see that there are further dimensions, which reflect the role of reflexives in the derivation of the reflexive interpretation.

In the end, both (i) and (iii) will receive brief answers in terms of what we can conclude about (ii).

This article is organized as follows: In Section 2, I discuss some basic theoretical and empirical issues in the theory of binding, and of the way binding relations are encoded in language. The chapter starts out with the canonical binding theory, followed by a discussion as to why it needs revision, and a brief overview of reflexivity theory. In view of the fact that anaphors are often analyzed as deficient in some respect, a discussion of the notion of “underspecification” is presented. Two fundamental *why*-questions are introduced and assessed: Why must reflexivity be licensed, and why must anaphors be bound? The first question is answered, the second question is left for discussion in Section 3. Finally the question is addressed what reflexive binding and reciprocal binding have in common. Section 3 focuses on two scenarios for deriving the binding requirement on complex anaphors, one for SELF-anaphors, the other for body-part reflexives. It is shown that under certain general empirical assumptions the binding requirements for SELF-anaphors and body-part reflexives can be derived without recourse to any statement that is specific to binding. Section 4, finally, provides a summary of the typology of reflexives and reciprocals, based on the results of the previous sections.

## 2. What is (syntactic or semantic) “binding”? Can reciprocity and reflexivity both be described in terms of that notion?

As is well-known, languages show a variety of interpretive dependencies. (1) illustrates some of them, with the elements involved in the dependencies bold-faced:

- (1) Dependencies
- Question formation (wh-movement)
    - a. **What** do you think John saw **—**?
  - Donkey anaphora
    - b. Every man who owns **a donkey** beats **it**.
  - Scopal dependencies
    - c. **Three** men lifted **a** table.

Clearly not all of these dependencies are of the same sort, and they differ from canonical binding cases as in (2).

- (2) Binding
- a. **No one** thought that **he** would have to leave.
  - b. **John** hated **himself**.

Yet, the term “binding” is sometimes used in a very broad sense so as to include many types of dependencies. If the question of whether reciprocity and reflexivity can both be described in terms of binding is to have empirical content, the notion of binding should be made precise. Moreover, if we are to assess whether various dependencies in different languages do in fact instantiate binding, our definition of binding should also be independent of the ways in which languages encode it.

In accordance with standard practice I restrict discussion to binding relations between elements in “argument positions”, positions that can be Case- or theta-marked (generally referred to as *A-binding*), and I will take standard reconstruction mechanisms for dislocated elements (involving *A'-binding*) for granted.<sup>1</sup> The canonical theory of A-binding (Chomsky 1981) is based on the following ingredients:

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1. That is, *himself* in *himself John admired —* is bound as if it is in the object position of *admire*. For the purpose of this discussion I will abstract away from the question of how notions such as A-position or A'-position can be reconstructed in more parsimonious models of syntactic structure developed in Chomsky (1995) and subsequent work.

- i. A division of argument types into:
  - A. Anaphors,
  - B. Pronominals, and
  - C. R-expressions.
- ii. The notion of an “index” to represent dependencies.
- iii. C-command as a structural condition on binding.
- iv. Syntactically defined locality conditions (captured by the notion of a “governing category”).

Binding is defined as follows:

- v.  $\alpha$  binds  $\beta$  iff
  - $\alpha$  and  $\beta$  are co-indexed, and
  - $\alpha$  c-commands  $\beta$ :
    - $\alpha$  is a sister of  $\gamma$  containing  $\beta$ , as in the configuration
    - $\alpha[\gamma \dots \beta \dots]$

The *Binding conditions* are formulated as:

- A. An anaphor is bound in its governing category.
- B. A pronominal is free in its governing category.
- C. An R-expression is free.

The notion of a *governing category* captures the locality effects which binding of pronominals and anaphors exhibits. It is defined as follows:

$\gamma$  is a governing category for  $\alpha$  if and only if  $\gamma$  is the minimal category containing  $\alpha$ , a governor of  $\alpha$ , and a SUBJECT (*accessible to  $\alpha$* )<sup>2</sup>

2. For the benefit of the reader I present an overview of the key notions of the canonical binding theory:

A governor of  $\alpha$ , in this framework, is an element assigning a semantic role or Case to  $\alpha$ . (i) illustrates the paradigm case that is captured by this definition. Binding is indicated by italics; [ $GC-\alpha$ ] stands for the *governing category* of  $\alpha$ .

- (i) a. *John* expected [ $GC-\text{himself}/\text{him}$  the queen to invite *him/\*himself* for a drink]
- b. [ $GC-\text{himself}/\text{him}$  *John* expected [ $IP$  *himself/\*him* to be able to invite the queen]]

(i) exemplifies what is known as the *Specified Subject Condition* (SSC); the governing category of  $\alpha$  is the domain of the subject nearest to  $\alpha$ . For *him/himself* this subject is *the queen* in (ia) and *John* in (ib). Unlike what is seen in infinitives, a finite clause comes out as the governing category for its subject. One way of capturing this is to assume that the finite inflection, which is a carrier of nominal features (inflecting for person and number) also counts as a subject for the computation of the governing category. The notion SUBJECT (in capitals) thus generalizes over the DP in canoni-

Although this canonical formulation of the binding theory captures a considerable range of facts, over the last decades it has become clear that it must be revised. Below, I summarize some of these reasons. After some preliminaries I will come back to these reasons in more detail.

## 2.1. Reasons for revision

A couple of reasons why the canonical binding theory had to be revised are given below:

- (i) There are systems with more distinctions than just the distinction between anaphor and pronominal. For instance (limiting ourselves to a very small subset of cases to exemplify the point):
  - Dutch has a 3-way system: pronominals such as *hem* ‘him’, simplex anaphors (henceforth, SE-anaphors) such as *zich* ‘himself’, and complex anaphors (SELF-anaphors) such as *zichzelf* ‘himself’.
  - Icelandic, and Norwegian with the other mainland Scandinavian languages) have a 4-way system: Pronominals, SE-anaphors, SE-SELF and Pronominal-SELF.

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cal subject position and the Agreement on the tensed verb/auxiliary.

Under certain conditions, an anaphor can be appropriately bound by an antecedent that is outside the finite clause containing the anaphor. This is illustrated in (ii):

(ii) *The boys* were afraid [that [pictures of *themselves*] would be on sale]

This “domain extension” is captured by the italicized accessibility condition in the definition of governing category. In order to count for the computation of the governing category of an anaphor, a SUBJECT must be accessible to the anaphor. Accessibility is defined in (iii):

(iii)  $\alpha$  is accessible to  $\beta$  if and only if  $\beta$  is in the c-command domain of  $\alpha$ , and assignment to  $\beta$  of the index of  $\alpha$  would not violate the *i-within-i condition*

*i-within-i condition*

[ $\gamma \dots \delta \dots$ ], where  $\gamma$  and  $\delta$  bear the same index

In the case of (ii), coindexing [pictures of *themselves*] and *would* by “subject-verb” agreement (irrespective of the fact that the auxiliary *would* does not carry overt agreement in English), and subsequently coindexing *themselves* and *would* by the “test indexing” of (iii), yields the indexing configuration of (iv).

(iv) *The boys* were afraid [that [ $\gamma$  pictures of *themselves* $_i$ ] would $_i$  be on sale]].

This configuration violates the *i-within-i condition* of (iii), hence is marked illicit, and therefore *would* does not count as an accessible SUBJECT for *himself*. Hence,  $\gamma$  is not a governing category for *himself*, which may therefore look for an antecedent in the next higher clause.

- (ii) In addition to structural conditions, properties of predicates play a role in determining binding possibilities as well:
  - English has *John washed* (no object) with a reflexive interpretation, but not \**John hated*.
  - Dutch has *Jan waste zich* (a SE-anaphor), but not \**Jan haatte zich*, etc.
- (iii) Under certain structurally defined conditions, certain anaphoric forms need not be locally bound, or not even be bound at all:<sup>3</sup>
  - exempt *himself* in English;
  - logophoric *sig* in Icelandic.
- (iv) Certain languages allow locally bound pronominals:
  - *him* in Frisian: *Jan waske him* ('Jan washes him');<sup>4</sup>
  - 1st and 2nd person pronominals across the board: Germ. *Ich wasche mich*, Dutch *Jij wast je*, French *Nous nous lavons*, etc.

These facts entail that it is impossible to provide an independent characterization of anaphors versus pronominals in terms of an intrinsic obligation to be locally bound or free. Features such as [ $\pm$  anaphor] and [ $\pm$  pronominal] (Chomsky 1981 and subsequent work) are not primitive lexical features.<sup>5</sup>

In order to capture these facts a modular approach to binding was developed (Reinhart and Reuland 1991, 1993, Reuland and Reinhart 1995, elaborated in Anagnostopoulou and Everaert 1999, and subsequently in Reuland 2001, Reinhart 2002, Reinhart and Siloni 2005, and others). Binding relations are licensed by intrinsic features of binder and bindee, together with the properties of the predicates they are arguments of. It would carry us beyond the scope of the present article to give a full overview. However, I will present a brief exposition of the main issues and their implications for typology.

## 2.2. A brief overview of issues in reflexivity

The typology of anaphoric expressions developed in Reinhart and Reuland (1993) and modified in Anagnostopoulou and Everaert (1999) is presented in Table 1.

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3. The relevant conditions will be discussed below.

4. As will be illustrated below, Frisian *him* has all the further properties of a pronominal. See below for some discussion of binding in Frisian. For more extensive discussion, see Reuland and Reinhart (1995).

5. For discussion of the overlap between bound and free uses of 1st and 2nd person pronominals from a somewhat different perspective, see Burzio (1991).

Table 1. A typology of anaphoric expressions.

	SELF	SE	PRONOMINAL	PRON/SELF
Reflexivizing function	+	–	–	+
R(eferential independence)	–	–	+	+

SELF stands for elements like English *himself*, Dutch *zichzelf*, SE for Dutch *zich*, Icelandic *sig*, etc., PRONOMINAL for *him*, etc. and PRON/SELF for Greek *o eaftos tou*.

SELF-anaphors are reflexivizers: they license the reflexive interpretation of a predicate (as more precisely expressed in Conditions A and B below).<sup>6</sup> Pronominals and SE-anaphors (e.g. Dutch *zich*, Icelandic *sig*) do not by themselves license a reflexive interpretation of a predicate. Thus, if pronominals and SE-anaphors occur as “bound” complements of reflexive predicates they do not *mark* these predicates as reflexive. They only *reflect* that these predicates are reflexive for an independent reason. This difference between SELF-anaphors and SE-anaphors is illustrated by the ill-formedness of \**Jan haatte zich* ‘John hated SE’. *Zich* does not license reflexivity here. In order for the reflexive interpretation to be licit, the complex anaphor *zichzelf* must be used, as in *Jan haatte zichzelf* ‘John hated himself’. Hence, the technical notion of *reflexive-marking* must be distinguished from the notion of “marking” as it is found in much of the typological literature.

Pronominals and SE-anaphors are alike in that both consist solely of phi-features: *person*, *number*, *gender* and a feature for a syntactic category; in addition they bear Case. They can be characterized as +/-R(eferential). The property +/-R has two faces: It is a semantic notion, but grounded in morpho-syntax. Semantically, +R can be characterized as standing for: *capable of inde-*

6. For the benefit of the reader I include here the definitions as they are given in Reinhart and Reuland (1993: 40):

*Definitions*

- (i) a. The *syntactic predicate* formed of (a head) P is P, all its syntactic arguments, and an external argument of P (subject). The *syntactic arguments* of P are the projections assigned  $\Theta$ -role or Case by P.
- b. The *semantic predicate* formed of P is P and all its arguments at the relevant semantic level.
- c. A predicate is *reflexive* iff two of its arguments are coindexed.
- d. A predicate (formed of P) is *reflexive-marked* iff either P is lexically reflexive or one of P’s arguments is a SELF-anaphor.

Thus, the conditions under which a SELF-anaphor actually reflexivizes (reflexive-marks) a predicate are given in (id).

*pendent reference* (SE-anaphors and SELF-anaphors cannot be used deictically). Morphosyntactically, +R-elements are all fully specified for phi-features and structural Case. (Note that this is a first approximation; for discussion of full versus underspecification, see below). Syntax can only see the morpho-syntactic properties of pronouns: Pronominals are +R; SE-anaphors (and SELF-anaphors) are –R.

As Anagnostopoulou and Everaert (1999) show, the reflexivizing function and referential independence can be combined, as in the Greek element *o eaftos tu* that on the one hand is a reflexivizer, and on the other can occur in subject position without being bound.

The binding facts are captured by two conditions on predicates and a condition on A-chains:

### Binding Conditions

*Condition A:* A reflexive-marked syntactic predicate is reflexive

- Captures the following types of facts (among others):
  - \**I saw himself* is ill-formed: *himself* is a syntactic argument of *saw*, hence forces the predicate to be reflexive. The feature mismatch between subject and object makes it impossible for this requirement to be satisfied.
  - In *Max<sub>i</sub> expected the queen to invite Mary and himself<sub>i</sub> for a drink* the relevant argument of *invite* is *Mary and himself*, which properly contains *himself*; hence *himself* is exempt from condition A, and does not reflexivize the predicate. As a consequence, *himself* may receive a non-local antecedent. In related cases, depending on the structure *himself* need not have a linguistic antecedent at all (see for instance, Pollard and Sag 1992, 1994).<sup>7</sup>

*Condition B:* A reflexive semantic predicate is reflexive-marked.

- Captures (among other things) that the collective *we elected me* is well-formed and the distributive *we voted for me* is awkward; the distributive reading yields a reflexive instantiation of the *vote-for* relation (a semantic predicate of the form *x voted for x*) which is not (and cannot be) licensed.

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7. When *himself* is not a syntactic argument of a predicate Condition A is satisfied vacuously, and *himself* is exempt from the binding requirement SELF imposes. If so, its interpretation is governed by semantic and discourse principles. This use is called “logophoric” in Reinhart and Reuland (1993). For example, *himself* is allowed to be bound by an antecedent outside its canonical binding domain (the governing category in the sense of the standard binding theory, or the syntactic predicate as defined in Reinhart and Reuland 1993), i.e. by *Max* in *Max<sub>i</sub> expected the queen to invite Mary and himself<sub>i</sub> for a drink*.

The same holds true for *John<sub>i</sub> hates Mary and himself<sub>i</sub>/\*him<sub>i</sub>*. The reflexive instantiation of the *hate*-relation must be licensed, which requires *himself* instead of *him*. It also captures the contrast in the binding of *him* between *John<sub>i</sub> expected* [[*Mary and him<sub>i</sub>*] *to be in danger*] and *John<sub>i</sub> persuaded* [*Mary and him<sub>\*i</sub>*] [*PRO to leave*], since *John* and *him* are coarguments of the same **semantic** predicate in the latter, but not in the former (ECM) case.

### Condition on A-chains

A maximal A-chain ( $\alpha_1, \dots, \alpha_n$ ) contains exactly one link –  $\alpha_1$  – which is +R

An NP is +R iff it carries a full specification for  $\Phi$ -features and structural Case

Binding conditions A and B say nothing about the contrast between the pronominal and the SE-anaphor in (3):

#### (3) Dutch

- a. *Jan waste zich/\*hem.*  
 Jan washed SE/\*PRON  
 ‘Jan washed.’
- b. *Jan voelde [zich/\*hem wegglijden].*  
 Jan felt SE/\*PRON slide.way  
 ‘Jan felt himself slide away.’

This contrast follows from the chain condition. The chain condition captures that in Dutch, German, Icelandic, Mainland Scandinavian, and many other languages, 3rd person pronominals cannot be locally bound. In both (3a) and (3b) <Jan, *zich*> and <Jan, *hem*> are chains. *Hem* is fully specified for phi-features, namely 3rd *person*, *masculine*, *singular*, and it is in a position of structural Case. As a consequence, the chain <Jan, *hem*> violates the chain condition. *Zich* is only specified for 3rd person; it is incompatible with 1st or 2nd person antecedents, but fully compatible with feminine, masculine and neuter, and with singular and plural antecedents. Thus, *zich* is not fully specified for phi-features and the chain <Jan, *zich*> obeys the chain condition.

The chain condition facts can typically be assessed in configurations where conditions on reflexivity are satisfied as in \**Jan waste hem* with intrinsically reflexive *wassen* or \**Jan voelde [hem wegglijden]* ‘John felt SE slip away’, where *Jan* and *zich* are not co-arguments.

In the form in which it is presented here, the chain condition is essentially a descriptive generalization over representations. On a more general level, one would like to know why it holds. As a first step it is important to find out which factors enter into determining +/–R status. Hence we turn to some of the puzzling facts: locally bound pronominals, and set out to understand in what respects they differ from pronominals that cannot be locally bound.

### 2.2.1. *Locally bound pronominals*

As noted above, in many languages, 1st and 2nd person pronominals can be locally bound, unlike 3rd person pronominals. Benveniste (1966) showed that their feature specifications differ in two respects: specification for person and specification for number. He argued that what is usually called “3rd person” is in fact absence of person (non-person).<sup>8</sup> For his argument the number property is the key. Consider 3rd *person/non-person* elements. A plural noun such as *dogs* stands for a plurality of elements meeting the dog-criterion; a plural pronoun such as *they* can stand for a plurality of elements meeting the criteria for being a he, she or it. This is different for 1st and 2nd person. In 1st person, *we* is not marked for plural in that sense: *we* is not a plurality of *I*s. Rather it is inherently plural. In the 2nd person, plural *you* does not necessarily stand for a plurality of addressees (you can be talking to one person using plural you, including the people that are part of the addressee’s “group”). So, the nature of “number” in 1st and 2nd person pronominals differs from that in 3rd person pronominals; only the latter show a *grammatical number* contrast, that is, changing the number only affects plurality versus singularity.<sup>9</sup> Therefore, if, for the number property, carrying a *full specification for phi-features* is narrowed down to the requirement of “being specified for grammatical number”, local binding of 1st and 2nd person pronouns does not violate the chain condition.

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8. Apart from the arguments in the text, on a more intuitive basis one can observe that a “3rd person” is not a participant in the speech event on the same footing as speaker and addressee. I thank Anne Zribi-Hertz (p.c.) for bringing to my attention that J.C. Milner, presumably in his 1982 *Ordres et raisons de langue*, proposed that, in contrast to *he*-type pronominals, SE-type anaphors are genuine 3rd person. (See Reuland 2000 for a similar conclusion).

9. If 3rd person is a non-person this requires some technical revision of the description of agreement; the same holds true for the contrast between inherent number and grammatical number.

The case of Frisian<sup>10</sup> *him* is different again. *Him* is also clearly a pronominal. Its number specification is that of a standard 3rd person pronominal as well. However, Hoekstra (1994) and Reuland and Reinhart (1995) show that Frisian *him* is different in another dimension. The Frisian Case system shows a residue of an inherent case paradigm that is absent in Dutch. The pronominals that can be locally bound are not sensitive to the inherent/structural distinction, the ones that cannot be locally bound are. Thus, the class of pronominals that can be locally bound have a less than full specification for structural Case. Again, this entails that local binding of *him* does not violate the chain condition as given.<sup>11</sup>

Technically, thus, this version of the chain condition yields the right results for both 1st and 2nd person pronominals cross-linguistically and for 3rd person pronominals such as Frisian *him*. They demonstrably differ from 3rd person pronominals in Dutch, English, etc., and they can be locally bound. However, saying that they are –R would be too quick, since they do behave as +R elements in other respects. This indicates that we should rethink what the chain condition exactly implies for the *interpretation* of the +R property. However, irrespective of the outcome, it is valid to conclude that any typology of anaphoric expressions should take into consideration that:

- The binding possibilities of pronominals are determined by their inherent feature composition.
- The possibility to be locally bound is not a diagnostic for *being an anaphor*.

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10. The dialect I am basing myself on is West Frisian, as it is spoken in the Dutch province of Fryslân. West-Frisian being the majority dialect, it is often referred to as just “Frisian”, a usage that I will be following here.

11. As discussed in Reuland and Reinhart (1995) in this respect, Frisian is not unique. As Keller (1961, 1987) observes, in a number of German dialects one finds differences in the distribution of locally bound pronominals versus *sich* that reflect differences in the Case assigned to that position. The editors raise an interesting issue about this argument. As they note, the distribution of the Frisian pronoun is (at least) partly determined by the non-availability of a SE-anaphor as a paradigmatic alternative. Hence, they wonder, why is the Case argument necessary? Its relevance becomes clear from the discussion in the last paragraph of Section 2.6.1. In my view the Case argument contributes to an understanding of why Frisian in the period under discussion did not develop a SE-anaphor. If the absence of a paradigmatic alternative were the only reason, one might wonder why Frisian locally bound *him* was not swept away under the pressure of neighboring Dutch *zich*, just like what happened in many Dutch dialects to locally bound *hem* in the 16<sup>th</sup> and 17<sup>th</sup> centuries under the influence of German *sich*. The full story is then, that due to the Case deficiency there was no benefit in replacing locally bound *him* by a SE-anaphor in the system, hence *him* could stay.

Note that as always, it is important to distinguish between pre-theoretical and theoretical notions. No doubt, the study of anaphors was initially triggered by the observation that certain elements appear to require a local antecedent and others do not. The *prima facie* complementarity between elements requiring a local antecedent and elements not allowing it, then naturally led to postulating a dichotomy between anaphors and pronominals. The facts surveyed show that this dichotomy is untenable, and the anaphor-pronoun distinction as it was originally conceived should go with it.<sup>12</sup>

One may still wonder whether there is any independent criterion for being an anaphor that is valid in view of the facts discussed. For instance, the following possibility comes to mind:

- Anaphors are referentially defective NPs, which entails that they cannot be used as demonstratives, referring to some entity in the world (Reinhart and Reuland 1993: 658).

This criterion would rule out Frisian *him* as an anaphor, since clearly, it can be used demonstratively. If one can somehow prevent this criterion from classifying Romance pronominal clitics as anaphors, it could indeed serve as a useful reconstruction. Note, however, that whether or not we can find an independent criterion for being an anaphor is not crucial for our investigation of binding. It is only crucial whether we have an independent criterion for binding, and whether we can obtain independent explanations for the binding restrictions we find.

### 2.3. The status of syntactic indexing

In recent years the relation between syntactic and semantic structure has been reassessed. In a strict conception of syntactic structure (as in the minimalist program, Chomsky 1995 and subsequent work, but not restricted to that), syntax is conceived as a combinatorial system of objects from a strictly morphosyntactic vocabulary. Indices have no status in such a system, since they never have any morphosyntactic realizations. In so far as they annotate real relations these should be reassessed and stated in either proper syntactic or proper semantic terms. Chomsky (1995) concluded that binding is an interface phenomenon.

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12. It is perhaps important to stress that the discussion of Frisian involves the chain condition. It does by no means imply that all “unexpectedly bound” pronominals are deficient for structural Case. For instance, in PPs one language may allow chain formation or the formation of reflexive predicates across a PP boundary whereas another may not (one would expect this to be associated with the general syntactic relation between PP and V in that language. For some discussion of the contrast between French and Dutch see Reuland (2006).

However, as Reuland (2001) shows, at least some aspects of binding must be syntactic, since it is sensitive to syntactic properties such as Case and locality.

This leads to the following *Program* for the investigation of binding:

- i. Provide an independent definition of “binding”.
- ii. Investigate binding possibilities of elements in terms of
  - A) their intrinsic feature content (only features that are independently motivated, such as *person*, *number*, *gender*, etc., not: +/- anaphor, +/- pronominal, etc.)
  - B) their internal structure (pronominal, additional morphemes)
  - C) the interaction of these elements with the linguistic environment (semantic and syntactic) as it is driven by their features.

#### 2.4. Binding in Logical Syntax

An independent definition of A-binding is provided in Reinhart (2000). I will adopt it without further argumentation:

- (4) A-binding (logical-syntax based definition)<sup>13</sup>  
 $\alpha$  A-binds  $\beta$  iff  $\alpha$  is the sister of a  $\lambda$ -predicate whose operator binds  $\beta$

This definition of binding covers both local and non-local binding, involving “pronominals” and “anaphors”, as in (5):<sup>14</sup>

- (5) a. *No one* even asked *himself* **who** would be happy after **his/his** dream girl married **him/him**.  
 b. No one ( $\lambda x$  ( $x$  asked  $x$  [ $\text{who } (\lambda y$  ( $y$  would be happy after  $x$ 's dream girl married  $x$ )])))  
 c. No one ( $\lambda x$  ( $x$  asked  $x$  [ $\text{who } (\lambda y$  ( $y$  would be happy after  $y$ 's dream girl married  $y$ )])))

Thus, in (5b) *no one* binds *himself* since *no one* is the sister of the  $\lambda$ -predicate  $\lambda x$  ( $x$  asked  $x$  ...) whose operator binds the occurrence of the variable  $x$  into which *himself* has been translated. Similarly, *no one* also binds the other occurrences of  $x$  in (5b); and again, derivatively we can say that *no one* binds *his* and *him*.

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13. One may conceive of “logical syntax” as an intermediate regimented representation of linguistic structure arising as a result of the translation/interpretation procedures applying to expressions of narrow syntax.

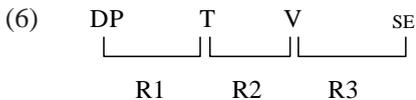
14. For sake of concreteness one may assume that expressions such as (5b,c) derive from syntactic representations by applying QR to DP in [DP ...] yielding DP ( $\lambda x(x \dots)$ ) and translating pronouns and simplex anaphors as variables, that are bound by selecting the appropriate alphabetical variant.

Note that there is no reason to think that binding of *him* and *his* in these cases is encoded in narrow syntax; this will be discussed in the next section. The binding of *himself* is one of the main topics of this article, and will be discussed in Section 3.

Any form of “syntactic” binding is derivative of this core notion. Note that this definition by itself does not set apart “reflexive binding” from other instances of binding. The notion of binding itself “does not care”. This is notwithstanding the fact that the interpretation of the forms that are generally referred to as “reflexives” may not always involve binding. For instance, one may wonder if *himself* in *John behaved himself*, represents a variable in logical syntax. If it does not, *John* does not bind *himself* in the sense indicated. This question has a number of ramifications. Note, for instance, that other languages use verbal markings that are never used as arguments (for example, the *-n* suffix in Sakha, see below), and hence do not involve binding. I will come back to this issue in Section 2.7. Let us first consider the role of morpho-syntax in some more detail.

## 2.5. Binding and morpho-syntax

Reuland (2001) shows that there is a non-trivial syntactic residue in binding, and develops a derivational procedure that captures this residue purely mechanically without the use of indices. For current purposes an informal version of the procedure suffices. The procedure encodes binding relations using syntactic dependencies that exist independently. It is outlined in (6), with R1 standing for the syntactic relation that holds between subject and finite verb (Agreement, Nominative Case), R2 for the relation between the elements of the verbal complex (Tense, Agreement, Main Verb) and R3 for structural accusative Case checking:



The dependencies these relations reflect can be composed. Composing R1, R2 and R3 yields a composite dependency (DP, SE) (effectively, a syntactic chain). Thus, a syntactic dependency can be formed between *Jan* and *zich* in (7a), which is interpreted as a binding relation in logical syntax. For reasons sketched in Section 2.6. no syntactic dependency can be formed between *Jan* and *hem* in (7b).

(7) Dutch

- a. **Jan** voelde [**zich** wegglijden] ‘John felt himself slide away.’  
 b. **Jan** voelde [**hem** wegglijden] ‘John felt him slide away.’

The notion of a dependency formed in accordance with (6) replaces the notion of a dependency formed by co-indexing. Consequently, the chain condition must be derived from principles of chain composition. As shown in Reuland (2001) feature specifications provide the key to what elements can be linked up to a chain as in (6).

In the next section I will discuss some further issues around feature specification. For our concerns in the present paragraph it suffices to say that the syntactic encoding of a dependency between SE-anaphors and their antecedents will be interpreted as binding as defined in (4) (with one type of exception to be discussed). Hence, the following parameter should enter our typology of interpretive dependencies:

(8)  $\pm$  syntactically encoded

The typical case of syntactic encoding is the relation between *zich* and its antecedent as in (7a), a typical case of a binding relation that is not syntactically encoded is the binding of *him* by *no one* in (5).<sup>15</sup>

## 2.6. An intermezzo: Chain formation and underspecification

The chain condition as stated above (“A maximal A-chain  $(\alpha_1, \dots, \alpha_n)$  contains exactly one link –  $\alpha_1$  – which is +R”) covers a substantial array of facts. As indicated in the previous section, the fact that it makes use of indices requires us to reassess it. In this section I will discuss to what extent it can be derived from more basic properties of the grammar. Deriving the chain condition reduces to answering the following two questions:

- (9) a. What prevents a locally bound interpretation if a pronoun cannot be linked up to a chain?  
 b. What factors determine whether pronouns will be linked up to a chain?

The answer to (9a) is perhaps surprising. No independent principle prevents this as such. If a language has no SE-anaphor, nothing said so far in the reconstruction of the chain condition prevents a locally bound pronominal (unless reflexivity

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15. For a complete overview I would also have to discuss long-distance binding of Dutch *zich* and its cognates in Scandinavian and binding into PPs. Since these issues are not immediately germane to our present concerns I refer to Reinhart and Reuland (1991) and Reuland (2005a) for discussion of the former issue and to Reuland (2001) and Reuland (2006) for discussion of the latter (including the issues raised by the French facts about binding into PPs discussed in Zribi-Hertz 1989).

conditions are violated). As shown in Reuland (2001), this side of the chain condition reduces to economy: encoding a dependency in narrow syntax is more economical than expressing it in the interpretive system.<sup>16</sup> Hence, where the possibility exists, the route via narrow syntax is chosen. So, local binding of the pronominal is blocked by economy, but only if the lexicon offers a choice between a pronominal and a SE-anaphor. The effect is similar to blocking in morphology. For instance, in (7), which expresses the choice between *zich* and *hem*, the availability of (7a) to express the dependency blocks the possibility of accessing (7b).

This puts Frisian, and similar languages, in a somewhat different light than our previous discussion suggested. The absence of a SE-anaphor is enough to license local binding of the pronominal in logical syntax (though not in syntax proper). I come back to the role of Case below.

For (9b) the key notion is full specification, but the notion of specification reflects a quite complex reality. An extensive discussion would lead us beyond the scope of this article, but, since the notion of underspecification as it has been used in the literature (including, for instance, Reuland and Reinhart 1995) requires some clarification in order to avoid misunderstandings, some brief comments are warranted.

### 2.6.1. *Differences in specification for morpho-syntactic features*

As is well-known, in languages with rich morphology the number of different forms in (part of) a paradigm is often less than the number of distinctions the paradigm represents. For instance, Czech is a language with a rich Case system (seven Cases including vocative). In the feminine singular *a*-declension, these seven cases are distributed over six different forms.<sup>17</sup> In the feminine singular declension of adjectives ending in a hard consonant there are only four different forms for the seven Cases, but in the feminine singular declension of adjectives ending in a palatalised consonant, as in *poslední* ‘last’, there is only one form; for all cases these adjectives end in a long *-í*. In some sense, therefore, the morpheme *-í* appears to be underspecified.

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16. See also Reuland (2003) and the references cited there for evidence that the human processor treats various ways of encoding dependencies differently. More general evidence for a distinction between early automatic morpho-syntactic processes and later semantic and syntactic processes is provided by Friederici and her co-workers in the MPI Leipzig; see, for instance, Friederici (2002).

17. Dative Case and Prepositional Case are represented by one form; in fact, in no singular nominal declension are they distinguished, but in the plural they systematically are.

In English we find such idiosyncrasies as well. For instance, the form *deer* serves both as singular and as plural. Similarly, the pronominal *he* in *he admired the deer* carries specifications for 3rd person, masculine, singular, and nominative. It contrasts with 1st and 2nd person pronouns, with 3rd person singular feminine and neuter forms, with the plural form *they*, and with the object form *him*. *He* and its Dutch cognate *hij* are taken to be fully specified. In this, it differs from the neuter form *it* and its Dutch cognate form *het*. These do not distinguish a nominative form and an object form. In Dutch, the feminine singular weak pronominal *ze* is not formally different from the plural weak common gender pronominal *ze*. Here too, therefore, we have some form of underspecification.

In this, they seem *prima facie* similar to the SE-anaphor *zich* in Dutch and its cognates in other Germanic languages. *Zich* does not care whether it has a masculine, feminine, neuter, singular or plural antecedent. Since those factors generally do enter into the conditions on antecedency it follows that *zich* must minimally be *non-distinct* from all these possible antecedents. That is, it cannot be fully specified for the values  $\langle \alpha \text{ gender}, \beta \text{ number} \rangle$ . Yet, *ze*, *het*, *it* cannot be locally bound, and *zich* can. We must, therefore, distinguish the type of underspecification in *deer*, *ze*, *poslední*, etc., from what obtains in *zich*. That is, we must distinguish *syncretism* from other ways in which values can be underspecified.

Baerman, Brown and Corbett (2002) base the identification of *syncretism* on the comparison of the actual repertory of inflected forms in a language with an idealized underlying morphosyntactic paradigm.<sup>18</sup> For example, if verbs in a language are determined to bear the features ‘person’ (with the values ‘first’, ‘second’ and ‘third’) and ‘number’ (with values ‘singular’, ‘dual’ and ‘plural’), these multiply out into a paradigmatic grid with nine cells:

(10) Paradigmatic grid (Baerman, Brown and Corbett 2002)

1sg	1du	1pl
2sg	2du	2pl
3sg	3du	3pl

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18. Their general instruction for generating the morphosyntactic paradigm is as follows: (i) for any language, establish the morphosyntactic features (e.g. number) and their values (e.g. singular, plural) which are correlated with some distinct inflectional behavior; (ii) for each distinct word class within a language, establish which morphosyntactic features are in operation; and (iii) project all the logically possible feature value combinations to produce the underlying morphosyntactic paradigm.

They construe *syncretism* as the correspondence of a single inflected word form to two or more morphosyntactic descriptions; i.e. a single form occupies two or more cells in the underlying morphosyntactic paradigm. Crucially, in the case of syncretism, the values are underlyingly there.

Languages also differ in the paradigmatic distinctions they encode at all. Harley and Ritter (2002) propose a universal geometric analysis of cross-linguistic feature patterns. As they note, the absence of a contrast within the paradigmatic grid of one language (for instance the absence of a formal contrast between 2du and 2pl for a certain verb class) must be distinguished from the overall absence of a contrast (for instance, dual/plural) in a group of languages. If a contrast that is provided by universal grammar is systematically absent in a particular language this is *conflation* rather than *syncretism*. A further instance of what may be seen as underspecification is *impoverishment* (Bonet 1991; Frampton 2002). Impoverishment occurs if a certain contrast is realized in one part of a paradigm and systematically absent in another. For instance, in Dutch plural verb forms, person contrasts are systematically absent. This, then, represents impoverishment rather than conflation or syncretism.

Although these distinctions are important, neither impoverishment, nor conflation, nor syncretism captures what distinguishes *zich* from other cases of underspecification.<sup>19</sup>

Current theory provides one more dimension of possible variation, namely being valued or unvalued. In terms of a paradigmatic grid, both conflation and impoverishment affect the number of cells (and what they underlyingly contain); syncretism affects the relation between forms and cells; presence or absence of

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19. Note that these issues notwithstanding, the chain condition as stated, technically works for *it*, just as for *him*, ruling out local binding. The distribution of pronominal forms, and of overt versus null arguments in English warrants that English has a rudimentary Case system. That is, minimally it must have structural Case, which participates in the syntactic computations involving argument linking, as in Chomsky (1981) and subsequent work. Thus, *deer* in *deer are running around* is marked for structural Case, checked/assigned by the Tense/agreement system, and *the deer* in *I admired the deer* is marked for structural Case checked/assigned by the Tense/Agreement/V-system. A pronominal such as English *he* in *he admired the deer* is specified as 3rd person, masculine, singular, and nominative (=structural) Case. Its neuter counterpart *it* is also fully specified, namely as 3rd person, neuter, and singular. It shows a number contrast with *they*, just like *he*. Like any English DP it will be marked for structural Case if it is in subject or object position. Thus, *it* meets the requirements of being +R in the sense of the chain condition, that is, it cannot tail a chain. The issues raised come up only if one sets out to derive the chain condition from more fundamental principles.

valuation affects the contents of cells. If an element is unvalued for certain features, the cells are there, but lack content.

This connects the present discussion to the theory of valuation outlined in Chomsky (2001, 2004) and Pesetsky and Torrego (2004). In this approach having unvalued features is what makes an element visible for syntactic computation. Unvalued features are valued by the Agree operation (subject to the standard conditions on chain formation of *c*-command and locality) with an element that is valued for these features. So, with *zich* being unvalued for number and gender, Agree will specify it for these features. Thus, entering a chain and becoming valued is the result of an elementary, blind grammatical process.<sup>20</sup>

(6) in Section 2.5 shows how syntactic encoding of binding relations is based on composition of syntactic dependencies. Establishing the relation R3 linking the object to the Verb/Tense/Agreement complex is the initial step. R3 is defined as structural Case checking; this entails that bearing structural Case is a necessary condition for entering a syntactic chain (which explains the role of structural case in the original formulation of the Chain condition). Structural Case is checked via the inflectional system in the verbal projection.<sup>21</sup>

In addition to structural Case, arguments may be licensed by “inherent Case”. Inherent Case is a subtype of selected/oblique Case.<sup>22</sup> In GB terms, the element licensing the inherent Case of  $\alpha$  must be the same element that assigns a theta-role to  $\alpha$ . I will refrain from discussing how precisely inherent Case is licensed. Let us assume the essential mechanism is that of selection. For current purposes all that is needed is that inherent Case is not checked via the inflectional system. Since only structural Case is checked via the inflectional system, “no structural Case checking” effectively means “no chain”, hence no role for economy.<sup>23</sup> This entails that the Case system with its properties is one of the variables we have

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20. This connection has many interesting ramifications that it would take me too far to discuss here. See Reuland (2005a) for discussion.

21. This is the view taken in minimalist approaches to syntax (see Chomsky 1995, Reuland 2001). Hence, operations that truncate the inflectional structure, such as nominalization, eliminate both nominative and accusative.

22. The traditional distinction between *Casus Recti* and *Casus Obliqui* roughly corresponds with the distinction between *structural* and *inherent* Case as it is used here.

23. Note that “no chain” does not entail “no binding”. It only entails: no encoding of the binding relation in narrow syntax. This distinction is crucial for evaluating this approach when applied to other languages. No language carries its analysis on its sleeve. The existence of a binding relation between  $\alpha$  and  $\beta$ , where  $\beta$  is fully specified for phi-features only bears on the chain condition if there are relations  $R_i$  such that  $\alpha R_1 \bullet R_2 \bullet R_3 \dots R_n \bullet \beta$  (where  $\bullet$  stands for the composition operation).

to take into account when addressing cross-linguistic variation and patterns of diachronic change.<sup>24</sup>

The effects of Case are subtle, though. Note that languages need not always use the “universally” cheapest possible strategy to encode dependencies. If a language lacks a SE-anaphor, local binding can take place without chain formation, regardless of Case. However, assuming that economy does exert some diachronic pressure, one may expect such a system to be unstable, and move (in the long run) towards a system with a SE-anaphor that allows syntactic encoding (assuming some form of grammaticalization to be active). Let us briefly consider two potential cases.

Suppose we have a language that lost most or even all morphological distinctions within the structural system and the formal distinctions within the inherent Case system without losing the difference between the two modes of Case licensing *per se*. That is, we have Case syncretism in the sense discussed above. If so, little of any consequence should follow. An element  $\alpha$  may appear in direct object position in a form that is homophonous with the form it assumes in a position of inherent Case licensing, but nevertheless one will see competition effects on  $\alpha$  as a direct object, if  $\alpha$  as a pronominal has a SE competitor.

However, consider a slight twist in the licensing:  $\alpha$  is also licensed by the inherent strategy when it appears in direct object position. If so, we can say that  $\alpha$  is not marked (= lacks a cell) for structural Case. But this implies that  $\alpha$  cannot be linked up to the Tense/Agreement/Verb complex by the process in (6), and chain formation is not available as an encoding strategy for  $\alpha$ 's dependency in that language. Therefore there is no potential competition between  $\alpha$  as SE or  $\alpha$  as a pronominal. Recall, that the competition is not between SE-anaphors and pronominals as such, but between encoding in syntax proper or beyond. So, diachronically there would be no pressure on such a system to develop a SE-anaphor if it lacked one, or to retain it if it had one.<sup>25</sup>

Given the mechanisms involved there can be no complete correspondence between the absence of structural Case in a certain position (in a certain language) and local binding of pronominals, but cross-linguistically one does expect to find a positive correlation.

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24. See van Gelderen (2000) for an illuminating discussion of the relation between Case and reflexives in the history of English.

25. So, the loss of the SE-anaphor in the early stages of Old English is expected to be related to changes in the Case system.

### 2.6.2. Morpho-syntactic features and chain formation

A basic question arising in the present context is why the binding of pronominals cannot be syntactically encoded. The brief answer could be that by assumption they have no unvalued features, hence are not visible to the syntactic computations. Yet a bit more must be said, since they may carry a Case feature, which in the view of Chomsky (2001, 2004) and Pesetsky and Torrego (2004) is unvalued. If so, the question comes up why this is not sufficient to enable them to enter a chain with their antecedent. In Reuland (2001) it is argued that what ultimately prevents them from entering a chain is grammatical number.

Forming a syntactic chain in the sense envisaged here implies forming one syntactic object from two (or more) others.<sup>26</sup> It is a general condition on syntactic operations that they may not lead to loss of lexical information, the *principle of recoverability of deletions*.<sup>27</sup> This entails that if  $\beta$  is linked up to a chain headed by  $\alpha$ ,  $\beta$  may only contain features that are non-distinct from the features of  $\alpha$ . In particular,  $\beta$  may not contain any feature  $f$  such that  $f$  in  $\beta$  could be interpreted differently from  $f$  in  $\alpha$ . What does this imply for number? In a sentence such as *men were betraying men and women were betraying women* all four occurrences of the plural on the arguments may have different values, specifically the number of men betraying may well be different from the number of men betrayed. Consequently, in general different occurrences of a number feature, even if they have the same value (singular or plural) cannot be replaced by each other. Hence, the presence of grammatical number on a pronoun will block *chain formation*. Elements like *hem* ‘him’ or *hen* ‘them’ are valued for grammatical number, hence they cannot be linked up to a chain. *Zich* is not valued for grammatical number, hence entering a chain is allowed.<sup>28</sup>

As has been mentioned in Section 2.6.1, there is a contrast between 3rd person number (whether pronominal or lexical) and number in the other persons. Per reportive domain, uses of 1st person pronominals with the same number specification are interchangeable: *us* cannot pick out different sets of individuals at different occurrences in such domains. Hence, forming a  $\langle wij, ons \rangle$  (‘we’, ‘us’) or  $\langle ik, mij \rangle$  (‘I’, ‘me’) chain does not violate the principle of recoverability

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26. This view of chains raises interesting questions from the perspective of the copy-theory of movement. Time and space prevent me from discussing this issue here.

27. This principle forbids, for instance, deriving *John ate* from *John ate an apple* by deleting *an apple*.

28. Postma (2004) shows that in a 15th century Dutch dialect whose historical development could be traced over a period of more than a century, the rise of *zich* goes together with the development of a number contrast in the pronominal it supplants in reflexive contexts.

of deletions. The interpretation of 2nd person appears to be kept constant within each reportive domain as well. Therefore  $\langle jullie, jullie \rangle$  ('you', 'you') is also allowed as a chain. Note that this requires no stipulation. The facts just follow from general conditions on chain formation.<sup>29</sup>

Having clarified the basic issues in the encoding of binding dependencies, we can continue with the main line of the discussion.

## 2.7. Binding and reflexives

Keenan (1987) develops an approach to reflexives that looks rather different from what has become a standard view in syntactic approaches to binding. Keenan argues that SELF is an operator on the predicate that turns a transitive predicate into an intransitive one. The reflexive marker is then an operator which applies to a two-place predicate R (=a relation between atomic entities) and generates a one-place predicate over sets A of atomic entities. So, we may formalize the interpretation of *themselves* in (11a) as shown in (11b):

- (11) a. *The girls admire themselves.*  
 b. REFL :=  $\lambda R. \lambda A. \forall x \in A [R(x,x)]$

Note that the argument variables of R are bound by the  $\forall$ -operator, and there is no sense in which *the girls* binds *themselves*. Clearly, it is an empirical matter whether a formalization along those lines sufficiently captures the properties of reflexives. At any rate, (11b) certainly constitutes a logical possibility, and for those cases where (11b) is warranted it makes little sense to let the interpretation of reflexives fall under the heading of "binding" as defined in (4).<sup>30</sup>

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29. One may wonder why Dutch allows *Wij wassen ons*, whereas English does not allow \**We wash us*. As we saw, this cannot be a property of chain formation. As we will see in some more detail below, both English and Dutch have a lexical operation of reflexivization (argument reduction). In English this operation eliminates the case assigning properties of the verb, yielding *I washed, . . . , They washed* as its outcome. If the operation applies, there is no Case for *me* in *I washed me*, hence under standard assumptions it is ungrammatical. If the operation does not apply, reflexivity must be licensed, requiring *myself* (see below for discussion). Note that in very restricted contexts (free datives), local binding of *me* is possible: *I bought me a book*.

30. Note that the semantic perspective on binding sketched does not by itself preclude annotating certain dependencies in the syntax, for instance by co-indexing. That is, we could define the interpretation of the co-indexing in (i) as (11b):

(i) The girls<sub>i</sub> admire themselves<sub>i</sub>.

Consequently, nothing precludes defining the syntactic predicate in (i) as reflexive, in terms of the co-indexing between its arguments, and consistent with its interpretation.

In fact, as noted above, there are cases in natural language where a predicate is interpreted reflexively without the presence of a corresponding argument anaphor. In English we have cases such as (12a), we have (12b) in Sakha (a Turkic language spoken in eastern Siberia, see Vinokurova 2005 for a detailed analysis), in Modern Greek we have (12c) and in Hebrew (12d), to mention just a few pertinent examples.

- (12) a. English  
*The children washed.*
- b. Sakha (Vinokurova 2005: 325)  
*Sardaana suu-n-na.*  
 Sardaana wash-REFL-PAST.3  
 ‘Sardaana washed.’
- c. Modern Greek (Papangeli 2004: 46)  
*O Yanis pli-thi-k-e.*  
 DET Yanis wash-REFL-PRF-3SG
- d. Hebrew (Reinhart and Siloni 2005: 390)  
*Dan hitraxec.*  
 Dan washed(*hitpa’el*)

Thus, a reflexive interpretation may arise without argument binding in any strict sense. Reinhart (2002) and Reinhart and Siloni (2005) develop a theory of operations on argument structure (cf. also Siloni this volume). Among these operations are Passive, Middle formation, (De)causativization and *Reflexivization*. Technically, reflexivization is represented as an operation of valence reduction on a 2-place relation, leading to the formation of a complex theta-role, as for instance, in (13b). The internal argument is *reduced* (eliminated), hence the relation reduces to a property:

- (13) *Reduction of an internal role – Reflexivization*
- a.  $V_{acc}(\theta_1, \theta_2) \rightarrow \underline{R_s(V)}(\theta_1 - \theta_2)$
- b.  $V[Agent]_1 [Theme]_2 \rightarrow V[Agent-Theme]_1$

Valence reduction also affects the Case assigning properties of the predicate. Reflexivization is parameterized in two respects:

- Languages vary as to whether valence reduction also eliminates the accusative (e.g. English, Hebrew), or leaves a Case residue that still has to be checked (e.g. Dutch, Frisian, Norwegian)

- Languages vary as to whether reflexivization applies in the lexicon or in the syntax.
  - Lexicon:  $V[\text{Agent}]_1 [\text{Theme}]_2 \rightarrow V[\text{Agent-Theme}]_1$
  - Syntax: Upon merge of an external argument, a stored unassigned  $\theta$ -role must be discharged:  $[\theta_i]_1 + [\theta_k]$ .
- Hebrew, English, and Dutch, among others have valence reduction in the lexicon; the element *zich* in *Jan wast zich* is only there to check the residual case left by the reduction operation.<sup>31</sup>
- French, German, Italian, Serbo-Croatian, etc., have “bundling” in the syntax. “Reflexive clitics” such as *se*, *sich*, enforce the bundling operation.<sup>32</sup>

The upshot of these considerations is that we can have “*Reflexivity*” without “*binding*”. Neither “reflexive” *zich*, nor the “reflexive” clitics occur here as “anaphors” that are bound in the relevant logical syntax sense.<sup>33</sup>

### Restrictions on valence reduction

In languages such as English and Dutch not all verbs allow a lexical reduction operation. This is illustrated in (14):

- (14)
- a. \**John hates = John hates himself*
  - b. \**John knows = John knows himself*
  - c. \**Jan haat zich = Jan hates himself*
  - d. \**Jan kent zich = Jan knows himself*

- 
31. Note that from this perspective, *zich* is a marker of reflexivity only in a very special sense. It witnesses that a reflexivization operation has taken place, but, as discussed above, it does not itself reflexivize a predicate.
32. Reuland and Reinhart (1995) argue that German *sich* is in fact ambiguous between a tonic form and a weak form. The tonic form occurs with canonical transitive verbs and can be fronted (“topicalized”), as in *Sich hasst er nicht* ‘himself he does not hate’; the weak form occurs with intrinsic reflexive verbs, middles, etc. and cannot be fronted, witness \**Sich schämt er nicht*. They argue that the tonic form has the internal structure of a full DP and is effectively a complex reflexive (like Dutch *zichzelf*), whereas the weak form is a simplex reflexive (comparable to Dutch *zich*). Gast and Haas (this volume) give independent evidence that two types of *sich* must be distinguished, indicating that the line set out in Reuland and Reinhart (1995) is correct. If so, we have an explanation for the fact that a class of verbs that may resist reflexivization by mere bundling even in syntax languages such as Italian and Serbo-Croatian, and prefer a complex reflexive, are nevertheless acceptable with *sich* in German.
33. Again the fact that they are in some sense dependent on their antecedents can be syntactically annotated by co-indexing, allowing one to define a syntactic notion of reflexivity if useful.

Actually, such restrictions on reduction operations can be found in many languages. In Modern Greek, for instance, (15) is impossible on the intended reading as well:

(15) Modern Greek (see Papangeli 2004: 58)

\**O Yannis jnorizete.*  
 DET Yannis knows  
 int.: ‘Yannis knows himself.’

In Sakha certain verbs either do not allow marking with -n- at all (*iteqej* ‘believe’) or do not receive a reflexive interpretation if they are so marked (*bil* ‘know’; +-n → *bilin* ‘know-REFL’ = ‘admit’). Rather, in these languages verbs of this type require marking with an argumental “anaphoric expression”, (*to eafto* <*pron*<sub>GEN</sub>> in Modern Greek, *beje* <*pron*> in Sakha). Of course, in Dutch, Icelandic, Norwegian, etc., we have expressions such as *zichzelf*, *sjalfan sig*, *seg selv*, etc. for explicit marking of reflexivity.

I will refrain from discussing why certain verbs, but not others, resist reflexivization by reduction (except from noting that cross-linguistically there appears to be a significant overlap between the classes of verbs that resist this, just like there is a significant overlap between the verb classes allowing it, such as grooming verbs). The point is that some do resist. This brings us to the point of why natural language resorts to reduction at all.

## 2.8. Why is reflexivity marked?

Reuland (2001) raises the point of why cross-linguistically binding of a direct object pronoun of a standard transitive verb by its local subject appears to be blocked, where *pronoun* stands for an expression solely consisting of phi-features (person, gender, number), thus for *hem* ‘him’, *zich*, etc., but not *zichzelf*. (Binding is indicated by bold face type.)

- (16) a. *DP V Pronoun*  
 b. Dutch  
 \***Jan** *haat* **zich**.  
 John hates SE  
 (where <*John*, *zich*> is a chain arising from chain composition)  
 c. Frisian  
 \***Jan** *hatet* **him**.  
 Jan hates him

Let us call reflexivization by simply binding one argument by another as in (16b,c) “brute force reflexivization”. So, why is it ruled out? I claim it is ruled out for entirely general reasons. By assumption Vs such as *haatsje* ‘hate’ in (16) are 2-place predicates that assign different theta-roles to subject and object. But, purely syntactic hierarchy is broken down by the interpretive procedures at the C-I interface (eliminating X’ and equivalents). Translating *DP V pronoun* at the C-I interface involves the steps in (17):

$$(17) \quad \underset{1}{[_{VP} x [v' V x ]]} \rightarrow \underset{2}{([_{VP} V \text{ “}x x\text{”} ])} \rightarrow \underset{3}{*[_{VP} V x]}$$

The second step with the two tokens of *x* in “*x x*” is virtual, however (hence put in parentheses). Although the representation in (17:2) contains two tokens of the variable *x*, these are copies of one object. This is just as in syntactic movement chains in the framework of Chomsky (1995) and subsequent work. In (18), we also have two occurrences of one object.

(18) *John was seen (John).*

But in (17:2) the two tokens of *x* cannot be distinguished, unlike in (18). A standard way of defining the notion of an occurrence is by the environments of the tokens involved: two tokens represent different occurrences iff they have different environments (see e.g. Chomsky 1995), where the environment of a token is the structure in which it occurs minus the token itself. In (18) the two tokens do indeed represent different occurrences. But in (17:2) they do not, as is easily seen. Since hierarchy is not available, everything else being equal the two tokens of *x* in (17:2) could only be distinguished as different occurrences by their order. The question is, is there order in the relevant stage of derivation? It is important to maintain a distinction between properties of the computational system *per se*, and properties expressed by the systems involved in the realization of language. In this view syntax proper only expresses hierarchy, but no order. Order is imposed under realization by spell-out systems. In the absence of order, if hierarchy is lost, the computational system cannot distinguish between the two tokens of *x* in (17) on our mental “scratch paper”, hence they are effectively collapsed.

However, by assumption, the arity of the verb *haten* ‘hate’ itself has not changed. It is still a 2-place predicate, but in (17) it “sees” only one argument. As a consequence, one theta-role cannot be assigned. Under standard assumptions about theta-role discharge a theta-violation ensues. (Alternatively two roles are assigned to the same argument with the same result.) The fact that it leads to such a violation is why “brute force” reflexivization is disallowed.

Logically, there are two ways to have a reflexive interpretation while avoiding “brute force” reflexivization:

- i) apply a lexical or syntactic operation on argument structure;
- ii) keep the two arguments formally distinct.

The first one is effected by the operation on argument structure discussed above. There are many means found across languages that either bring about valence reduction, or check the residual Case. In a structure as (19) Morph ranges over clitics, verbal affixes such as *-n-* in Sakha, *-te* in Modern Greek, *-Kol* in Kannada (Lidz 1995), *-sk* in Icelandic, *sja* in Russian, *zich* in Dutch, etc.:<sup>34</sup>

(19) DP V(-)Morph  $\rightarrow$  Refl

Note that it is not a trivial matter to determine what each of these realizations of the morpheme contributes. As always, a language does not carry its analysis on its sleeve. As soon as one encounters a structure of this form, it requires detailed further investigation to determine what role the morpheme plays; whether the morpheme is just a residual Case checker, is instrumental in encoding the reduction operation itself, or does some other related job. Clearly, a typology of reflexives should be able to capture the various options. Much more could be said, but for the logic of a typology these remarks suffice.

Let us now briefly discuss ii).

### Protecting the variable

To keep the arguments distinct, any embedding of the second argument in a structure that is preserved under translation into logical syntax will do. I will use the term *reflexive-licenser* (or briefly “licenser”) to refer to the morphological elements that are used to achieve this. The general structure is illustrated in (20a) and (20b), a particular instance is *zelf* in *Jan bewondert zichzelf* ‘John admires himself’:

- (20) a. DP V [*Pronoun* Morph]
- b. DP  $\lambda x$  [V(x,[x M])]

Of course, the freedom on the choice and interpretation of M are limited by conditions of use: (20b) should be useable to express a reflexive relation. Thus, if M is interpreted as yielding some function of x, conditions of use restrict what are admissible values. Reuland (2001) puts this as (21):

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34. It is also conceivable that both properties can be unified.

(21) DP ( $\lambda x V(x, f(x))$ )Condition:  $\|f(x)\|$  is sufficiently close to  $\|x\|$  to stand proxy for  $\|x\|$ 

(21) is the proper logical syntax representation of cases where Morph is a Body-part, a Focus marker, an Intensifier, etc. There is a class of languages, varying from Caxur,<sup>35</sup> to Malayalam and Old Syriac, where Morph is morphologically a double of the pronoun. Note that it is important to distinguish the various uses of Morph, and to distinguish its use again from its historical development. For instance, in a range of influential works, König and Siemund (see König and Siemund 2000, and the references given there) have argued that many of the properties of elements such as *self*, *zelf*, *selbst*, etc., follow if they are understood as intensifiers.<sup>36</sup> I see no problem in accepting that in many of their uses SELF-elements act as intensifiers (or markers of contrastive focus). However, by itself this is not sufficient to account for their distribution, nor to answer the question of why SELF-elements are used in reflexives. Under the current approach their use as parts of complex reflexives is explained by the fact that the structure their presence induces protects the variable, and semantically they are perfectly well suited to meet the condition in (21).

Although for Malayalam the doubling element appears to act as a Focus marker (Jayaseelan 1997), in other languages (Caxur, Old Syriac) the way in which Morph enters the semantics has yet to be investigated, but note that a fairly marginal contribution to the semantics suffices.<sup>37</sup> As Schladt (2000) mentions, a language such as Zande realizes the reflexive argument in a PP.<sup>38</sup> If V and P do not syntactically reanalyze this is equally effective.<sup>39</sup>

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35. Also referred to as “Tsakhur”.

36. See for a related line Bergeton (2004).

37. In the case of Caxur the editors remark that the reflexive may well be a focus marker, just like in Malayalam. This notwithstanding, the form of the reflexive is that of a duplicated pronominal  $wu\check{z}_{Case1} wu\check{z}_{Case2}$ , where Case 1 is the case of the antecedent, and Case 2 the local case (Toldova 1996).

38. *Zande*:

(i) *Mě-ímí tě-r'ε*  
 I-kill on-me  
 ‘I kill myself.’

39. In general, the effect of binding into PPs depends on the relation between the PP and the main predicate, see Reinhart and Reuland (1993) for systematic discussion. An issue not discussed there is the effect of cross-linguistic variation in the Verb-Preposition relation. For discussion of an interesting French-Dutch contrast, see Reuland (2006).

(22) DP ( $\lambda x V(x, P(x))$ )

where the theta-role  $\theta_{2'}$  assigned by P is sufficiently close to the theta-role  $\theta_2$  that V would otherwise assign to its internal argument, so that  $\theta_{2'}$  can stand proxy for  $\theta_2$ .

Further variation on this theme is conceivable. Any verbal morpheme that introduces an asymmetry between the two arguments that is retained in logical syntax will have a similar effect.

What the variations on the theme of ii) have in common is that the second argument is always bound by the subject in accordance with the definition of binding in (4). So, the two strategies indeed reflect a fundamental split in their status with respect to binding strictly understood. Given our main question I will now address binding in reciprocal constructions.

## 2.9. Binding and reciprocals

Like in the case of reflexives, the interpretation of reciprocals depends both on a nominal antecedent, and on the predicate they are arguments of. This can be illustrated by the examples in (23) (Dalrymple et al. 1994, 1998; Winter 2001):<sup>40</sup>

Reciprocals in general allow a range of interpretations, two of which are illustrated in (23), with the contrast between them represented in (23ic) versus (23iic):

- (23) i. a. *The girls know each other.*  
 b. *...# but Mary doesn't know Sue.* (Strong Reciprocity)  
 c. *Every girl knows every other girl.*
- ii. a. *The girls are standing on each other.*  
 b. *... but Mary is not standing on Sue.*  
 c. *#Every girl is standing on every other girl.*  
 (Inclusive Alternative Ordering, cf. Dalrymple et al. 1994, 1998)

How are these dependencies represented? (24a) serves as a formalization of Strong Reciprocity (SR) and (24b) for Inclusive Alternative Ordering (IAO). The reciprocal marker is defined as an operator which applies to a two-place predicate R (=a relation between atomic entities) and generates a one-place predicate over sets A of atomic entities:

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40. For an extensive and illuminating discussion of reciprocity see further Dimitriadis (2000, this volume).

- (24) a.  $SR = \lambda R. \lambda A. \forall x \in A \forall y \in A [x \neq y \rightarrow R(x,y)]$   
 b.  $IAO = \lambda R. \lambda A. \forall x \in A \exists y \in A [x \neq y \wedge (R(x,y) \vee R(y,x))]$

For the sake of concreteness we may assume that the dependency on the predicate can be represented in terms of selection: which operator interpreting *each other* does the predicate select?<sup>41</sup> This part, therefore, does not involve A-binding. What about the dependency between *each other* and “its antecedent”?

If we carefully consider (24) we see that (again) there is no logical syntax binding of *each other* by its “antecedent”. What (24) expresses is that just like in the case of certain types of reflexives, *each other* reduces the internal argument, bundles the internal and external theta-roles, and imposes a particular structure on the set that represents the value of the remaining argument. Thus, after the operator has applied to the predicate P the result is (25).

- (25) a. The girls ( $\lambda A. \forall x \in A \forall y \in A [x \neq y \rightarrow P(x,y)]$ ) (SR)  
 b. The girls ( $\lambda A. \forall x \in A \exists y \in A [x \neq y \wedge (P(x,y) \vee P(y,x))]$ ) (IAO)

We have a configuration in which *the girls* is a sister to a  $\lambda$ -predicate, but no variable corresponds to *each-other*. There are variables on which the subject and object theta-roles of the predicates are realized, but these are not bound by *the girls*, but by the quantifiers that are syncategorematically introduced by the translation procedure. Thus, the dependency between *each other* and *the girls* is not represented as an A-binding relation between the reciprocal expression and its antecedent. So, although there is an interpretive dependency between *the girls* and *each other*, from the perspective of the analysis sketched above it makes no sense to say that *the girls* A-binds *each other*.

This is different for the analysis of reciprocity in Heim, Lasnik and May (1991). This analysis is based on a compositional interpretation procedure in which *each* and *other* play distinguishable roles. In their analysis (26b) is the fully semantically determined Logical Form corresponding to (26a). *Each* is semantically defined as a distributor of the subject set. The relation of [<sub>NP</sub> [<sub>NP</sub> *the men*<sub>1</sub>] *each*<sub>2</sub>] to the trace *e*<sub>2</sub> is that of bound variable anaphora. *Other* has its range and contrast arguments supplied by the subject phrase. Sim-

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41. As Alexis Dimitriadis (p.c.) points out, the selection may in fact depend on more than just the verb. For instance, *the children gave each other presents* has weak reciprocity, but *the children gave each other measles* has intermediate alternative reciprocity, since each child can get measles only once. Discussion of such facts would lead us beyond the scope of this contribution. But note that such facts are quite in line with the general point I am making.

plifying, the bare essentials of the logical syntax structure can be given as in (26c), where *other* maps  $x$  onto a value of the subject set different from  $x$ .

- (26) a. *The men saw each other.*  
 b. [<sub>S</sub> [<sub>NP</sub> [<sub>NP</sub> the men<sub>1</sub>] each<sub>2</sub>] [<sub>S</sub> e<sub>2</sub> [<sub>VP</sub> [<sub>NP</sub> e<sub>2</sub> other(1)]<sub>3</sub> [<sub>VP</sub> saw e<sub>3</sub>]]]]]  
 c. [<sub>NP</sub> [<sub>NP</sub> the men<sub>1</sub>] each<sub>2</sub>] ( $\lambda x$  (saw ( $x$ , other ( $x$ ))))

This analysis allows us to reconstruct a notion of binding as defined in (4). I will refrain from discussing semantic reasons for opting for the one or the other approach to reciprocity. But, note that in many cases a compositional analysis cannot be applied. For instance in sentences such as (27) there is neither a distributor, nor a “contrastor”, yet the interpretation is reciprocal:

- (27) English  
 a. *The men met yesterday.*  
 German  
 b. *Die Leute haben sich gestern getroffen.*  
 the people have SE yesterday met  
 ‘The people met yesterday.’

It seems that “direct”, non-compositional, assignment of a reciprocal interpretation as in (24) would most easily fit in with the proposal by Reinhart and Siloni (2005). They focus on cases without explicit reciprocalization. This type of reciprocalization operation is an operation on argument structure subject to the lexicon-syntax parameter; as they show, languages exhibit the same parameter setting for reciprocals as for reflexives. In Hebrew, Russian, and Hungarian reciprocals are formed in the lexicon, while in Romance languages, German and Serbo-Croatian they are formed in the syntax (see also Siloni this volume for further arguments and illuminating discussion). The analysis further covers configurational restrictions on reciprocalization, for instance between reciprocal markers as direct arguments of predicates versus reciprocal markers as arguments within PPs. (See Gast and Haas this volume for highly pertinent discussion of the restrictions on the reciprocal interpretation of *sich* in German). However, for explicit reciprocals such as *each other* a compositional interpretation with *logical syntax binding* seems warranted.

By way of interim conclusion:

Just like reflexivity, reciprocity may arise on the basis of

- a lexical operation,
- a syntactic operator,
- explicit reciprocity marking.

### 3. Revisiting Faltz's typology

As we stated in the beginning, Faltz's typology considers the nature of the reflexive elements, the origin of their composite parts, and the way they are morpho-syntactically connected. Our discussion adds dimensions to this typology that are orthogonal to it. The upshot of Sections 2.6 and 2.7 is that the following dimension should be added to the typology of reflexives:

- $\pm$  operation on argument structure (valence reduction/bundling)

That is, some reflexives affect argument structure (either operating on the argument structure themselves, or taking care of a Case residue), others protect it (in ways that may vary).

There is another dimension of variation as well, more in particular concerning *reflexive licensors*. This dimension is reflected among other things in locality, illustrated by the contrast between English and Malayalam in (28), which does not require local binding of the licensor (Jayaseelan 1997):<sup>42</sup>

(28) Malayalam (Jayaseelan 1997: 191ff.)

- a. *raaman<sub>i</sub> tan-ne<sub>i</sub> \*(tanne) sneehikunnu.*  
 Raman SE-ACC SELF loves  
 'Raman loves him\*(self).'
- b. *raaman<sub>i</sub> wicaariccu [penkuttikal tan-ne<sub>i</sub> tanne*  
 Raman thought girls SE-ACC SELF  
*sneehikkunnu enn?].*  
 love COMP  
 'Raman thought that the girls love himself.'

English

- c. \**Raman<sub>i</sub> thought that the girls love himself<sub>i</sub>.*

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42. Cole, Hermon and Tjung (this volume) discuss the anaphor *awake dheen* in *Peranakan Javanese* which appears to have very similar properties.

Locality is not an absolute property of *self*, even in English, witness the contrast in (29) extensively discussed by Pollard and Sag (1992, 1994), Reinhart and Reuland (1991, 1993) and many authors cited there.

- (29) a. \**Max<sub>i</sub> expected the queen to invite himself<sub>i</sub> for a drink.*  
 b. *Max<sub>i</sub> expected the queen to invite Mary and himself<sub>i</sub> for a drink.*  
 c. *Max<sub>i</sub> expected the queen to invite no one but himself<sub>i</sub> for a drink.*

Reinhart and Reuland (1991) show that the locality of SELF-anaphors in English follows from SELF, being an operator, (covertly) moving onto the governing predicate. This movement is subject to standard syntactic constraints. In (29b) it is prohibited by the coordinate structure constraint, in (29c) being in an adjunct blocks movement. Much work within the current minimalist program assumes that movement is in principle feature driven, but it has been shown that movement may also be driven by economy of interpretation.<sup>43</sup>

As we independently know, *self* can be incorporated into a predicate, as in nominalizations of the type *self-destruction*. As an instance of head movement, incorporation is available in the syntax as well. A possible trigger in (29) is, in fact, economy: encoding a dependency in the narrow syntax is cheaper than encoding it in the interpretive system. Since *invite* is **able** to attract *self* in (29a), economy has the effect that movement automatically takes place, even if this leads to the observed clash.<sup>44</sup> In (29b,c) movement is blocked, hence *himself* is interpreted as an independent argument and exempt from condition A.<sup>45</sup>

Thus, in (30) covert adjunction of SELF to the predicate leads to the representation in (30b).

- (30) a. DP ... [V] [DP PRON [ SELF]]  
 b. DP ... [SELF V] [DP PRON [e]]

43. See Reinhart (1998). In order to avoid issues of terminology, nothing hinges on the term “movement”. It suffices that we have a dependency that is subject to the same constraints that obtain in dislocation-type dependencies.

44. This apparent clash between economy and interpretability can be explicitly represented by the fact that a “cancelled derivation” is still ranked in an economy evaluation (Chomsky 1995). Also in real life decisions are being taken before they are fully evaluated, such as automatically taking a certain turn even if you know a road is blocked.

45. As is well-known, Dutch *zichzelf* does not exhibit this exemption effect. It does show up in 1st and 2nd person, though. As Hellan (1988) showed, the behavior of a complex anaphor follows from the properties of the elements it is composed of. *Zichzelf* differs from *himself* in that its first element is phi-feature deficient (only marked for person, not for gender or number).

In understanding reflexivization it is important to distinguish the following two questions:

- i. Why is a reflexive-licenser needed?
- ii. If the licenser enforces a reflexive interpretation of the predicate, how does it do so?

The first question we effectively answered. As we discussed, syntax must respect arity (requiring either reduction or protection of the internal argument).

The second question has quite a few ramifications. The issue can be put more specifically as follows: *From the morpho-syntactic representation in (30b) it does not yet follow that self marks the predicate as reflexive. So, how is reflexivity enforced?*

First, as is well-known, not all licensers behave the same; for instance, whereas English *self* and Dutch *zelf* can incorporate, French *même* or Italian *stesso* do not allow incorporation. So we do not have \**même-admiration* in French, on the model of Engl. *self-admiration*. Thus, there are cross-linguistic differences between the way the licenser and the predicate interact that should find their way into typology.<sup>46</sup> Irrespective of the way in which specific licensers are to be analyzed, logic dictates that we have at least the following further typological dimension:

- ± (Covert) head movement<sup>47</sup>

However, even syntactic head movement does not by itself explain how reflexivity is enforced. In fact, this is one of the main problems any theory of binding has to address. In exploring possible accounts, I will use the following guiding principles:

- assume only what is independently motivated;
- the properties of reflexive licensers should follow from minimal assumptions about their syntax and semantics;
- no special assumptions should be made about the computational and interpretive systems.

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46. This is what puts limits on the explanatory potential of too coarsely grained analyses, be they formulated in GB-style co-indexing terms, general discourse properties, or statistical patterns.

47. Note that to say that *a* has undergone *covert movement* to a position *b* expresses nothing more than that *a* is interpreted as if it were in the position *b*, and that, moreover, the path between *a* and *b* obeys standard conditions on movement paths.

In the next sections we will be discussing two possible scenarios:

- a lexical semantics-based scenario;
- an inalienable possession-based scenario.

But first I will say a few words about how the computational and interpretive systems interact, an issue that is relevant to both scenarios.

Natural language expressions can be combined in two ways. Within the framework of Chomsky (1981, 1986) these were referred to as *substitution* and *adjunction*, respectively. The former is typically reflected in predicate-argument relations, the latter in modification relations. Since substitution, as it was originally conceived, applied only to a subset of the relevant cases, in Chomsky (1995, and subsequent work) Merge was introduced as the basic combinatory principle. Merge comes in two forms: Set-merge and Pair-merge. Set-merge reflects predicate-argument relations, Pair-merge yields adjunction structures, and is interpreted as modification. A canonical way of interpreting modification structures is by *intersection*. Thus, the expression *black cats* can be taken to denote the set of objects that are both black and cat.<sup>48</sup> Chomsky (2001) posits *interpretation by intersection* as the mechanism of choice for adjunction (pair-merge) in general.

As often, the pre-theoretical view does not precisely correspond to what one finds empirically. For instance, languages may allow the combination of verbs into verbal clusters (for instance, Dutch and German) by a mechanism of adjunction, yet one would be disinclined to call this a modification relation. Crucially, however, such verbal clusters are interpreted by a semantic composition mechanism that has intersection as one of its core ingredients. Similarly, expressions that are *prima facie* arguments are not always interpreted in that way. For instance, as discussed in De Hoop (1992), bare plural objects in Dutch (and other languages as well) are better interpreted by an incorporation mechanism than as independent arguments.

The syntactic mechanism expressing incorporation is head-adjunction (Baker 1996, 2001). This leads one to expect that again the interpretive mechanism is intersection, and indeed an expression as *boeken lezen* ‘read books’ in *Jan zal boeken lezen* ‘John will read books’ is readily interpreted as the intersection between reading events and events involving books. It is this *interpretation by intersection* that plays a key role in the interpretation of SELF-marking.<sup>49</sup>

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48. Putting aside here the more complex cases such as non-intersective adjectives.

49. Here, and below, one may intuitively think of the operation involved as a type of predicate composition. However, as Alexis Dimitriadis notes, it is not composition in the standard sense, where the composition of two functions  $f$  and  $g$  ( $f \circ g(x)$ ) is

Note that the assumption that head adjunction is available for argument licensing is nothing special. It is overtly available for all argument types in languages that are positively specified for the polysynthesis parameter (Baker 1996, 2001). Hence, we only need to assume that a type of argument licensing that is overtly available in one class of languages is covertly available, at least for a subset of arguments, in another class.

In the next two sections I will discuss two possible derivations.

### 3.1. A lexical semantics-based scenario

Consider, again, (30):

- (30) a. DP ... [V] [DP PRON [SELF]]  
 b. DP ... [SELF V] [DP PRON [e]]

We saw that *self* can attach to predicative stems. The question is: How can a reflexive interpretation of (30b) be enforced grammatically?

In order to answer this question and derive this enforcement the following empirical assumptions and steps suffice:

- i. *Self* has minimal semantic content. It is a relational noun with the argument structure SELF<x,y> intrinsically denoting a reflexive relation. Thus, its semantics is:  $\lambda x. \lambda y. (x = y)$ .

*Empirical assumption about the lexical semantics of self.*

**Comment:** That *self* has minimal semantic content is uncontroversial. The specific semantics assigned has the status of a meaning postulate.<sup>50</sup>

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interpreted as  $f(g(x))$ . For the cases under consideration standard composition would give the wrong interpretation.

50. As I argued in Section 2.8, the use of SELF as a protecting element is perfectly well compatible with it being used as an intensifier. Anne Zribi-Hertz (p.c.) prompted me to think about the relation of SELF as an intensifier, and its status as a relational noun expressing identity in the present derivation. In fact, use as an intensifier appears to be quite in line with expressing an identity relation. Elements expressing sameness do occur as intensifiers, witness French *même*, and Russian *sam(yj)*, and of these *même* also occurs as a reflexivizer. This suggests that rather than having (i), we have (ii):

(i) intensification  $\rightarrow$  reflexivization  
 (ii) identification  $\rightarrow$  reflexivization  
 identification  $\rightarrow$  intensification

- ii. Elements whose semantic content is under a certain threshold are  $\text{--Ref(erential)}$ .<sup>51</sup>

*Empirical assumption about the relation between semantic properties and interpretation.*

**Comment:** The assumption itself appears to be widely shared, which does not entail that it does not raise further questions. From the perspective of grammaticalization theory it is quite natural that grammaticalized elements have reduced lexical content and lose their canonical role. However, ideally we should have a theory of threshold values, which we do not have at the moment. Note that we must assume that the  $\text{--Ref}$  property can be read off the lexical representation.

- iii. The head of  $\text{--Ref}$  Arguments (may) (covertly) head-adjoin to the predicate (=incorporate) in order to saturate a thematic role.

*Empirical assumption about argument licensing.*

**Comment:** As discussed, there are independent reasons to assume that *self* may incorporate/adjoin. As discussed in the introductory part to this section, based on the insights in Baker (1996, 2001) and De Hoop (1992), the possibility to interpret *self* by head adjunction is not a special fact about *self*, but follows from the general structure of the computational system. The question to what extent this head-movement is enforced is discussed under v. below.

- iv. *Self*-movement can only be to the nearest c-commanding predicate.

*Follows from general theory of movement.*

**Comment:** Minimality is a fundamental property of (overt and covert) head-movement. The result of (covert) movement can be represented as in (31):

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51. Note that this  $\text{--Ref}$  property is to be distinguished from the  $\text{--R}$  property that characterizes  $\text{SE}$ -anaphors and reflexives as such, although in the case of reflexives I seek to reduce their  $\text{--R}$  property to the  $\text{--Ref}$  property. As the editors of this volume pointed out, the use of the term *referentiality* in this connection is very loose, since it can be doubted that relational nouns are referential in the semantic sense. This is certainly correct. So, perhaps  $\pm\text{Ref}$  is better understood as the ability to project an independent argument. Nevertheless, since all terminological alternatives seem quite cumbersome, I propose to retain the abbreviation  $\pm\text{Ref}$ . Perhaps as a small consolation I could point out that these relational nouns are all related to non-relational entries. So one could assign them the  $\pm\text{Ref}$  status by proxy. Needless to say, none of this answers the other issues the  $\pm\text{Ref}$  property raises.

- (31) a. ... [ $V_{\langle y,x \rangle}$  ... [ $\text{PRON} [\text{SELF}_{\langle x,y \rangle}]]$ ]  
 b. ... [ $\text{SELF}_{\langle x,y \rangle}$  &  $V_{\langle y,x \rangle}$ ] ... [ $\text{PRON} -$ ]

- v. Binding is enforced for one of the following reasons:
- Head-movement is the only way to interpret –Ref arguments.
  - The intersection between *self* and the predicate it adjoins to is a reflexive relation. This effectively turns *self* into an operator on the argument structure of  $V$ , requiring that values for subject and object arguments are identical. *Self* is attracted by an operator feature on the verb.
  - The intersection between *self* and the predicate it adjoins to is a reflexive relation. This yields a syntactic encoding of an interpretive dependency, which is preferred by economy (as already stated in the first part of this section).

*Consequences of steps taken so far together with  
a general property of the grammar.*

**Comment:** First, note that what we have here is indeed predicate composition resulting in a predicate meeting the joint interpretive requirements of each of the composed predicates. The effect of the semantics of *self* is that the interpretation of the second argument of the SELF-marked head will be restricted to values of  $x$ . The logical syntax representation of (32a) is (32b)/(32c):

- (32) a. DP  $V$  himself  
 b. DP  $\lambda x (V(x, \text{him}) \ \& \ = (\text{him}, x))$   
 c. DP  $\lambda x (\text{him} \ \lambda y (V(x, y) \ \& \ = (y, x)))$

This structure is interpreted as reflexive, but arity is respected since the two arguments of  $V$  are formally distinct in this representation. Hence the dependency is syntactically encoded.

Since we have three possible general mechanisms, let us briefly discuss each of them.

*Ad a)* Empirically, a) could be correct in the languages under consideration. However it leaves open the question of how to interpret the occurrences of *self* that are in exempt position.

*Ad b)* There is some *prima facie* evidence for the assumption that *self* is a verbal operator. As we will see in Section 3.3.2. *self* favours a distributive reading of the predicate it is an argument of. Interestingly, it cannot be felicitously combined with an explicit distributive operator such as Dutch *elk* ‘each’, as in *\*?De politici bewonderden*

*elk zichzelf* ‘the politicians admired each themselves’, suggesting the involvement of a mechanism prohibiting *self* from duplicating *each*. A *Distr* position associated with the verb and attracting *self* would capture that.

- Ad c) This is the simplest possibility. It needs the fewest assumptions: given that adjunction of *self* yields the syntactic encoding of a binding dependency, this encoding is preferred by economy over other interpretive options (note that it is compatible with *self* effectively being an operator on the verb). As already observed in Note 45, the apparent clash between economy and interpretability in cases like *\*I hated himself* follows from the fact that a “cancelled derivation” (resulting from a feature clash) is still ranked in an economy evaluation (see Chomsky 1995 and Reuland 2001).

Note that the three mechanisms in v. are all general. So, regardless of the eventual choice, we can conclude at this point that the obligatoriness of “binding” can be mechanically derived from general principles of grammar, with a minimum of assumptions about the lexical semantics of *self*.

Since *self* acts as an operator on the argument structure of the main predicate, the subject DP does not bind *him* in logical syntax. It does bind one of the arguments of *self*, though. It is the semantics of *self* that forms a filter on the interpretation of the main predicate. The difference with the interpretation sketched in (11) is that the latter involves an arity-reduction operation, where under the present derivation arity is effectively retained.

### 3.2. The inalienable possession model<sup>52</sup>

Pica (1987, 1991) suggested that “inalienable possession” (IP) constructions could provide a model for complex reflexives (but see already Helke 1973). Indeed, some typical IP constructions share “obligatoriness of binding” with reflexives. So, we have *John craned his neck*, *Everyone craned his neck*, but not *\*I craned his neck*. We have *John extended his hand*, *Everyone extended his hand*, but not *\*I extended his hand*. And, furthermore, as we know from Faltz and other typological studies, body-part strategies are among the most common reflexivization strategies that are around. It seems, therefore, natural to ask whether the obligatoriness of binding in standard reflexives such as *John admired himself* could not have the same source. For instance, *self* could be analyzed as a body part, like *neck* or *hand*, and then trigger the same mecha-

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52. With many thanks to Martin Everaert for making me think about this option during a LOT summer course we taught together a couple of years ago.

nism. Anagnostopoulou and Everaert (1999) and Everaert (2003) make the same suggestion. Let us then see what it requires to go through.

On the face of it, many cases of IP do indeed exhibit a binding requirement. However, we must be careful. Many of the most striking cases are idiomatic (to varying degrees); and the moment one has a verb that is not, the obligation appears to cease. Consider the related pairs in (33)–(35):

- (33) a. *John raised his eyebrows.*  
 b. *\*I raised his eyebrows.*
- (34) a. *John sprained his ankle.*  
 b. *\*(?I sprained his ankle.*
- (35) a. *During the fight, John twisted his ankle.*  
 b. *During the fight, I twisted his ankle.*

In (33) it does not seem possible at all for the possessive *his* to be free, hence we have a clear binding obligation. *Sprain* does not (easily) allow it either (although a web search still gave me two instances of a free *his*), but *twist* does. Of course, one could say that in (35b) we do not have IP, but that would miss the point. The point is that with verbs as in (33) a non-IP reading is not allowed. This is crucial for the binding *obligation* (but see below for discussion whether IP is sufficient). So, the question is, how to formally distinguish the IP cases from the non-IP cases. If we cannot, the IP strategy is of no avail for an explanation.

Reconsidering (35) we see that there is a contrast between (35a) and (35b): under the IP-reading *twist* lacks the agentive reading it has in the non-IP case. John is an experiencer rather than an agent in (35a) and in (34a). John did something, and as a result his ankle got twisted/sprained. Also, (35a) means that John sustained an injury, contrary to (35b).<sup>53</sup> So, in these cases the IP and the non-IP versions of the predicate are not strictly identical. This may help to identify proper IP cases.

However, there is a complication. Although in (35) the difference is easy to identify, in other cases it is more difficult to determine. Compare, for instance, (36a) and (36b):

- (36) a. *John proffered his hand.*  
 b. *John proffered his bottle.*

It seems that John is an agent in some sense in both cases. We do find a small difference, however. (36a) does not express a relation between “independent objects”. In (36b) John performs a transaction on a bottle, whereas in (36a) John

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53. As pointed out by Alexis Dimitriadis (p.c.).

does not perform a transaction on a hand. More precisely, the transaction initiated by proffering can be completed in (36b) by taking the bottle, but not in (36a) (unless, of course, by severing the hand, but this gives us again the bottle-case). We will keep this in mind as it may help us find an effective characterization of the distinction between the two cases.<sup>54</sup>

However, we have to be careful about how far this gets us. So far, we focused on whether or not a particular POSS-NP construction was IP. But let us now consider cases where we can be sure we have an IP. For instance, in *his body*, *his hair*, *his eyes*, etc., the relation between POSS and NP is prototypically one of IP. However, it is not the case that in the structure DP V [IP POSS NP], POSS is obligatorily bound by DP. This is illustrated by the examples in (37):

- (37) a. *John<sub>i</sub> hit his<sub>i,j</sub> knee.* (no bias)  
 b. *John<sub>i</sub> hated his<sub>i,j</sub> face.* (no bias)  
 c. *John<sub>i</sub> hated his<sub>i,j</sub> body.* (slight bias, but:)  
 d. *I hated his<sub>i</sub> body.* (fine)  
 e. *John<sub>i</sub> hated his<sub>j</sub> guts.* (somebody else)

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54. The following facts provide independent reasons for a binding obligation in the case of IP. Passivized IPs are quite awkward, as the sample in (i) illustrates:

- (i) a. *John sprained his ankle.* \*→ his ankle was sprained by John  
 b. *John twisted his ankle.* \*→ his ankle was twisted by John (–IP OK)  
 c. *John raised his eyebrows.* \*→ his eyebrows were raised by John  
 d. *John proffered his hand.* \*→ his hand was proffered by John (–IP OK)

This pattern can be understood as follows. Binding requires c-command. *John* does not c-command *his*, making binding impossible. But the alternative construal on the basis of co-reference that is available in non-IP construction is unavailable, precisely because IP requires binding. Hence, there is no solution that meets all requirements and ungrammaticality ensues.

This restriction is not limited to English. Dutch, which allows impersonal passives with unergative 1-place predicates (*er werd gedanst* ‘there was danced’) is as restrictive as English in the case of IP constructions:

- (ii) a. *??Zijn hand werd door Jan uitgestoken.*  
 ‘His hand was extended by John.’  
 b. *\*Zijn enkel werd door Jan verdraaid.*  
 ‘His ankle was twisted by John.’  
 c. *\*Zijn ogen werden door Jan uitgestoken.*  
 ‘His eyes were put out by John.’

These facts indicate that deriving the binding obligation of *complex anaphors* from an IP type strategy requires at least some additional assumption. Again, ideally, such an assumption should be independently motivated.

As we will see, it can be. The ingredients to carry out the derivation are available. Even with *proffering*, which was the least idiomatic of the cases discussed, we found a contrast between the IP and the non-IP case, involving the completion of the transaction. It reflects the intuition that in the IP case we do not have independent objects participating in a relation. Cutting things short, the inalienably possessed element is not referential in the way canonical arguments are.<sup>55</sup> If so, the following scenario applies, again leading to a derivation based on covert *adjunction/incorporation*.

As above, we take as our point of departure the structure in (30), repeated here as (38), but, for reasons of generality, replacing *self* with *bodypart* (BP):

- (38) a. DP ... [V] [<sub>DP</sub> PRON [BP]]  
 b. DP ... [BP V] [<sub>DP</sub> PRON [e]]

For ease of reference we start at the same point as we did in the case of the lexical semantics scenario, indicating where we start diverging:

- i. *BP* has minimal semantic content.

*Empirical assumption about the lexical semantics of BP.*

**Comment:** At this point no specific assumption about the *BP*'s semantics is introduced yet.

- ii. Elements whose semantic content is under a certain threshold are –R(eferential)

*Empirical assumption about the relation between semantic properties and interpretation.*

**Comment:** Note again, that we must assume that the –R property can be read off the lexical representation.

- iii. The head of –Ref Arguments (may) (covertly) adjoin to the predicate (incorporate) in order to saturate a thematic role.

*Empirical assumption about argument licensing.*

**Comment:** No difference.

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55. I realize that such a use of the notion of referentiality glosses over a number of problems. I will assume that the intuition is clear enough and leave an explicit analysis to another occasion.

- iv. *BP*-movement can only be to the nearest c-commanding predicate.

*Follows from the general theory of movement*

**Comment:** Just a blind syntactic process is assumed, with no implications for interpretation except in what follows.

- v. *BP* is a relational noun

*Empirical assumption about the lexical semantics of BP.*

**Comment:** Expressing an intrinsic relation is a property *self* shares with body-part expressions. More in particular, I will be assuming the following general internal structure for body-part expressions, where the variables stand for theta-positions of the head:

$$(39) \quad [_{DP} \text{PRON } [_{NP} \text{BP} \langle x, y \rangle ]]$$

The variable *x* bears the referential role in the sense of Zwarts (1992). Thus, *BP(x)* in (39) defines the set expression, the set of objects that stand in the “body-of” relation to *y*.

The inalienable possession interpretation of “body-of” is intrinsically represented in its lexical structure and hence in the relation it denotes. For sake of concreteness I will be assuming that in cases of “alienable” uses of inalienable elements (the “severed hand”) a lexical reduction operation is involved. So, *hand*, *foot*, etc. have dual, but rule-related entries. Thus, the *body-of*-relation is restricted to pairs such that *x* is the inalienable body of *y*, excluding other types of “possession”. Given the condition in (21) on the use of *BP*-expressions as variable protectors, the value of *x* can stand proxy for the value of *y*. Next, *y* must be formally linked to an argument, as in *the body of John*. The specifier (POSS Phrase) in a nominal expression may receive any role assignable by *N* that is still free in the domain of *NP* (Higginbotham 1983). Thus, if there is no complement of *N* bearing the *IP* role (of the *y*-argument), the *IP* role goes to *PRON*.

- vi. The relation expressed by *BP* composes/intersects with the relation expressed by the verb that *BP* adjoins to.

*General property of the interpretation of adjunction.*

**Comment:** Composing and intersecting the predicate  $P(R_1 = \langle u, v \rangle)$  and the *IP*-expression  $(R_2 = \langle w, z \rangle)$  yields  $P \oplus^{56} IP = R_1 \cap R_2$ , which denotes

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56. For convenience sake I am using here the operator  $\oplus$  for the combination of adjunction and the intersective interpretation.

the set of pairs  $\langle x, y \rangle$  such that  $\langle x, y \rangle$  is both in  $R_1$  and  $R_2$ . Assume that for the argument structure of some verb  $V$ ,  $x$  stands for the external role and  $y$  for the internal role. In the case of  $BP$  the variable of the set expression stands for the internal role; the role that goes to  $PRON$  is the external role. If  $V$  composes with  $BP$  in the structure of (40) the internal role of  $V$  and the internal role of  $BP$  will match just as the external role of  $V$  and the external role of  $BP$ .

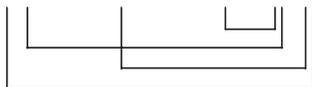
vii. Binding obtains.

*Consequence of previous steps.*

**Comment:** Binding follows from composition/intersection. Given a predicate  $P$  denoting the relation  $R_1 \langle x, y \rangle$ , and an IP expression denoting the relation  $R_2 \langle w, z \rangle = \langle w, BP(w) \rangle$ , the restriction on the IP relation, namely that the internal argument must be able to stand proxy for the external argument is inherited by  $P \oplus IP$ . Hence,  $P \oplus IP$  will denote the relation  $R_{1r} = \langle x, BP(x) \rangle$  as a subset of  $R_1$ .

For the relevant structure consider (40):

(40)  $V \langle x, y \rangle$  [DP  $PRON$  [NP  $BP \langle y, x \rangle$ ]]



Via its  $y$ -argument  $BP$  is linked to the internal role of the verb, via the  $x$ -argument  $PRON$  is linked to the external argument of  $BP$  and to the external argument of the verb. Note that for the internal argument of the verb this is straightforward, since it is free the moment composition takes place. For the external argument we must be careful since regardless of the technical timing the subject and  $PRON$  may seem to compete for the same role. However, in logical syntax  $PRON$  translates as a variable. Assuming that predicate composition applies in logical syntax we have the right result: predicate composition can take place as required provided  $PRON$  translates as a variable bound by the external argument of  $V$ .

viii. Binding is enforced for one of the following reasons:

- a. Head-movement is the only way to interpret –Ref arguments
- b. —
- c. The intersection between  $BP$  and the predicate it adjoins to is a reflexive relation. This yields a syntactic encoding of an interpretive dependency, which is preferred by economy.

*Consequence of previous steps.*

**Comment:** Option b. of the discussion of SELF-movement is not applicable here. Hence, only the a- and the c-options should be considered. As in the case of *self*, the c-option is the simplest one, hence preferred.

To see how this works, consider (41). The derivation maps (41a) via (41b) (head movement/adjunction + composition/intersection) to the logical syntax representation (41c) where  $x_{DP}$  stands for the variable resulting from Quantifier Raising the subject,  $f_N$  for the function interpreting the body part expression, and  $x_{his}$  for the variable resulting from translating *his* (for perspicuity's sake the internal argument linking has been left implicit) and (41d) with the flat resulting structure assumed for Logical Syntax:

- (41)      a.      [DP [V [his N]]]  
             b.      DP [N-V [his (N)]]  
             c.      DP ( $\lambda x$  [  $x_{DP}$  [ ||N  $\oplus$  V||  $f_N(x_{his})$ ]])  
             d.      DP ( $\lambda x$  [ ||N  $\oplus$  V|| (x, f(x))])

Thus, the IP model combines protection, the obligation of binding and a formal binding relation in logical syntax.

### Interim summary

We went through two derivations of how a reflexivizer may enforce binding. Note that I introduced no assumption that is specific to binding. Both derivations rely on the same general claims about how the syntactic system deals with semantically light (–Ref) arguments, namely via incorporation/incorporation and composition/intersection. The two derivations differ in a specific empirical assumption about the relevant property of the reflexivizer involved: i) *self* as expressing an identity requirement; ii) *BP* as being a relational noun intrinsically expressing an IP dependency between its two arguments. The latter model could in principle apply to *self*-reflexives as well; conversely, the identity model cannot be applied to all BP-IPs indiscriminately.

### 3.3. Some further issues

So far I have not discussed how to choose between the two models. One attractive position would be that there is only one strategy, namely the IP strategy with *self* as a limiting case. Another possibility is that both reflect more abstract general principles. I will come back this issue in Section 3.3.3. below. In any case, it is an empirical issue whether the IP model does indeed apply to BP-reflexives in all languages. Answering this question requires a thorough investigation of the cross-linguistic variation in reflexive binding. Currently we do not know precisely how pervasive the binding enforcement is. As we saw,

Malayalam and Peranakan Javanese have been reported as languages possessing an anaphor without a binding enforcement. Cole et al. (this volume) characterize *awake dheen* in Peranakan Javanese as a BP anaphor (which Malayalam *taan tanne* is arguably not). I do not know the range of BP-reflexive languages without a binding enforcement but it is entirely possible that there are more such languages, and that we simply have not yet asked the right questions about other languages that have not been sufficiently studied yet. In any case the fact that they exist raises the question of the factors involved in the variation. I will come back to this in Section 3.3.3. below.

I will first discuss two further issues that bear on the generality of the IP-model.

### 3.3.1. *Statue-readings*

In both Dutch and English, *self*-anaphors allow the statue reading discussed in Jackendoff (1992). As discussed in Reuland (2001), simplex reflexives do not allow that reading, witness the contrast in (42):

(42) “Madame Tussaud’s”-context:

Consider the following situation:

*Mary had gotten a statue at Madame Tussaud’s. She walked in, looked in a mirror and all of a sudden she startled because:*

a. *ze zag zich in een griezelige hoek staan.*  
she saw SE in a creepy corner stand

b. *ze zag zichzelf in een griezelige hoek staan.*  
she saw herself in a creepy corner stand

‘She saw herself standing in a creepy corner.’

Favoured interpretations: a) *zich* = Mary: ‘Mary saw herself’;  
b) *zichzelf* = Mary’s statue: ‘Mary saw her statue’.

The fact that English *himself* allows the statue interpretation and that Dutch *zichzelf* even prefers it is more easily compatible with the IP/bodypart strategy than with the identity strategy, unless ‘identity’ is interpreted as some loose type of identity, like “anything that can stand proxy for the referent”, in which case the identity strategy comes even closer to the IP-strategy. It would be important to study the cross-linguistic distribution of statue-readings and their co-variation with reflexivization strategies.<sup>57</sup>

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57. I am very grateful to Anne Zribi-Hertz (p.c.) for bringing up the issues discussed in this note. She provides the following French translations for the examples in (42):

3.3.2. *Distributivity*

In Dutch, reflexives with a plural antecedent show differences in distributivity. This is illustrated by the contrast in (43), using the verb *verdedigen* ‘defend’ which allows both a simplex and a complex reflexive. Suppose a group of soldiers has been given the assignment to hold a hill; subsequently the enemy attacks them. After the battle we can have a number of situations. For our pur-

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(42’) [*Tournant les yeux vers un miroir, Marie sursaute car:*]

‘Looking into a mirror Marie startles when’

a. *Elle s’aperçoit debout dans la pénombre.*

‘She sees herself standing in the shadows.’

b. *Elle s’aperçoit elle-même debout dans la pénombre.*

‘She sees herSELF standing in the shadows.’

As she observes:

In (42’a) we have a simplex SE-V form, and in (42’b) SE is doubled by a MEME strong pronoun, which triggers an intensive reading (‘centrality’ effect, in König’s sense). But I also have similar intuitions wrt. the ‘identity’ relation as those described by ER for Dutch: in (42’a) my first interpretation would be ‘real Marie’, whereas in (42’b) my first interpretation would be ‘statue Marie’. [Upon second thought, however, I would say that both examples allow both readings.] I think I actually have the same intuitions wrt. English (42’’) (same context).

(42’’) a. She saw herself standing in the shadow!

b. She saw herSELF standing in the shadow!

Here too my spontaneous readings would be real-Mary in (a) and statue-Mary in (b), although upon second thought (and provided an adequate discourse context justifying focus structure) both readings seem available in both examples.

It seems to me that these observations are in line with the main thrust of the analysis I am proposing. That the statue-reading is not the only reading of the complex reflexive follows from (21) in the main text: being able to stand proxy for has identity as a limiting case). That French and English are more liberal than Dutch is in its the interpretation of the SE-anaphor, follows from the fact that neither the clitic *se*, nor the anaphor *herself* have the syntactic status of SE-anaphors. In the latter case this is obvious, for the analysis of *se*, I refer to Reinhart and Siloni (2005) and Siloni (this volume). Crucial is, that unlike *zich*, *se* need not form a chain with an antecedent.

As she further notes: In both French (42’) and English (42’’) the “bodypart” analysis which is considered for *zelf* by ER is clearly unavailable since neither F *même* nor focal stress may reasonably be analysed as bodyparts. So the parallel intuitions wrt. the “identity” relation in (42), (42’) and (42’’) might be evidence against the assumption that the “identity” contrast between (42a) and (42b) in Dutch are due to the bodypart nature of *zelf*.

poses two are relevant: i) the soldiers defended the hill, but at the cost of most of their lives; ii) the soldiers lost the hill, they all stayed alive. In the first case one can properly say (43a), but not (43b). In the second case one can say either:

## (43) Dutch

- a. *De soldaten verdedigden zich met succes.*  
 the soldiers defended SE with success
- b. *De soldaten verdedigden zich-zelf met succes.*  
 the soldiers defended SE-SELF with success  
 ‘The soldiers defended themselves successfully.’

What this shows is that *zichzelf* has a distributive reading (each of the soldiers must have defended himself successfully), whereas *zich* is collective. It is hard to see how this effect can be explained if *self* just imposes an identity requirement. However, it fits if *zelf* allows a residual body-part interpretation (individuals, but not collectives, may have bodyparts).

Again, it would be important to have a broader cross-linguistic investigation of the relation between the IP-strategy and distributive versus collective interpretation.<sup>58</sup>

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This is an important remark, and I am quoting it in full since it enables me to stress some crucial points. First of all, according to (21) the minimal requirement on the protecting element is that it yields an  $f(x)$  that can stand proxy for  $x$ . As long as focal stress and *même* can do that, the conditions of (21) are met, and the possibility of a statue reading follows. Second, strange as this *prima facie* may seem, it is conceivable that the BP strategy successfully applies to an element that is not a body-part. In fact, the empirical question is whether it is the identity statement in the meaning of SELF, or other intensifying elements based on identity statements (*même*, *sam*), is crucially involved, or whether just having a relational character is sufficient (assuming that bleaching the meaning of body-part expressions essentially reduces them to being relational).

58. Bergeton (2004) argues against a possible connection between SELF-anaphors and distributivity, saying that:

The sentence in (91b) (=i) EJR) clearly falsifies the claim that the complex reflexive *sig selv* must have a distributive reading, thus refuting the alleged direct link between distributivity and intensification of reflexives.

## 3.3.3. A final simplification

Despite the fact that we have made considerable headway, the possibility for further simplification should be considered. Especially the role of the –Ref property requires a number of empirical assumptions about the status of –Ref expressions that one might wish to simplify or generalize. Yet, on the other hand, it seems that the –Ref property is relevant, if only to understand the cross-linguistic variation in the enforcement of binding.

In order to simplify, then, suppose that economy of encoding is the overriding factor: economy as a trigger for head-movement will only work if the semantic properties of the predicate head to be adjoined are so impoverished that the encoding of the binding relation that is achieved is fit for use. As we saw in Section 2.2.8, the choice of Morph in (20), repeated here, is limited by conditions of use, restricting what are admissible values of  $M(x)$ , as in (21).

- (20) a.  $DP\ V\ [Pronoun\ Morph]$   
 b.  $DP\ \lambda x\ [V(x, [x\ M])]$

- (21)  $DP\ (\lambda x\ V(x, f(x)))$

Condition:  $\|f(x)\|$  is sufficiently close to  $\|x\|$  to stand proxy for  $\|x\|$

The condition in (21) is a condition of FIT:  $f(x)$  should be fit for its role. Under a strict economy approach, then, the same applies to adjunction of Morph to V (if it is not a verbal affix to begin with): Whether or not Morph will obligatorily adjoin to V will also be determined by a condition of FIT and Economy. Since Economy favours a syntactic encoding of an interpretive dependency if possi-

- 
- (i) *Soldaterne forsvarede sig selv, men overladte civil befolkningen*  
 the.soldiers defended SE SELF but left civil population  
*til fjenden.*  
 to the.enemy

‘The soldiers defended themselves but left the civilians to the enemy.’

I fail to see the argument here. Note that the type of sentence is ill-suited to base any argument on since there is no well-formedness judgment involved. Apparently Bergeton feels that a “collective interpretation” of the elided DP in the second conjunct blocks a “distributive interpretation” of *the soldiers* in the first conjunct. However there is no reason to expect this to be true, especially since SELF operates on the predicate. Thus, in general, there is nothing wrong with structures as in (ii) or vice versa as shown in (iii):

- (ii)  $[DP\ \lambda x\ (x\ P_{distr} \dots)]\ Con\ [(\cancel{DP})\ \lambda x\ (x\ P_{Coll} \dots)]$

- (iii) *The three men had hurt themselves but lifted five pianos.*

ble, adjunction of Morph onto V, deriving (44b) from (44a) is obligatory if the condition of (44c) is met:

- (44) a.  $DP\ V\ [Pronoun\ Morph]$   
 b.  $DP\ Morph-V\ [Pronoun\ (Morph)]$   
 c. FIT:  $\|M \oplus V\|$  can stand proxy for  $\lambda x (x\ V\ x) / \lambda x (x\ V\ f(x))$

Thus, the crucial condition is that  $\|M \oplus V\|$  be a relation that comes sufficiently close to the intended reflexive relation with *DP* binding *Pronoun*. If so, this obviates the difference between the SELF-strategy and the IP-strategy as strategies that differ in any theoretically significant way, and the question of whether or not one can be reduced to the other.<sup>59</sup>

The same should apply to any other obligatory reflexivizing strategy.

The analysis of complex reflexives developed can be summarized in the following points:

- i. BP-head/SELF is a relational N.
- ii. The semantic properties of BP/SELF: The semantic properties of BP/SELF impose strong restrictions on the choice of the value of one argument, in terms of the value of the other one. Possibly as strong as identity in the case of SELF, minimally as strong as the requirement that values of the internal argument can stand proxy for the values of the external argument (*x* and *the body of x*).
- iii. Intersecting the relation  $R_{\text{PRED}} = \langle x, y \rangle$  with the relation  $R_{\text{IP}} = \langle x, BP(x) \rangle$ , yields the relation  $R_r = \langle x, BP(x) \rangle$  as a subset of R. If  $BP(x)$  can stand proxy for *x*,  $R_r = \langle x, BP(x) \rangle$  can in principle stand proxy for a reflexive relation  $R_{\text{reflexive}} = \langle x, x \rangle$ .
- iv Two general principles determine the obligatoriness of reflexive binding:
  - a. FIT;
  - b. Economy.

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59. This line may well answer an issue raised by Anne Zribi-Hertz (p.c.). She feels that inalienable possession and locality restrictions are quite independent from each other, especially insofar as inalienable possession is an ingredient of metonymy. The analysis here focuses on formal conditions that may be met by some, but not necessarily by all IP constructions. In fact, if the last section is on the right track we have formal operations that kick in whenever their conditions for applying are met. The formal operations themselves are simply ingredients of the computational system. When they kick in is determined by general economy conditions.

Given this analysis, then, cross-linguistic (and intra-language) variation in the obligation to reflexivize either involves syntactic factors (for instance factors prohibiting movement), or lexical factors preventing FIT.

#### 4. Remaining questions and summary of results

- 4.1. Can a typology of reciprocals be modeled on the typology developed by Faltz for reflexives? And how could such a typology be refined?

Faltz's typology is based on the morphological status of the reflexive elements, the origin of their composite parts, and the way they are morpho-syntactically connected. Our goal in this article has been to reveal a number of further dimensions that are relevant for the typology of reflexives (and anaphoric expressions more generally). We saw that any typology of anaphoric expressions should include the parameters summarized in Table 1:

- $\pm$  Reflexivizing function,  $\pm$  Referential independence

Clearly, the parameter  $\pm$  *Reflexivizing function* does not apply to reciprocals. Although we did not discuss this here, the parameter  $\pm$  Referential independence does. One can certainly argue that *each . . . other* in *each of the men admired the other* stands to *each other* in *the men admired each other* as a pronominal to an anaphor. There is a sense in which expressions like *each other* depend on an antecedent for their interpretation just like reflexives as *himself*.

What reflexives and reciprocals share is that at an abstract level both involve identifying the subject and the object set, and defining a restrictive relation over the result. Thus conceived, both express some type of dependency between subject and object, but neither necessarily involves binding in the sense defined in (4). Both, however, either involve a lexical operation reducing the arity of the predicate, or a syntactic bundling operation on theta-roles. Faltz' typology of reflexives must therefore be supplemented by dimensions reflecting properties of these processes:

- $\pm$  Operation on argument structure
  - Lexicon versus Syntax
  - $\pm$  Case residue
  - $\pm$  argumental "marker" (clitic, SE/PRON, Sakha *-n*)

- $\pm$  Chain formation (narrow syntax encoding versus logical syntax encoding)
  - Factors:
    - $\pm$  structural Case
    - $\pm$  grammatical number
    - person marking, etc.
- $\pm$  Reflexive licenser
  - $\pm$  argumental (verbal/structural [oblique, PP]/argumental)
  - $\pm$  enforcement
    - $\pm$  movement/incorporation
      - ◊  $\pm$  IP
        - $\pm$  statue readings/*de se*
        - $\pm$  distributivity

As we saw,  $\pm$  Operation on argument structure applies to reciprocals as well. So *as an answer to question i.*: a typology of reciprocals can to some extent be modeled on the typology of reflexives. Other properties of reflexives are independent of those of reciprocals. “Brute force reciprocalization” does not appear to be possible due to the complexity of the operation semantically. Thus, one would not expect to find anything like “protection” to be involved in explicit reciprocalization. But, we may also put it differently: any “protection” needed is already present in the operation itself. Could issues of chain formation play a role? In fact they do. Consider German, where the anaphor *sich* is used with a reciprocal interpretation. In view of chain theory one would be surprised to find an alternative with a pronominal leading to the same interpretation. In Frisian, constructions with locally bound pronominals do not have a reciprocal interpretation (neither does, in fact, Dutch *zich*). However, it would be interesting to see whether one could have a language that is like Frisian in that it allows locally bound pronominals in the position of SE-anaphors but assigns a reciprocal interpretation to that element, just like German does to *sich*. So we would have the equivalent of *die Leute haben sich gestritten* (‘the people argued [with each other]’), but with a pronominal in the position of *sich*. In any case, this hypothetical case shows that issues of chain formation could in principle also arise for reciprocals.<sup>60</sup>

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60. This is independent of the fact that reciprocal interpretation may involve other instances of chain formation, as in the case of *long distance reciprocals* such as *The boys think that they like each other*=[each boy<sub>j</sub>]<sub>i</sub> thinks that he<sub>j</sub> likes the other boys<sub>j</sub>. See Dimitriadis (2000) for discussion.

- 4.2. Does the term “anaphor” have any theoretical significance, or is it merely a convenient label used to refer to a specific class of pronominals or pronoun-like elements with certain (“defective”) referential properties?

The term “anaphor” may continue to be useful to refer to elements with defective referential properties, sharing, for instance, the properties that they cannot be used deictically, that they do not allow split antecedents or are obligatorily bound in VP-ellipsis contexts. However, the ways in which they are used to encode dependencies may be quite diverse, and depend not so much on their being “anaphors”, but on the nitty-gritty details of their feature make-up, and the way these features interact with the grammatical environment. So, in actual fact, after an element has been classified as an anaphor the work only starts: Why it is an anaphor, and how can its properties be derived? This, surely, applies to reciprocals as well.

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# Domain restrictions on reciprocal interpretation

*Martin Everaert*

## 1. Introduction<sup>1</sup>

Reciprocals seem to require a co-argument antecedent. This paper addresses the observation that there are many examples of reflexives that need not be locally bound, but that there seem to be no comparable examples of long-distance reciprocals (Belletti 1982; Yang 1983; Manzini and Wexler 1987; Everaert 1991; Asudeh and Dalrymple 2005).

Binding theory, a theory of anaphoric relations taken as syntactic dependencies (Chomsky 1981), has played a prominent role in generative theorizing:

- (1) A. An anaphor is bound in its governing category
- B. A pronominal is free in its governing category
- C. An R-expression is free

Anaphors (reflexives, reciprocals) being subject to condition A means two things: (i) They are referentially dependent upon a “commanding” antecedent (cf. [2a,b]), and (ii) the antecedent must be found within a certain domain, a “governing category” (cf. [2c]):<sup>2</sup>

- (2) Dutch
  - a. ***Jan en Peter*** *zagen elkaar.*  
Jan and Peter saw each.other  
'*Jan and Peter saw each other.*'
  - b. \**De vader van Jan en Peter* ***zagen elkaar.***  
the father of Jan and Peter saw each.other  
int.: 'The father of *Jan and Peter* saw *each other.*'

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1. I would like to thank Alexis Dimitriadis, Cem Keskin, Ekkehard König, Eric Reuland and Anca Sevcenco for their comments and help.

2. Antecedents and reciprocals will be indicated by bold face type in examples, and by italics in translations.

- c. \**Zij denken [dat het elkaar dwars zat dat de they think that it each.other bothered that the foto's aan de muur hangen]. pictures on the wall hang*  
 int.: 'They think that it bothered *each other* that the pictures are hanging on the wall.'

Exceptions to the domain restrictions have quite frequently been noted (cf. the discussion in Koster and Reuland 1991 and Reuland 2005 for an overview), as the examples in (3), from English, Japanese and Icelandic, respectively, illustrate:

(3) English

- a. *Max boasted that the queen invited Lucie and himself for a drink.*

Japanese (Sportiche 1986: 372)

- b. *Bill wa [John ga zibun o semeta to] omotta.*  
 Bill TOP John NOM himself ACC blamed COMP thought  
 'Bill thought that John blamed *him*.'

Icelandic (Reuland and Everaert 2001: 649)

- c. *Jón segir að Pétur raki sig á hverjum degi.*  
 John says that Peter shave.SBJV himself every day  
 'John says that Peter shaves *him* every day.'

Such cases were discussed under the heading of "long-distance binding", and were accounted for as the result of relaxations of the notion "governing category" (cf. Yang 1983; Manzini and Wexler 1987, among others). It has also been argued that many cases of long-distance binding might, in fact, be cases of non-syntactic binding, i.e. outside the scope of Binding Theory in (1) (Reinhart and Reuland 1991, 1993; Pollard and Sag 1992, 1994).

Reinhart and Reuland (1993) argue that anaphors in argument position are subject to a syntactic, predicate based, binding theory, forcing locality, while anaphors in non-argument positions (cf. [3a]) are not subject to those binding conditions. Reuland (2001) shows how even anaphors in argument positions, as in (3b,c), can escape the regular locality restrictions and allow long-distance binding. For Reinhart and Reuland (1993) and Reuland (2001), cases as in (3) exemplify "logophoric binding", with the use of reflexives being restricted to certain reportive contexts transmitting the words or thought of an individual or individuals other than the speaker/narrator.

Pollard and Sag (1992) coin the term “exempt anaphors”. Like Reinhart and Reuland (1991, 1993) they argue that Principle A should only apply to (non-subject) co-argument anaphors. Anaphors in other positions than these, such as in (3a), are exempt from Principle A. For cases of long-distance binding as in (3b,c) a separate condition has been proposed in the HPSG literature, the so-called “principle Z” (Xue et al. 1994): A locally a-commanded long-distance anaphor must be a-bound. Typical examples of cases of exempt anaphor configurations are, apart from (3a), examples like in (4) and (5) (from Dutch):

- (4) English (Pollard and Sag 1992: 264)
- a. *Kim and Sandy knew that Computational Ichthyology had rejected each other's papers.*
  - b. *They made sure that nothing would prevent each other's pictures from being put on sale.*
- (5) Dutch
- a. *Die uitspraken over elkaar hadden tot gevolg dat*  
 DET statements about each.other resulted that  
*er een artikel verscheen waarin zij belachelijk*  
 there an article appeared in.which they ridiculous  
*werden gemaakt.*  
 were made  
 ‘Those statements about *each other* resulted in a news paper article in which *they* were ridiculed.’
  - b. \**Er is een artikel over hen verschenen in de*  
 there is an article about them appeared in the  
*krant. Sommige van de uitspraken over elkaar*  
 newspaper some of the statements about each.other  
*stonden op de voorpagina.*  
 stood on the front page  
 ‘A news paper article about *them* appeared. Some of the statements about *each other* were on the front page.’

The distribution of exempt anaphors is still governed by constraints, but not by syntactic ones. That is, binding could, for instance, be sensitive to processing constraints, linear order, or discourse principles such as point of view.<sup>3</sup>

In all variants of generative grammar – Principles & Parameters, HPSG, LFG, etc. – the notion “anaphor” is used to refer to both reflexives and reciprocals.

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3. Apparently such constraints are violated in (5b), but not in the other cases discussed.

But the discussion of long-distance binding is often limited to reflexives. When Reinhart and Reuland talk about “logophors”, they talk about reflexives. Pollard and Sag use the notion “exempt anaphor” indiscriminately for reflexives and reciprocals, but when Xue et al. (1994) introduce the notion “long-distance anaphor”, they exclude reciprocals from that class. In this paper we will focus on the issue of whether or not reflexives and reciprocals are fundamentally different types of anaphors (Section 2), and whether it is true that there are no long-distance reciprocals (Sections 3 and 4). In Section 5 we will review suggestions made in the literature on what lies at the basis of this observation.

## 2. Are reflexives and reciprocals different types of anaphors?

As pointed out above, reciprocals seem to behave differently from reflexives with respect to the locality of their antecedent. What you typically get is the following opposition: in languages allowing long-distance binding, or non-local binding, such as Kannada (cf. [6]), Dutch (cf. [7]), or German (cf. [8]) binding of the reciprocal outside the minimal governing category is excluded:

- (6) Kannada (Amritavalli 2000: 67, 89)
- a. *shyaama tannannu priitisuttaane anta raama heeLidanu*  
 Shyama self.ACC loves that Rama said  
 ‘Rama said that Shyama loves *him* (= Rama).’
- b. \**makkaLu naanu obbaranna obbaru baide anta*  
 children I one.ACC one.NOM scolded that  
*heeLidaru*  
 said  
 int.: ‘The children said that I scolded *one another*.’
- (7) Dutch (Everaert 1986: 214–218)
- a. *Zij lieten mij voor zich werken.*  
 they let me for themselves work  
 ‘They let me work for *them*.’
- b. \**Zij lieten mij voor elkaar werken.*  
 they let me for each.other work  
 int.: ‘They let me work for *each other*.’

- (8) German (Ekkehard König, p.c.)
- a. *Diese Regierungen lassen ausländische Söldner für sich arbeiten.*  
 these governments let foreign soldiers for themselves work  
 ‘These governments let foreign soldiers work for them.’
  - b. \**Diese Regierungen lassen ausländische Söldner für einander arbeiten.*  
 these governments let foreign soldiers for each.other work  
 int.: ‘These governments let foreign soldiers work for each other.’

The Polish example in (9) is, in a sense, even more telling. The Polish anaphor *siebie* can be interpreted both as a reflexive and a reciprocal (cf. [9a]). However, long-distance binding is only allowed in the reflexive reading (cf. [9b,c]).

- (9) Polish (Reinders-Machowska 1991: 147)
- a. *Kochamy siebie.*  
 we.love ourselves/each other  
 ‘We love ourselves/each other.’
  - b. *Chłopcy czytali dziewcząt wspomnienia o sobie.*  
 the.boys read the.girls’ memories about ANPH/REFL  
 ‘The boys read the girls’ memories about them/themselves.’
  - c. *Chłopcy czytali dziewcząt wspomnienia o sobie.*  
 the.boys read the.girls’ memories about ANPH/RECP  
 ‘The boys read the girls’ memories about each other (= the girls, ≠ the boys).’

Another interesting case is Turkish.<sup>4</sup> As described in Kornfilt (2000), Turkish has two reflexives, *kendi* (‘self’) and *kendi-si(n)* (‘self-his’). Both can be used for local binding (cf. [10a]), but the former is strictly local (cf. [10b]) while the latter allows long-distance binding (cf. [10c]):<sup>5</sup>

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4. Many thanks to Cem Keskin who helped me understand the intricacies of the Turkish reciprocal, and constructed some of the relevant examples.

5. In fact, *kendi-si(n)* can be used deictically:

(i) a. *Ali hakkında Ahmet ne düşün-üyor?*  
 Ali about Ahmet what think-PROG  
 ‘What does Ahmet think of Ali?’

- (10) Turkish (Kornfilt 2000: 198)
- a. *Ahmet kendin-i / kendi-sin-i çok beğen-iyor-mus.*  
 Ahmet self-ACC / self-3SG-ACC very admire-PROG-REP.PST  
 ‘(They say that) *Ahmet* admires *himself* very much.’
- b. \**Fatma Ahmed-in kendin-i çok beğen-diğ-in-i*  
 Fatma Ahmet-GEN self-ACC very admire-GER-3SG-ACC  
*bil-iyor.*  
 know-PROG  
 int.: ‘*Fatma* knows that *Ahmet* admires *her* very much.’
- c. *Fatma Ahmed-in kendisin-i çok beğen-diğ-in-i*  
 Fatma Ahmet-GEN self-ACC very admire-GER-3SG-ACC  
*bil-iyor.*  
 know-PROG  
 ‘*Fatma* knows that *Ahmet* admires *her* very much.’

Kornfilt argues that the inflected reflexive is a phrase in which the agreement marker licenses a small pro that is the actual binder of the reflexive element *kendi*: [pro<sub>i</sub> *kendi*-*sin*]. Small pro itself, being a pronoun, is bound either by the non-local (cf. [10c]) or local (cf. [10a]) antecedent.

Reciprocals in Turkish consist, in fact, of *birbir* and an appropriate possessive suffix (cf. [11a]). Given the presence of a possessor agreement affix, the analysis of the reciprocal in (11b) is most straightforwardly analysed as in (11c), similar to the structure proposed by Kornfilt for the reflexive *kendi-si(n)*:

- (11) Turkish (Cem Keskin, p.c.)
- a. *birbir-imiz / birbir-iniz / birbir-leri*  
 RECP-1PL RECP-2PL RECP-3PL
- b. *Onlar [birbir-leri-nin ev-e git-tiğ-in-i]*  
 they each.other-3PL-GEN house-DAT go-FNOM-3SG-ACC  
*san-dı-lar.*  
 think-PST-3PL  
 ‘*They* thought that *each other* went home.’
- c. [pro *birbir-leri*]-*nin*  
 [pro RECP-3PL]-GEN

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b. *Ahmet kendi-sin-i çok beğen-iyor-mus.*  
 Ahmet SELF-3SG-ACC very admire-PROG-REP.PST  
 ‘(They say that) *Ahmet* admires *him* (= *Ali*) very much.’

Because of the similar morphosyntactic properties of the long-distance reflexive *kendi-si(n)* and the reciprocal *birbir-leri* (cf. [11c]) one would also expect a similar binding behaviour: *birbir* being bound by the small *pro*, which would in its turn be bound by an available antecedent. But that is not the case. The reciprocal, like the simple reflexive *kendi*, is strictly local:

(12) Turkish (Cem Keskin, p.c.)

\**Kadın-lar adam-lar-ın birbir-lerin-i çok*  
 woman-PL man-PL-GEN RECP-3PL-ACC very  
*beğen-diğ-in-i bil-iyor.*  
 admire-GER-3SG-ACC know-PROG

int.: 'The women know that the men admire *each other* very much.'

The observation that reciprocals are strictly locally bound has been around for quite some time. Yang (1983), one of the very first to discuss this phenomenon, argues for a "Reciprocal-Binding Principle" that is slightly different from the one for reflexives: a reciprocal is, in essence, bound within the domain of its first c-commanding subject. Everaert (1986) examines the distributional properties of reciprocals in a number of Germanic languages. He argues that the fact that Dutch anaphors like *zichzelf* ('himself/herself/etc.') and *elkaar* ('each other') behave like quantified NPs might account for the fact that they are necessarily locally bound (Everaert 1986: 218). Van Riemsdijk (1985: 39) observes: "In most approaches to long reflexives, modifications of principle A play an important role. One would therefore expect these modifications to extend to reciprocals as well, i.e. one would expect there to be long reciprocals under precisely those conditions under which long reflexives are permitted. But the truth of the matter appears to be long reciprocals simply do not exist." The next sections will address this issue.

### 3. Are there instances of long-distance binding of reciprocals?

Is the descriptive generalization that reciprocals do not allow long-distance binding correct? It seems so, but there are also some clear counterexamples mentioned in the literature, as we will show below.

Take Dutch as an example. Although the judgements in (7) are robust, supported by the examples in (13), Broekhuis (1994) gives an example as in (14).<sup>6</sup>

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6. Note that native speakers of English take the English translation of (13a) as marginally acceptable.

## (13) Dutch

a. \***Ze** zagen me **elkaar** een hand geven.  
 they saw me each.other a hand give  
 int.: 'They saw me shake hands with *each other*.'

b. \***Zij** denken dat het **elkaar** dwars zat dat de  
 they think that it each.other bothered that the  
*foto's aan de muur hangen.*  
 pictures on the wall hanged  
 int.: 'They think that it bothered *each other* that the photos were  
 hanging on the wall.'

(14) **Zij** lieten mij stiekem **elkaars** dagboek lezen.  
 they let me secretly each.other.GEN diary read  
 'They let me read *each other's* diaries in secret.'

Kuno (1987) gives examples which illustrate that, in certain configurations, English reciprocals do allow a non-local antecedent:<sup>7</sup>

(15) a. ?*They* think it bothered *each other* that ...  
 b. ?*They* made sure it was clear to *each other* that ...

In the Lust et al. (2000) volume on South Asian Languages, there are some scarce remarks about possible instances of long-distance binding of reciprocals. In the chapter on Hindi/Urdu Davison (2000) gives (16a) as marginally acceptable. Since, in a comparable environment, the reflexive *apnaa* cannot take an antecedent across a finite clause boundary (cf. [16b]), this is noteworthy.

(16) Hindi/Urdu (Davison 2000: 433, 419)

a. ?**raam aur šyaam** sooc-tee hāi [ki ravi-nee kaha  
 Ram and Shyam think-IMPF are that Ravi-ERG say.PRF  
 [ki **eekduusraa-nee** paagal hai]]  
 that one.another-M.SG crazy is

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7. Kuno observes that in examples like (15) reciprocals may not be replaced by reflexives:

(i) a. \***They** made sure it was clear to **themselves** that ...  
 b. \***They** think it bothered **themselves** that ...

In Section 2 we also observed that reflexives and reciprocals do not behave similarly, but the pattern here is reverse from what is found there.

'*Ram and Shyam* think that *Ravi* said that *each other* is crazy.'  
 (= 'Ram and Shyam each think that Ravi said that the other was crazy.')

- b. \**siitaa-nee raam-koo (us-par) majbuur kiyaa ki woo*  
 Sita-ERG Ram-DAT it-on force do.PRF that 3SG  
*apnee-koo deekh-ee*  
 self-DAT see-CTG  
 int.: '*Sita* forced Ram that he should look at *him*.'

In the chapter on Marathi in the same volume, Wali (2000: 555–556) shows that long-distance bound reciprocals are excluded in finite clause embeddings (17a), but allowed in non-finite clauses (17b):

(17) Marathi (Wali 2000: 555)

- a. \**tyaa mulū-naa vaaṭṭa ki ekamekāā-ni dagaD*  
 those girls-DAT feel that each.other-ERG stones  
*pheklet.*  
 threw.AGR  
 int.: '*Those girls* feel that *each other* threw the stones.'
- b. *tyaa lokāā-ni shaam-laa ekamekāā-naa*  
 those people-ERG Sham-DAT each.other-DAT  
*boekaaraay-laa laavla.*  
 pinch-INF forced  
 '*Those people* forced Sham to pinch *each other*.'

This, however, may be expected, since the Marathi reflexive *swataah* is also excluded in finite complements, but allowed in infinitives:

(18) Marathi (Wali 2000: 530, 534)

- a. \**lili mhaNaali ki ravi swataah-laa dosh deto.*  
 Lili said that Ravi self-DAT blame gives  
 int.: '*Lili* said that Ravi blames *her*.'
- b. *lili-ni shaam-laa swataah-laa boekaaraay-laa laavla.*  
 Lili-ERG Sham-DAT self-DAT pinch-INF forced  
 '*Lili* forced Sham to pinch *her*.'

So, in this case reciprocals behave similarly to, at least, one type of reflexive, as is expected under the assumption that both reciprocals and reflexives are anaphors, subject to the same binding restrictions.

Evans and Nordlinger (2004) report that Alidou (1992) discusses a variety of Hausa that may illustrate long-distance antecedency. In standard Hausa, reciprocals in complex sentences must have clause-mate antecedents:

(19) Hausa (Newman 2000: 531)

a. *kànde dà jummai sun san (cêwà) bàlā dà tankò*  
 Kande and Jummai know that Bala and Tanko  
*sun cūci jūnā.*  
 cheated RECP

‘Kande and Jummai know that *Bala and Tanko* cheated *each other*.’

b. \**kànde dà jummai sun san (cêwà) bàlā dà tankò*  
 Kande and Jummai know that Bala and Tanko  
*sun cūci jūnā.*  
 cheated RECP

int.: ‘*Kande and Jummai* know that Bala and Tanko cheated *each other*.’

The dialect described by Alidou (1992) has, apart from the “bare” reciprocal *jūnā*, a more complex form *jūnansù* (the third person plural form of the reciprocal) that allows an antecedent that is outside of its clause:

(20) Hausa (Alidou 1992)

*kànde dà jummai sun san (cêwà) bàlā dà tankò*  
 Kande and Jummai know that Bala and Tanko  
*sun cūci jūnansù.*  
 cheated RECP

‘*Kande and Jummai* know (that) Bala and Tanko cheated *each of them* (i.e. Kande and Jummai individually).’

Japanese might provide another example of long-distance reciprocals. Japanese has several strategies to encode a reciprocal relation: the use of the anaphoric element *otagai* (cf. [21a]), the use of *aw*, a verb creating a complex predicate marking the predicate as reciprocal, simultaneously forcing the suppression of an (overt) object position (cf. [21b]), or a combination of the two (cf. [21c]):

(21) Japanese (Kobuchi-Philip p.c.)

a. *John to Mary ga otagai o seme-ta.*  
 John and Mary NOM each.other ACC blame-PST

- b. **John to Mary** *ga seme-aw-ta.*  
John and Mary NOM blame-RECP-PST
- c. **John to Mary** *ga otagai o seme-aw-ta.*  
John and Mary NOM each.other ACC blame-RECP-PST  
'John and Mary blame each other.'

Nishigauchi (1992) argues that the Japanese reciprocal *otagai* is in fact a composite reciprocal, as argued for in Heim, Lasnik and May (1991) for English *each other*, consisting of an empty D-operator with the distributor function and a reciprocator part:  $[[e]_D \textit{otagai}] / [[\textit{each}] \textit{other}]$ .<sup>8</sup> For Nishigauchi the reciprocal marker construction (cf. [21b]) consists of *aw* as an element with a distributor function, licensing an empty element with the reciprocator function.

Nishigauchi (1992) observes that *otagai* is strictly locally bound (cf. [22a]), but that there are some exceptions, as the example in (22b) shows, indicating that an “animacy” condition on intervening antecedents might be responsible for the locality:<sup>9</sup>

(22) Japanese (Nishigauchi 1992: 159, 160)

- a. \***John to Mary** *ga [Bill ga otagai o*  
John and Mary NOM Bill NOM each.other ACC  
*semeta to] omowta.*  
accused that thought  
int.: 'John and Mary thought that Bill accused each other.'
- b. **John to Mary** *ga [kono ziken ga otagai*  
John and Mary NOM this incident NOM each.other  
*o kizutuketa to] omowta.*  
ACC hurt that thought  
'John and Mary thought that this incident would hurt each other.'

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8. Nishigauchi (1992:192) seems to suggest that this distributive operator is absent in cases where *otagai* is combined with the reciprocal marker, as in (21c).

9. The animacy restriction can also be observed in the following examples from Pollard and Sag (1992: 271–272):

- (i) a. \***Bill** remembered that Tom saw a picture of **himself** in the post office.
- b. ?**Bill** remembered that the Times had printed a picture of **himself** in the Sunday edition.

(23) gives a case of long-distance reciprocalization containing only the verbal reciprocal marker:<sup>10</sup>

(23) Japanese (Nishigauchi 1992: 165)

?*John to Mary ga zibun no sensei-tati ga home-ta*  
 John and Mary NOM self GEN teacher-PL NOM praise-PST  
*to zyasui si-aw-ta.*  
 that suspect do-RECP-PST

'*John and Mary each* suspected that self's teachers praised *the other*.'

An interesting case is given in (24), which shows that the place of the verbal reciprocal marker, here on the matrix verb, determines the scope of the reciprocal (pro)noun *otagai*.

(24) Japanese (Nishigauchi 1992: 179)

*John to Mary ga Bill ga otagai ni kaita*  
 John and Mary NOM Bill NOM each.other DAT wrote  
*tegami o yomi-aw-ta.*  
 letter ACC read-RECP-PST

'*John and Mary each* read the letter that Bill wrote to *the other*.'

In the next section we will discuss some examples that are not straightforward examples of long-distance reciprocals because the interpretation crucially involves both a 'local' and the 'distant' antecedent.

#### 4. "Split antecedents"

It is known from the acquisition literature on binding that children sometimes allow a seemingly non-local binding relation of reciprocals (Matthei 1978). Philip (1995) reports that in two distinct experimental paradigms 76 five- and six-year-olds who otherwise showed fully adult-like comprehension of the Dutch reciprocal *elkaar* frequently interpreted sentences like (25) as being true when ducks reported that they had been tickled by cats.

(25) Dutch

*De eenden zeiden [dat de katten elkaar kietelden].*  
 the ducks said that the cats each.other tickled

'The ducks and the cats tickled each other.'

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10. Observe that, like in the Hausa example (20) above, the interpretation is 'each of' rather than 'each other'.

This type of long-distance binding is fundamentally different from what we discussed in the preceding section because it involves both the local and the long-distance antecedent, a form of co-distribution.

It appears that Dutch and English adults also seem to allow such a dependency in small clauses:<sup>11</sup>

(26) Dutch

- a. *Agatha en Bernhard vonden Charlotte en Dirk geen geschikte partner voor elkaar.*  
 Agatha and Bernhard considered Charlotte and Dirk no suitable partners for each.other
- b. *Agatha and Bernhard did not consider Charlotte and Dirk suitable partners for one another.*  
 [A&B]... [C&D]... RECP = [A... C... B] & [B... D... A]  
 ‘Agatha considered Charlotte an unsuitable partner for Bernhard and Bernhard considered Dirk an unsuitable partner for Agatha.’

Mistry (2000) appears to give a similar example of a reciprocal taking split (non-)local antecedents from Gujarati:

(27) Gujarati (Mistry 2000: 370)

- raaj<sub>i</sub> kišorne<sub>j</sub> ekmekne<sub>i+j</sub> madad karvaa sucavše.*  
 Raj Kishor.DAT each.other.O help do.INF will.suggest  
 ‘Ray will suggest to Kishor to help each other.’

It is tempting to also take the well-known case of ‘long-distance reciprocal’ interpretation in (28), first discussed in Higginbotham (1980), as such a case:

(28) *John and Mary think they like each other.*

- (a) ‘John and Mary think: John likes Mary and Mary likes John.’  
 (b) ‘John thinks John likes Mary and Mary thinks Mary likes John.’

Higginbotham showed that this sentence has two interpretations, of which the first (i.e. [28a]) could be taken as a long-distance binding of the reciprocal. Heim, Lasnik, and May (1991) argue that this reading results from the fact that the reciprocal in (28) can be bound (non-locally) by a distributor adjoined to the matrix subject, *John and Mary* (cf. the discussion on Japanese above):

(29) [John and Mary [each]<sub>i</sub>]<sub>i</sub> think [that they<sub>i</sub> like [e<sub>i</sub> other]]

11. I give the judgements tentatively, based on consulting several adults per language.

This “wide scope” reading is only allowed in cases in which the embedded subject is a dependent plural pronoun. This means that the (28a) reading crucially involves both the local and the long-distance antecedent. However, since it has been shown (by Dimitriadis 2000, among others) that this interpretation could very well follow from “local” binding given a proper analysis of the semantics of plural pronouns, such cases should not be put on a par with the examples discussed above in this section.

## 5. Reciprocals as “anaphors”

From what we have shown in Section 3 and 4 it is not at all clear that, on an observational level, it is true that long-distance reciprocalization is blocked. We can only hope that systematic cross-linguistic research will clarify this issue.<sup>12</sup> But suppose, for argument’s sake, that the generalization holds. What would be a possible explanation? We will review some of the suggestions made in the literature.

In dealing with the problem why reciprocals would not allow long-distance binding, the key lies in the assumption that reciprocals and reflexives, both being anaphors, should have a similar distributional pattern. By and large this happens to be the case (cf. Everaert 2000), but independent from the exceptions indicated above, there are other cases where their distribution diverges, as the examples in (30) illustrate (cf. Chomsky 1981; Lebeaux 1983; see also footnote 6):<sup>13</sup>

- (30) a. *They bought each other’s/\*themselves’ books.*  
 b. *John and Mary haven’t decided what each other/\*themselves should do.*  
 c. *The men preferred for each other/?\*themselves to be the candidate.*

The most straightforward option to account for the (un)grammaticality of the examples in (30) is that the binding theory itself doesn’t make a difference between reflexives and reciprocals, but that such distributional differences are the result of independent principles interacting with the binding principles. That

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12. Such information is currently being acquired in the NSF-funded African Anaphora project of Ken Safir (Rutgers), the DFG/NWO-funded project *A Typology of Reciprocal Markers: Analysis and Documentation* (König, Gast [Berlin]; Everaert, Dimitriadis [Utrecht]) and the Australian Research Council-funded project *Reciprocals across Languages* (Evans, Nordlinger [Melbourne]).

13. I am giving the judgements from the cited literature. Many instances of examples like (30b,c) can be found in corpora.

is, independent principles that hold for reciprocals and not for reflexives, or the other way around.

Bresnan (2000), for instance, has argued that case considerations – lack of genitive case in a paradigm – is responsible for the difference in distribution between reflexives and reciprocals in the case of (30a). For examples as in (30b), Lebeaux (1983) and Chomsky (1986) have argued that reflexives but not reciprocals move at Logical Form, resulting in the violation of another principle of grammar (the Empty Category Principle; cf. Chomsky 1981). A similar explanation could be argued to hold for (30c).

Following this line of reasoning, it could be that reciprocals have a specific property that sets them apart from reflexives in never allowing long-distance binding: they resemble quantified NPs in having scopal properties. Indeed, in Belletti (1982) it is argued that the Italian reciprocal *l'uno l'altro* (cf. [31]) should be analyzed as a complex element containing a floating quantifier (cf. [32]):

- (31) Italian (Belletti 1982: 116f.)
- a. *I miei amici hanno parlato l'uno dell'altro.*  
 DET my friends have spoken DET-one of.DET-other  
 'My friends spoke of each other.'
- b. [<sub>NP</sub> [*l'uno*]<sub>i</sub> [<sub>NP</sub> [*i miei amici*]<sub>i</sub>]] *hanno parlato* [<sub>PP</sub> *e*<sub>i</sub> [<sub>PP</sub> *dell'*  
 [<sub>NP</sub> *altro*]]]
- (32) a. *I miei amici hanno parlato tutti dello stesso problema.*  
 DET my friends have spoken all of.the same  
 problem  
 'My friends all spoke of the same problem.'
- b. [<sub>NP</sub> [*tutti*]<sub>i</sub> [<sub>NP</sub> [*i miei amici*]<sub>i</sub>]] *hanno parlato* [<sub>PP</sub> *e*<sub>i</sub> [<sub>PP</sub> *dello stesso problema*]]]

It is precisely this mechanism that is also invoked by Heim, Lasnik and May (1991) for explaining the interpretation of examples as in (28). Crucial in their analysis is that the distributor part of the reciprocal (*each* in English *each other*) raises to adjoin to the required antecedent (cf. [29]), leaving behind an NP-trace (cf. [31b], [32b]). The clause boundedness of this type of reciprocal might, thus, be triggered by the presence of an NP-trace, forcing strict locality under the assumption that there is no long-distance NP-movement.<sup>14</sup>

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14. Keep in mind that the fact that *each* can be moved non-locally in examples like (28) and (31) is due to the fact that the embedded pronoun binds the NP-trace.

There is another line of reasoning that might explain why reciprocals are locally bound. Van Riemsdijk (1985), for instance, observes that in the original formulation of the notion “Governing Category” (Chomsky 1981), there are two notions “subject” relevant for determining what is a governing category: the NP serving the grammatical function subject ([NP,S]), and INFL/Tense. The former one can be characterized as a +Theta position, the latter as a  $-\Theta$ -position. Reciprocals, for some reason, are generally assigned a theta role (+Theta), while reflexives are not necessarily assigned a theta role ( $\pm\Theta$ ): Fr. *Jean se lave* (‘Jean washes’) vs. *Jean parle de lui-même* (‘Jean speaks about him-self’). Suppose one would make the binding conditions sensitive to theta-marking specification: +Theta-marked anaphors (= all reciprocals and some reflexives) need to take theta-marked antecedents, i.e. grammatical subjects, while  $-\Theta$ -marked anaphors (some reflexives) need to take non-Theta-marked antecedents (INFL/Tense). Reciprocals, necessarily in need of a +Theta subject, will thus always be locally bound by the subject of the clause containing the anaphor. The fact that some reflexives allow non-local binding would follow from the suggestion made by Anderson (1982) that in certain complements (infinitives, subjunctives) INFL/Tense is dependent (co-indexed) upon the matrix INFL/Tense, extending the governing category beyond the immediate domain (cf. also Everaert 1986). In this way, the configuration of long-distance binding will be limited to anaphors that take INFL/Tense as its accessible subject, i.e. reflexives (depending on their  $\pm\Theta$ -specification).

Everaert (1991) offers an explanation for why “complex reflexives” like *zichzelf* would be barred from long-distance binding, contrary to “simplex reflexives” like *zich*. In the standard Binding Theory (cf. [1]), anaphoric elements are specified for the features  $\pm A$ (naphor) and  $\pm P$ (ronominal). Everaert argues that not all anaphors are similarly specified as  $\langle +A, -P \rangle$ . He suggests to reinterpret these features as specifying the domain of interpretation. Being specified for  $\langle \pm A \rangle$  indicates that an element has a domain in which it needs to be bound  $\langle +A \rangle$ , or not  $\langle -A \rangle$ . The feature  $\langle \pm P \rangle$  indicates whether an element has a minimal domain in which it needs to be bound  $\langle +P \rangle$ , or not  $\langle -P \rangle$ .<sup>15</sup> For anaphors, marked  $\langle +A, P \rangle$ , like Dutch *zich*, this will lead to the correct description of their distribution as “needs to be bound but is free in a minimal domain” (cf. [7]), allowing non-local antecedents. Anaphors, marked  $\langle +A, +P \rangle$  are characterized as “need to be bound and need to be bound in its minimal domain”, thus requiring a local antecedent.

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15. This distinction is reminiscent of Chomsky’s original Pisa approach to the Binding Theory, where a distinction was made between the Governing Category and the Minimal Governing Category of a lexical item.

If it could be argued that reciprocals, cross-linguistically, are necessarily specified as  $\langle +A, +P \rangle$ , bound in their minimal governing category, the lack of long-distance reciprocals would follow. Whatever the precise reason might be to argue for such an analysis (I refer the reader to the discussion in Everaert 1991: 104–6), the parallel between (certain) complex reflexives and reciprocals is central to this analysis: both do not participate in long-distance binding.

Finally, I will briefly explore an explanation for the locality restriction on reciprocal interpretation in the context of the Reflexivity Framework of Reinhart and Reuland (1993). This framework explores a different approach to anaphoric dependencies. The Binding Conditions define what legitimate “reflexive predicates” are:

- (33)
- a. A reflexive-marked (syntactic) predicate is reflexive.
  - b. A reflexive (semantic) predicate is reflexive-marked.
  - c. – A predicate P is reflexive iff two of its arguments are coindexed.
  - A predicate P is reflexive-marked iff either P is lexically reflexive or one of P’s arguments is a SELF-anaphor.

A predicate is reflexive-marked if one of its arguments is a SELF-marked anaphor (cf. [33]), like English *himself*. The difference between the two Dutch reflexives *zich* and *zichzelf* is that only the latter is a SELF-marked anaphor. Given that the former reflexive is not so specified it can escape locality (cf. [7a]). In such an approach reciprocals require a separate binding condition. I will not spell out the condition here<sup>16</sup> but it is clear that, like (33a,b), a reciprocally interpreted predicate will need to be reciprocally-marked. This could be the result of the predicate being lexically reciprocal (like, for instance, the *-aw* marking in Japanese) or the result of one of its arguments containing the right type of reciprocal element. One simply has to conclude that reciprocals like English *each other*, or Dutch *elkaar* are reciprocal markers just like English *himself* and Dutch *zichzelf* are SELF-marked elements. Phrasing it slightly differently, these type of anaphors act as verbal operators in the sense intended in Reinhart and Reuland (1991: 291).

Recapitulating the discussion above, it is clear that in the analyses of Van Riemsdijk (1985), Everaert (1991), or the hypothetical analysis in the Reflexivity framework, a distinction is made between two types of anaphors, those that are

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16. This topic was discussed by William Philip and Martin Everaert in a presentation on ‘Pseudo-Reciprocity’, given at the 11th Comparative Germanic Syntax Workshop, 4 November 1995, Rutgers University.

strictly local, and those that allow long-distance binding, and reciprocals belong to the former. For the moment that is simply a descriptive statement not offering us much insight. In the Belletti/Heim, Lasnik and May/Nishigauchi analyses the clause boundedness of reciprocals is derived in a different way. However, it crucially hinges on the morpho-syntactic make-up of the reciprocal, and it is clear that such properties do not hold cross-linguistically (cf. Dalrymple et al. 1998).

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# A binding theory exempt anaphor

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## 1. Introduction

While theories of grammar differ regarding the details of the Binding Theory, most generative linguists would agree that in all languages nominals that are used anaphorically have the features [ $\alpha$  anaphor] or [ $\beta$  pronominal] specified in the lexicon, which make them subject to the Binding Theory. In this paper, we shall examine anaphoric expressions in one dialect of Javanese, *Peranakan Javanese*.<sup>1</sup> We shall show that in *Peranakan Javanese*, a frequently employed anaphoric form, *awake dheen*, must be indeterminate or unspecified for the features [ $\alpha$  anaphor]/[ $\beta$  pronominal] and hence, this anaphoric form is not subject to the Binding Theory.<sup>2</sup>

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1. We borrow this term, “*Peranakan Javanese*”, from Wolff (1997).

2. Our discussion will be couched in terms of the Standard Binding Theory. In the Standard Binding Theory (Chomsky 1981), the distribution of anaphoric expressions is determined by syntactic principles that govern the conditions under which two DPs can be coreferential, as depicted in (i).

- (i) a. **Binding Condition A**  
An anaphor must be bound in its Governing Category.
- b. **Binding Condition B**  
A pronoun must be free in its Governing Category.
- c. **Binding Condition C**  
An R-expression must be free everywhere.
- d. **Governing Category**  
The Governing Category of  $\alpha$  is the minimal domain which contains  $\alpha$ , the governor of  $\alpha$ , and a subject.
- e.  $\alpha$  binds  $\beta$  iff:
  - i)  $\alpha$  is co-indexed with  $\beta$
  - ii)  $\alpha$  c-commands  $\beta$

There is a line of approach that does away with the features [ $\alpha$  anaphor] or [ $\alpha$  pro-

Before we begin to describe the primary subject-matter of this paper, it may be useful to begin with a brief presentation of the structural characteristics of Peranakan Javanese to give the reader some background information about the language being discussed. Peranakan Javanese is a basilectal variety of Javanese.<sup>3</sup> This variety is mainly spoken by ethnically Chinese native speakers living in the island of Java and is used for intra-group communication. Most of these speakers are multidialectal or multilingual; they usually switch to Standard Javanese or Indonesian when they interact with non-ethnically-Chinese speakers of Javanese or Indonesian. The data discussed in this paper were collected from two Peranakan Javanese speakers from the city of Semarang, the capital city of Central Java in Indonesia.

Similar to its closely-related neighbour, Indonesian, Peranakan Javanese lacks tense, agreement, and case morphology. Also, Peranakan Javanese, like many other Malayo-Polynesian languages, is characterized by the presence of verbal morphology that marks active and passive sentences. Most active transitive sentences in Peranakan Javanese are overtly marked by a nasal prefix on the verbs, which is glossed as “NSPF” in this paper.<sup>4</sup> When combined with roots, the nasal prefix undergoes phonological changes and appears in different forms, depending on the initial sound of the root.<sup>5</sup> According to Wolff (1997), a salient characteristic of Peranakan Javanese that distinguishes it from the varieties of Javanese spoken by non-ethnically-Chinese speakers is the large amount of material from Indonesian which is deployed alongside of Javanese in daily speech. This material is mainly lexical, but there are morphosyntactic features as well.

The paper is organized as follows. In Section 2, we present the peculiar distribution of a frequently employed anaphoric form in Peranakan Javanese,

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nominal] (Reinhart and Reuland 1993, Reuland 2001). We discuss how our data are relevant to this approach in the appendix.

3. Javanese, a member of the Malayo-Polynesian branch of the Austronesian language family, is spoken in the following areas of Indonesia: Central Java, East Java (except the island of Madura), and some eastern parts of West Java. It is the native language of more than 75,000,000 speakers (about 30% of the population of Indonesia). Well-known geographical dialects include (i) Central Javanese, spoken mainly in Semarang, Solo, and Yogyakarta, (ii) East Javanese, spoken in Malang, Pasuruan, and Surabaya, and (iii) West Javanese, spoken mainly in Cirebon. Javanese is also known as an example par excellence of a language that exhibits well-defined speech levels.
4. Some active transitive verbs like *ketok* ‘see’ and *tuku* ‘buy’ are not overtly marked by the nasal prefix.
5. See Horne (1974) and Robson (2002), inter alia, for a summary of these phonological processes.

*awake dheen*, and compare it with two other anaphoric forms, *awake dheen dhewe* and *dheen*. The latter two forms can be categorized neatly as a reflexive and a pronoun respectively. In Section 3, we discuss the Possessive DP analysis proposed by Cole et al. (2003) for the distribution of *awake dheen* and show that this analysis is not able to provide a full and correct account of the properties of *awake dheen* in Peranakan Javanese. In Section 4, we outline our proposed analysis to account for the peculiar behaviour of *awake dheen* and show that the form, while used anaphorically, does not fall into either the category of pronoun or that of reflexive.

## 2. The peculiar distribution of *awake dheen* in Peranakan Javanese

As illustrated in (1), the anaphoric expression *awake dheen* in Peranakan Javanese appears on initial examination to be a local reflexive like English *himself*.<sup>6</sup>

- (1) a. *John saw himself in the mirror.*  
 b. *Tono<sub>i</sub> ketok awake dheen<sub>i</sub> nggon kaca.*  
 Tono see body.3 3SG in mirror  
 ‘Tono saw himself in the mirror.’

However, *awake dheen* exhibits a distribution different from that of a local reflexive like English *himself*. First, as seen in (2), a local reflexive like English *himself* can only be bound by a c-commanding antecedent like *John’s teacher*, while *awake dheen* can refer to either a c-commanding antecedent like *gurue Tono*, a non-c-commanding antecedent like *Tono*, or a discourse antecedent.<sup>7</sup>

- (2) a. [*John<sub>j</sub>’s teacher*]<sub>i</sub> saw *himself*<sub>i/\*j/\*k</sub> in the mirror.  
 b. [*Gurue Tono<sub>j</sub>*]<sub>i</sub> ketok *awake dheen*<sub>i/j/k</sub> nggon kaca.  
 teacher.3 Tono see body.3 3SG in mirror  
 ‘Tono’s teacher saw himself/him/her in the mirror.’

6. The anaphor *awake dheen* consists of three morphemes, namely (i) *awak* meaning ‘body’, (ii) the third person possessive morpheme *-e*, and (iii) the third person pronoun *dheen*. Without *dheen* ‘3sg’, the nominal expression *awake* can literally mean ‘his/her body’ and therefore we gloss *awak* as ‘body’.

7. The third person pronoun *dheen* in *awake dheen* can be translated as *him* or *her* depending on the context (and is therefore glossed as ‘3SG’ in this paper) since no gender distinction on the third person pronouns is made in Peranakan Javanese.

Second, unlike local reflexives, *awake dheen* can refer either to a non-local antecedent or to a local antecedent, as illustrated in (3).

- (3) a. *John<sub>j</sub> said that I thought [Jim<sub>i</sub> saw himself<sub>i/\*j/\*k</sub> in the mirror].*  
 b. *Ali<sub>j</sub> ngomong nek aku pikir [Tono<sub>i</sub> ketok awake*  
*Ali NSPF.say COMP 1SG think Tono see body.3*  
*dheen<sub>i/j/k</sub> nggon kaca].*  
*3SG in mirror*  
 ‘Ali said that I thought that Tono saw himself/him in the mirror.’

The data seen in (1)–(3) appear to indicate that *awake dheen* has a dual status, functioning both as a reflexive and as a pronoun. The “dual status” of the form is problematic for the Binding Theory since it does not fit neatly into the category “reflexive” or the category “pronoun”.<sup>8</sup>

In addition to the anaphoric form *awake dheen*, Peranakan Javanese has two other forms, *awake dheen dhewe* and *dheen*, that can be categorized neatly as a reflexive and a pronoun respectively.<sup>9</sup> First, as seen in (4), *awake dheen dhewe* behaves exactly as expected for a local reflexive, i.e., it can only be bound by a c-commanding antecedent like *gurue Tono* ‘Tono’s teacher’; it cannot refer to a non-c-commanding antecedent like the possessor DP *Tono*, or a discourse antecedent.

- (4) [*Gurue Tono<sub>j</sub>]<sub>i</sub> ketok awake dheen dhewe<sub>i/\*j/\*k</sub> nggon*  
*teacher.3 Tono see body.3 3SG self in*  
*kaca.*  
*mirror*  
 ‘Tono’s teacher saw himself in the mirror.’

Second, as shown in (5), *awake dheen dhewe* cannot refer to a non-local antecedent.

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8. As far as its grammatical properties are concerned, *awake dheen* appears to be licensed whenever either *dheen* (pronoun) or *awake dheen dhewe* (reflexive) is licensed. We are not aware of any discourse or pragmatic factors that determine the distribution of *awake dheen* and will not delve into this in our paper.

9. Note that *dhewe* ‘self’ is invariant – the final *-e* in this morpheme is not a third person possessor ending as in *awake*, as seen in the following paradigm:

- (i) a. *awake dheen dhewe* ‘himself/herself’  
 b. *awakku dhewe* ‘myself’  
 c. *awakmu dhewe* ‘yourself’

- (5) *Ali<sub>j</sub> ngomong nek aku pikir [Tono<sub>i</sub> ketok awake dheen*  
 Ali NSPF.say COMP 1SG think Tono see body.3 3SG  
*dhewe<sub>i/\*j/\*k</sub> nggon kaca*.  
 self in mirror

‘Ali said that I thought that Tono saw himself in the mirror.’

The form *dheen*, in contrast, behaves exactly as expected for a pronoun. As the examples below show, *dheen* exhibits the typical distribution of a pronoun and is in a complementary distribution with *awake dheen dhewe*, i.e., it cannot be bound by a local c-commanding antecedent like *gurue Tono* ‘Tono’s teacher’, but it can refer to a non-c-commanding antecedent like the possessor DP *Tono*, a discourse antecedent, or a non-local c-commanding antecedent.

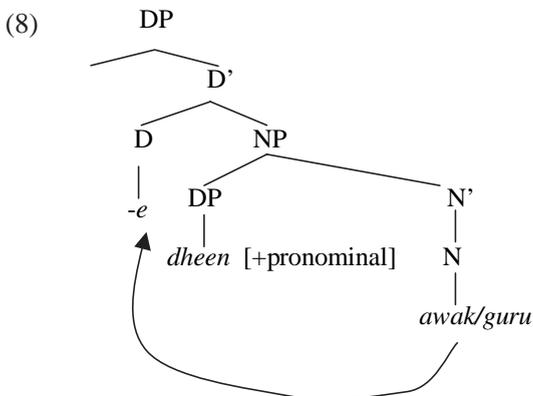
- (6) [*Gurue Tono<sub>j</sub>*]<sub>i</sub> ketok *dheen<sub>\*i/j/k</sub> nggon kaca*.  
 teacher.3 Tono see 3SG in mirror  
 ‘Tono’s teacher saw him/her in the mirror.’
- (7) *Ali<sub>j</sub> ngomong nek aku pikir [Tono<sub>i</sub> ketok dheen<sub>\*i/j/k</sub> nggon*  
 Ali NSPF.say COMP 1SG think Tono see 3SG in  
*kaca*.  
 mirror

‘Ali said that I thought that Tono saw him/her in the mirror.’

### 3. The possessive DP analysis

Cole et al. (2003) proposed an account for the peculiar behavior of *awake dheen* in Peranakan Javanese by taking *awake dheen* as having the same syntactic structure and properties as a normal DP with a pronominal possessor, along the lines of *gurue dheen* ‘his teacher’.<sup>10</sup> Under this analysis, *awake dheen* differs from *gurue dheen* only in that *awak* ‘body’ makes no independent semantic contribution to the meaning of the sentence. Rather, it has the semantics of an identity operator. Thus, in this analysis, the pronoun *dheen* is taken to be the anaphoric expression and the DP *awake dheen* serves as its binding domain. The hypothesized structure is given in (8).

10. An analysis along these lines was proposed for Turkish by Kornfilt (2001) for the inflected third-person reflexive (*kendi* + inflection). Kornfilt characterized *kendi*+inflection as AgrPs headed by a strong agreement element and with an internal structure that includes a pronominal specifier, *pro*, and a bare reflexive.



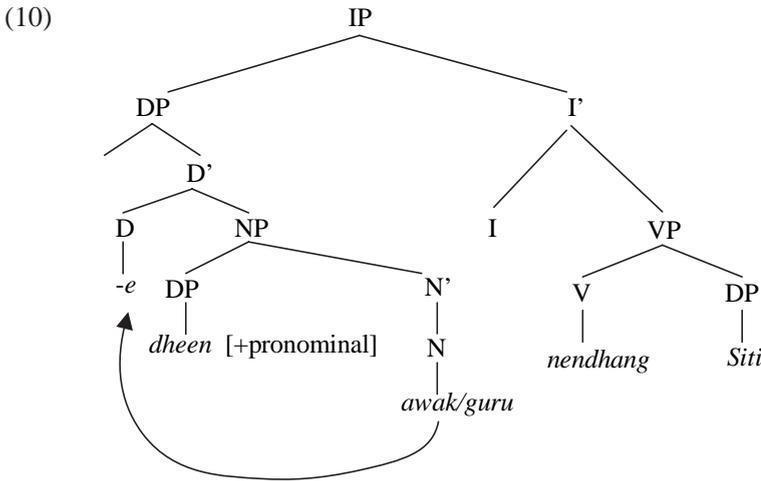
In (8), the morpheme, *-e*, is a possessive marker and the possessor is the third person singular pronoun *dheen*, base-generated as the specifier of NP. The morphological requirement of the bound morpheme *-e* to attach to a noun attracts *awak* ‘body’/ *guru* ‘teacher’ from N to D, deriving the surface word order *awake dheen* and *gurue dheen*. This proposed structure provides a natural explanation for the fact that *awake dheen* can have either a local or a non-local antecedent. In this structure, only the pronoun *dheen* is relevant for binding, not the larger expression, *awake dheen*. The binding domain for the pronoun *dheen* is the whole DP, namely the smallest domain containing a subject, *dheen*, and a governor, *awak*.<sup>11</sup> The pronoun in the anaphoric expression *awake*+pronoun is subject to Condition B of the Binding Theory, and Condition B is always satisfied within the DP *awake dheen*. Thus, syntactically, the pronoun *dheen* is free to refer to an antecedent outside the phrase *awake dheen*. This structure gives the appearance that *awake dheen* has the dual status of being a reflexive and a pronoun, but in fact only *dheen* is relevant for binding, and *dheen* is always a pronoun. This explains the data given in (1b), (2b), and (3b).

The Possessive DP analysis, however, suffers from one important drawback: It fails to distinguish the contrast shown by the following pair of examples.

11. We assume that *awak* ‘body’ assigns the possessive theta-role and the genitive Case in structure (8). It might be the case that the possessive theta-role and the genitive case are assigned by some other head (e.g. D) in the nominal expression. Whichever head assigns the possessive theta-role and the genitive Case, this head must be located inside the nominal expression and therefore the nominal expression serves as the governing category (binding domain).

- (9) a. *Awake dheen*<sub>\*i/j</sub> *nendhang Siti*<sub>i</sub>.  
 body.3 3SG NSPF.kick Siti  
 ‘He/she kicked Siti.’
- b. *Gurue dheen*<sub>i/j</sub> *nendhang Siti*<sub>i</sub>.  
 teacher.3 3SG NSPF.kick Siti  
 ‘His/her teacher kicked Siti.’

Consider the tree structure below for the sentences in (9).



The Possessive DP Analysis claims that only *dheen* is relevant for binding and Condition B is always satisfied within the DP *awake dheen*. Since a pronoun can have a non-c-commanding antecedent, it follows that *dheen* in both (9a) and (9b) should be able to refer to its non-c-commanding antecedent *Siti*. However, this analysis provides a correct account only for (9b), but not for (9a) since *dheen* in *awake dheen* cannot be coreferential with *Siti*. We therefore conclude that this is not the right analysis for *awake dheen*, and that (9a) and (9b) cannot have the same structure.

#### 4. The indeterminacy of feature content hypothesis

We have shown that the Possessive DP Analysis is not able to provide a correct account for the full distribution of *awake dheen* in Peranakan Javanese. What then is the right analysis for this form? We propose that *awake dheen* should be analyzed as an anaphoric form, but it is one that is indeterminate, or unspecified

in the lexicon, for the features [ $\alpha$  pronominal]/[ $\beta$  anaphor] (hence, the Indeterminacy of Feature Content Hypothesis).<sup>12</sup> That is, *awake dheen* is an anaphor that is not subject to the Binding Theory.

Let us see how this analysis accounts for the data in (1b), (2b), (3b), and (9a). According to the Indeterminacy of Feature Content Hypothesis, *awake dheen* is neither a reflexive nor a pronoun. Thus, it is able to take a c-commanding antecedent like *Tono* in (1b), repeated below, or a non-c-commanding antecedent like *Tono* in (2b), also repeated below.

- (1) b. *Tono<sub>i</sub> ketok awake dheen<sub>i</sub> nggon kaca.*  
 Tono see body.3 3SG in mirror  
 ‘Tono saw himself in the mirror.’
- (2) b. [*Gurue Tono<sub>j</sub>*]<sub>*i*</sub> *ketok awake dheen<sub>i/j/k</sub> nggon kaca.*  
 teacher.3 Tono see body.3 3SG in mirror  
 ‘Tono’s teacher saw himself/him/her in the mirror.’

A long distance or a discourse antecedent would also be possible since the Binding Theory imposes no locality restrictions on *awake dheen* and it therefore can refer to a non-local antecedent like *Ali* in (3b), repeated below.

- (3) b. *Ali<sub>j</sub> ngomong nek aku pikir [Tono<sub>i</sub> ketok awake*  
 Ali NSPF.say COMP 1SG think Tono see body.3  
*dheen<sub>i/j/k</sub> nggon kaca].*  
 3SG in mirror  
 ‘Ali said that I thought that Tono saw himself/him in the mirror.’

Example (9a), repeated below, is ruled out because it violates Condition C of the Binding Theory, since the R-expression, *Siti*, is bound by a coindexed c-commanding nominal, *awake dheen* (and not by the non-c-commanding *dheen*, as in the Possessive DP Analysis).

- (9) a. *Awake dheen<sub>\*i/j</sub> nendhang Siti<sub>i</sub>.*  
 body.3 3SG NSPF.kick Siti  
 ‘He/she kicked Siti.’

Since the Indeterminacy of Feature Content Hypothesis successfully accounts for the distribution of *awake dheen*, we conclude that *awake dheen* in Peranakan

12. The Indeterminacy of Feature Content Hypothesis was initially proposed by Cole and Hermon (2005) to account for the peculiar distribution of the anaphoric form *dirinya* in Malay/Indonesian.

Javanese is unspecified in the lexicon for the features [ $\alpha$  anaphor]/[ $\beta$  pronominal]. It is on this basis that we claim that Peranakan Javanese is an instance of a language with an anaphoric form that is subject to neither Condition A nor Condition B of the Binding Theory.

Note that while the Indeterminacy of Feature Content Hypothesis challenges the universality of the Binding Theory, it is not the existence of the Binding principles, or even the form of the Binding Theory that varies from language to language, but simply whether an expression in a particular language is subject to the Binding Theory. Thus, we do not challenge the universalist claim that all forms that are [-pronominal, +anaphor] will conform to Condition A and all forms that are [+pronominal, -anaphor] will conform to Condition B. Rather, our challenge is restricted to the notion that any form that has an anaphoric function must be either a pronoun or (bound) anaphor. We argue that such a form can be neither, as in the case of *awake dheen* in Peranakan Javanese. Put differently, while grammatical principles (e.g. Binding Theory) are universal, words may differ in their grammatical features. This may give the false impression that the principles themselves are subject to exceptions.

## 5. Conclusions

We have discussed in this paper two possible analyses for the peculiar distribution of the anaphoric expression *awake dheen* in Peranakan Javanese. We conclude that the Possessive DP Analysis is not able to provide a correct account for the full distribution of *awake dheen* in Peranakan Javanese. We propose instead that *awake dheen* should be analyzed as being unspecified in the lexicon for the features [ $\alpha$  anaphor]/[ $\beta$  pronominal]. As a consequence of this analysis, we argue that the reflexive system used in different languages may differ with respect to whether or not the anaphoric forms are subject to the Binding Theory, and that the anaphoric expression *awake dheen* in Peranakan Javanese is subject to neither Condition A nor Condition B of the Binding Theory. This does not, however, constitute evidence that there are languages in which the Binding Theory fails to apply. Indeed, Peranakan Javanese provides compelling evidence that the Binding Theory is active in languages containing forms that appear to be exempt from the Binding Theory.

## Appendix

The discussion in the body of our paper was couched in the standard binding theory. Based on the distribution of *awake dheen*, we concluded that there must

exist an anaphor whose lexical content does not include the features [ $\alpha$  anaphor/ $\beta$  pronominal], contrary to what has been generally assumed by proponents of the standard binding theory. As we noted above, however, our conclusion does not necessarily argue against the validity of the standard binding theory. All we claim is that the standard binding theory should not be taken to apply to all forms that have anaphoric functions. Anaphoric expressions appear to exist that are not subject to the binding theory.

It is possible in principle to take a stronger position than the one we have taken in the body of the paper. For instance, one might take the existence of the binding theory exempt anaphor *awake dheen* to show that features like [ $\alpha$  anaphor/ $\beta$  pronominal] are unnecessary in characterizing anaphoric expressions and to try to derive the properties of such expressions in terms of something else.<sup>13</sup> In fact, there is an important line of research in the literature which claims that the properties of anaphoric expressions should not be derived from the features [ $\alpha$  anaphor/ $\beta$  pronominal], but rather from the lexical properties of each anaphoric expression. Given the possibility of such an approach, in this appendix we would like to discuss briefly how the data we presented in this paper could be accommodated in the context of this alternative line of research. However, we would like to point out, before doing so, that we remain unconvinced that the stronger approach provides a more insightful view of the data.

Reuland (2001), building on such earlier work as Reinhart and Reuland (1993), argues that the distribution of anaphoric expressions should be derived from the syntactic/morphological and semantic properties of the lexical items. The fact that the Javanese pronoun *dheen* in (10) cannot have a local antecedent can be attributed to many sources:

- (10) *Tono<sub>i</sub> ketok dheen<sub>\*i/j</sub> nggon kaca.*  
 Tono see 3SG in mirror  
 ‘Tono saw him in the mirror.’

A pronoun can in principle be used as a free variable receiving a value directly from the discourse or as a bound variable, as shown below:

- (11) a. Tono  $\lambda x$  (x ketok y)  
 b. Tono  $\lambda x$  (x ketok x)

Reuland (2001) adopts, to some extent, Grodzinsky and Reinhart’s (1993) Rule in (12) to explain the standard Condition B effect seen in (10):<sup>14</sup>

13. We thank Eric Reuland for pointing out this issue.

14. Reuland (2001: 471) eventually replaces (12) by Rule BV:

## (12) Rule 1: Intrasentential coreference

NP A cannot corefer with NP B if replacing A with C, C a variable A-bound by B, yields an indistinguishable interpretation.

The coreference representation in (11a) where the value of *y* happens to be *Tono*, is blocked by the bound variable version in (11b) in accordance with Rule 1.<sup>15</sup> The bound variable option is not available either, since the predicate *ketok* has two arguments to assign but the semantic representation has only one argument *x* (two occurrences of one argument *x*), violating the thematic requirement of the two place predicate *ketok*. Hence, *dheen* cannot have its coargument as its antecedent. In order to get around the violation of the thematic requirement, the second occurrence of *x* needs to be protected. In Javanese, this protective mechanism is instantiated by adding *awake* to *dheen*. Replacing *dheen* with *awake dheen*, as in (13), we would get the semantic representations in (14).

- (13) *Tono<sub>i</sub> ketok awake dheen<sub>i/j</sub> nggon kaca.*  
 Tono see body.3 3SG in mirror  
 ‘Tono saw him in the mirror.’

## (i) Rule BV: Bound variable representation

T may not translate an expression E' in Sem' with syntactically independent NPs A' and B' into an expression E in Sem in which A is A-bound by B, if there is an expression E'' resulting from replacing A' in E' with C', C' an NP such that B' heads an A-CHAIN tailed by C' and T also translates E'' into E.

Roughly speaking, (i) means that if an anaphor without full  $\phi$ -features can replace a pronoun with full  $\phi$ -features yielding the same semantic representation, the anaphor version is chosen. We do not include Reuland's BV Rule in the text because introducing his rule entails introducing a number of nontrivial assumptions. Grodzinsky and Reinhart's (1993) Rule seems to be equivalent to Reuland's rule for the purposes of our discussion.

15. As indicated by the name of the Rule, the bound variable representation blocks the coreference representation only within a sentence boundary. This is to allow a sentence like (i): when a pronoun and its antecedent are not in a local relationship, we need to allow both representations.

(i) Everyone thinks that John like *him*.

However, restricting the rule to a local domain does not seem to be sufficient. In cases like (ii), the coreference representation should not be blocked by the bound variable representation:

(ii) Everyone like *his* father.

Presumably, we may need to restrict Rule I to coarguments of the same predicate.

- (14) a. Tono  $\lambda x$  (x ketok f(y))  
 b. Tono  $\lambda x$  (x ketok f(x))

Literally,  $f(x/y)$  is interpreted as  $x/y$ 's body. Since, however, the lexical meaning of *awak* is bleached (i.e. is an identity function),  $f(x/y)$  can be equated with its antecedent. Now that the two place predicate *ketok* has two distinct arguments to receive its theta roles,  $x$  and  $f(x/y)$ , the sentence is grammatical. In contrast to (11), the bound variable representation in (14b) does not block the coreference counterpart in (14a). Presumably, as noted in Note 15, this is because the variables are not coarguments of the predicate.<sup>16</sup> The availability of the two representations captures correctly the free distribution of *awake dheen*. Unlike *awake dheen*, *awake dheen dhewe* must have a local antecedent.

- (15) *Ali<sub>i</sub> ngomong nek Tono<sub>j</sub> ketok awake dheen dhewe<sub>\*i/j/\*k</sub>*  
 Ali NSPF.say COMP Tono see body.3 3SG self  
*nggon kaca.*  
 in mirror  
 'Ali said that Tono saw himself in the mirror.'

The locality condition on *awake dheen dhewe* follows from the movement of *dhewe* to V. The semantics of *dhewe* can be roughly represented as follows:

- (16)  $[[\text{dhewe}]] = \lambda x \lambda y \quad [x = y]$

The movement of *dhewe* to the verb *ketok* results in a kind of predicate modification, as illustrated below:

- (17) a.  $[[\text{ketok}]] = \lambda x \lambda y \quad [y \text{ see } x]$   
 b.  $[[\text{dhewe}]] = \lambda x \lambda y \quad [x = y]$   
 c.  $[[\text{dhewe} + \text{ketok}]] = \lambda x \lambda y \quad [y \text{ see } x \ \& \ y = x]$

The movement of *dhewe* requires the predicate *ketok* to have two identical coarguments, as shown in (17c). Hence, the locality condition is imposed whenever there is *dhewe*.

Although Reuland's theory characterizes the distribution of most of the examples in this paper (setting aside the technical difficulties in distinguishing the bound variable/coreference blocking patterns noted in (11) and (13)), there is a

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16. It is not clear to us whether the reason we suggested in the text would be the one Reuland would adopt to explain the coreference reading in (13). Whatever it might be, something like the one we suggested seems to be required to differentiate (10) from (13).

potential problem for this approach. As pointed out by Reuland (p.c.), it is not clear why *awake dheen* in subject position cannot be allowed to corefer with one of its coarguments. Consider example (9a), repeated here as (18).

- (18) *Awake dheen*<sub>\*i/j</sub> *nendhang Siti*<sub>i</sub>.  
 body.3 3SG NSPF.kick Siti  
 ‘He/she kicked Siti.’

In contrast, *awake dheen* in object position, as shown in (13) and (14), can be interpreted either as a bound variable or as a free variable. The two options are, in principle, predicted to be available in subject position unless something else blocks one or the other of the options. The bound variable option is ruled out because its potential antecedent *Siti* is not structurally high enough to c-command the variable. However, there seems to be no clear reason why the coreference version should be blocked in (18), especially given that sentence (9b), repeated here as (19), which has the same structure as (18), allows the coreference reading.

- (19) *Gurue dheen*<sub>i/j</sub> *nendhang Siti*<sub>i</sub>.  
 teacher.3 3SG NSPF.kick Siti  
 ‘His/her teacher kicked Siti.’

Reuland (p.c.) suggests that the unavailability of the coreference reading in (18) might be due to the fact that the meaning of the predicate *kick* is not congruent with *awake dheen* as the subject. *Her<sub>i</sub> body kicked Siti<sub>i</sub>* seems to make little sense. He predicts (18) to be grammatical in a situation in which *his/her<sub>i</sub> body V Siti<sub>i</sub>* makes sense. However, speakers seemed to rule out sentence (18) no matter what predicate we tried.

Reuland’s proposal loses some plausibility since the meaning *body* seems to have been lost in many instances of *awake dheen*. Why would the implausibility of *her body kicked Siti* be relevant if *awake dheen* does not mean ‘her body’ in this sentence? Certainly, we need to try more predicates with more informants to draw a definite conclusion about Reuland’s prediction. Even if Reuland’s prediction turns out to be wrong, this does not mean that (18) is a definitive counter example to his theory. There could be various ways to account for (18). Perhaps the Condition C effects observed in (18) could be incorporated into Reuland’s theory in some way. For instance, one might formulate a rule that blocks reverse binding/coreference when switching the relevant NPs would lead to an indistinguishable interpretation. Something like this would block (18) because of the possibility of *awake dheen* occurring in object position. Such an approach seems quite arbitrary to us and not to provide a principled explanation

of the ungrammaticality of (18). Other solutions might be possible. However, we will not discuss this approach in greater detail since the burden is on proponents of Reuland's approach to show how that theory might capture such problematic examples as (18). We shall leave the plausibility of the necessary adaptations for others to evaluate.

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# From intensive to reflexive: The prosodic factor

Anne Zribi-Hertz

## 1. Introduction<sup>1</sup>

In this paper I return to the interpretive contrast first noted in Zribi-Hertz (1980) and also discussed in Zribi-Hertz (1995, 2003), between the English examples in (1) and their French counterparts in (2):

- (1) a. *John<sub>Z</sub> is proud of him<sub>\*z/k</sub>.*  
b. *?\*I am proud of me.*  
c. *John<sub>Z</sub> is proud of him<sub>Z</sub>self.*  
d. *I am proud of myself.*
- (2) a. *Jean<sub>Z</sub> est fier de lui<sub>Z/k</sub>.* (= [1a])  
b. *Je suis fier de moi.* (= [1b])  
c. *Jean<sub>Z</sub> est fier de lui<sub>Z</sub>-même.* (= [1c])  
d. *Je suis fier de moi-même.* (= [1d])

English simplex pronouns of the *him* paradigm (henceforth, HIM) exhibit disjoint-reference effects in prepositional contexts such as (1a), while French pronouns of the *lui* paradigm (henceforth, LUI) allow for the coreferential reading in examples such as (2a). As argued in Zribi-Hertz (1980, 1995, 2003), the availability of the coreferential reading in French is crucially sensitive to the lexical context, and more precisely, to whether or not the semantic relation expressed

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by the predicate and the preposition is *other-directed* ( $\pm$ od),<sup>2</sup> i.e. favours or disfavours disjoint reference, as illustrated by (3) vs. (4):

- |  |  |
|--|--|
| <p>(3) [-od] contexts:<br/>coreference felicitous</p> <p>a. <i>Jean<sub>z</sub> est fier/content de lui<sub>z/k</sub>.</i><br/>'John is proud of/pleased with 3M.SG'</p> <p>b. <i>Jean<sub>z</sub> doit penser à lui<sub>z/k</sub>.</i><br/>'John must think of/about 3M.SG'</p> <p>c. <i>Jean<sub>z</sub> a honte de lui<sub>z/k</sub>.</i><br/>'John is ashamed of 3M.SG'</p> <p>d. <i>Jean<sub>z</sub> est inquiet pour lui<sub>z/k</sub>.</i><br/>'John is worried about 3M.SG'</p> <p>e. <i>Je suis content de moi.</i><br/>'I am pleased with 1SG'</p> | <p>(4) [+od] contexts:<br/>coreference infelicitous</p> <p>a. <i>Jean<sub>z</sub> est dépendant/jaloux de lui<sub>*z/k</sub>.</i><br/>'John is dependent on/jealous of 3M.SG'</p> <p>b. <i>Jean<sub>z</sub> {tient/est attaché} à lui<sub>*z/k</sub>.</i><br/>'John is attached to 3M.SG'</p> <p>c. <i>Jean<sub>z</sub> a besoin de lui<sub>*z/k</sub>.</i><br/>lit.: 'John has need of 3M.SG'</p> <p>d. <i>Jean<sub>z</sub> est utile pour lui<sub>*z/k</sub>.</i><br/>'John is useful for 3M.SG'</p> <p>e. *<i>Je suis dépendant de moi.</i><br/>'I am dependent on 1SG'</p> |
|--|--|

The semantic property labelled [ $\pm$ od] may be assessed independently from pronoun anaphora. In the following English and French examples, the internal and external arguments of [-od] predicates may intersect in reference (licensing the inclusive reading transcribed as 'z + k'), while [+od] predicates disallow referential intersection and thus force their arguments to be construed as referentially disjoint:

- (5) [-od] contexts: referential intersection felicitous
- a. *Chomsky<sub>z</sub> {is {proud of/ashamed of/worried about}/must think of} the MIT linguists<sub>z+k/k</sub>.*
- b. *Chomsky<sub>z</sub> {{est fier des/a honte des/est inquiet pour les}/doit penser aux} linguistes<sub>z+k/k</sub> du MIT.*
- (6) [+od] contexts: referential intersection disallowed > DR effect
- a. *Chomsky<sub>z</sub> is {jealous of/dependent on/attached to} the MIT linguists<sub>\*z+k/k</sub>.*
- b. *Chomsky<sub>z</sub> {est jaloux des/est dépendant des/tient aux} linguistes<sub>\*z+k/k</sub> du MIT.*

In English, although referential intersection is possible between the lexical arguments of [-od] predicates such as *proud+of*, coreference is impossible when

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2. This term is borrowed from König and Vezzozi (2004).

the internal argument is a pronoun, as in (1a). In French, on the other hand, coreference is available for LUI wherever referential intersection is allowed for a lexical noun phrase.

I shall admit the well-supported diachronic assumption (Faltz 1985; Levinson 1991; Keenan 2002; van Gelderen 1999; König and Siemund 1999, 2000a,b; König and Vezzosi 2004) that complex pronouns such as English HIMSELF and French LUI-MÊME, which were labelled *M-pronouns* in Zribi-Hertz (1995), start out as intensified pronouns, in the sense of König (1991), König and Siemund (1999) and Siemund (2000), and may eventually develop into reflexivity markers. As complex words, M-pronouns are formed of a simplex pronoun minimally specified for person,<sup>3</sup> and of a focus particle (*self* or *même*) which König (1991) calls an “intensifier”.<sup>4</sup> At word-level, the pronoun component of M-pronouns is unstressed, with word stress falling on the intensifier *self* or *même*. Correlatively, M-pronouns are banned from the ostensive use which would require focal accent<sup>5</sup> on the pronoun itself (Zribi-Hertz 1995). As regards interpretation, intensifiers are characterized by König (1991), König and Siemund (1999, 2000a,b), König and Vezzosi (2004) and Siemund (2000) as a class of focus markers involving the selection of one or a subset of a given set of referents.<sup>6</sup> Under König’s (1991) analysis, what semantically characterizes intensifiers among other focus markers is that they signal the selected referent as “central” (König 1991), as opposed to the other members of the set construed as “peripheral”. From a syntactic point of view, English SELF-pronouns (henceforth, HIMSELF<sup>7</sup>) used as intensifiers occur as noun-phrase adjuncts in such examples as (7):

- 
3. English SELF-pronouns are morphologically specified for person, number and semantic gender in the 3rd-person. French MÊME-pronouns are similarly specified with the exception of *soi-même*, discussed below, which is unspecified for gender and number.
  4. Whether we should analyze English SELF-pronouns as possessive nominals (*myself* parallel to *my book*) or as adjunction structures (English *me+self* parallel to German *Hans selbst*) is an open issue which is not directly relevant for this study. In any case, French MEME-pronouns clearly cannot have a possessive structure, since *même* is an adjective.
  5. I will be using two different terms, *accent* and *stress*, to refer to phrasal and word prosody, respectively.
  6. This type of focalization corresponds to what Erteschik-Shir (1997) calls *restrictive focus*.
  7. Within the running text, capitalized pronouns (HIM, HIMSELF, LUI, LUI-MEME) denote paradigms (e.g., HIM stands for *me, you, him, her, us, them*). Within examples, however, capitals are used as in Buring (1997, 2005) to indicate the position of primary accent.

- (7) *John took possession of his new office. He opened all the cabinets and all the drawers and found many interesting documents and carbon copies of letters sent to various people. In the top right-hand one was an envelope addressed to **John<sub>z</sub> himself<sub>z</sub>**.*

Baker (1995), König and Siemund (1999, 2000a,b), König and Vezzosi (2004) and Siemund (2000) propose to analyze A-free<sup>8</sup> occurrences of HIMSELF, as illustrated in (8a), as syntactically parallel to the case illustrated in (7), i.e. as noun-phrase adjuncts supported by a pronoun reduced under identity, as represented in (8b):

- (8) [same context as (7)]
- a. *In the top right-hand one was an envelope addressed to himself.*
  - = b. *In the top right-hand one was an envelope addressed to [ $\emptyset_z$ ] himself<sub>z</sub>].*

As argued in some detail by Baker (1995), this analysis correctly predicts the semantic properties of A-free HIMSELF, which are thoroughly similar to those of adnominal HIMSELF.

Under this general analysis, whenever Modern English HIMSELF is not overtly adjoined to a noun phrase as in (7), it is either bound by an argument, i.e. A-bound, as in (1c,d), or A-free, as in (8a). In the former case it is assumed to occur in argument position, while in the latter case it is assumed to be adjoined to a covert pronoun.

Like English HIMSELF, French LUI-MEME is morphologically an intensified pronoun. It however appears that the distribution of LUI-MEME in Modern French is more restricted than that of English HIMSELF. One obvious difference between English and French which correlates with the HIMSELF/LUI-MEME distributional contrast is that in French, non-clitic pronouns (the ones which may support an intensifier and thus form M-pronouns) are only available in a subset of noun-phrase positions. In particular, accusative and dative pronominal arguments must be realized as clitics, and correlatively, cannot be realized as strong pronouns, as shown in (9):

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8. The occurrences of HIMSELF which I call A-free (A for argument) are called *locally free* in Chomsky (1981) and Baker (1995), *exempt anaphors* in Pollard and Sag (1992) and *logophors* in Reinhart and Reuland (1993).

- (9)
- |  |  |                                 |
|--|--|---------------------------------|
| lexical noun phrase  | clitic pronoun   | nonclitic pronoun               |
| a. <i>Jean voit Paul.</i><br>'John sees Paul.'             | a'. <i>Jean<sub>Z</sub> le<sub>*Z/K</sub> voit.</i><br>'John sees him.'            | a''. * <i>Jean voit lui.</i>    |
| b. <i>Jean parle à Paul.</i><br>'John is talking to Paul.' | b'. <i>Jean<sub>Z</sub> lui<sub>*Z/K</sub> parle.</i><br>'Jean is talking to him.' | b''. * <i>Jean parle à lui.</i> |

The clitic pronouns in (9a') and (9b') exhibit regular disjoint-reference effects – they can never be A-bound. The so-called “voix pronominale” (‘pronominal voice’), an inflectional paradigm involving a special clitic (*se* in the third person) obligatorily co-indexed with the local subject, as well as special auxiliary selection (*être*, with all verbs), is the only available reflexive-marking strategy for accusative and dative arguments:<sup>9</sup>

- (10)
- |  |                                       |
|--|---------------------------------------|
| a. <i>Jean<sub>Z</sub> se<sub>Z/*K</sub> voit.</i><br>'John sees himself.'           | a'. * <i>Jean voit lui(-même).</i>    |
| b. <i>Jean<sub>Z</sub> se<sub>Z/*K</sub> parle.</i><br>'John is talking to himself.' | b'. * <i>Jean parle à lui(-même).</i> |

French clitic pronouns are affix-like elements (Kayne 1975) which are morphologically attached to a verb or auxiliary (Miller 1992; Miller and Monachesi 2003). In declarative clauses, they surface as proclitics. They cannot bear focal accent,<sup>10</sup> nor be conjoined or modified, nor support an intensive adjunct. In order

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9. For a recent and enlightening analysis of the *voix pronominale*, cf. Reinhart and Siloni (2005).

10. In imperative clauses, French object clitics occur postverbally, hence may fall under the phrase-final accent. They however display properties which qualify them as clitics: morphological attachment to the verb, inability to be modified or conjoined, or to fall under narrow focus (cf. Miller 1992), cf.:

- (i)
- |   |   |
|---|---|
| a. <i>Parle-moi.</i><br>talk-1SG<br>'Talk to me.'   | b'. <i>Parle-moi à MOI, pas à LUI.</i><br>talk-1SG.CL NEG (to) 3M.SG<br>'Talk to ME, not to HIM.' |
| c. * <i>Parle-moi et lui.</i><br>talk-1SG and 3M.SG |   |
| d. * <i>Parle-moi seul.</i><br>talk-1SG alone       |   |

for the referent of a clitic pronoun to be construed as focused, the clitic must be doubled by a strong simplex or complex pronoun in postverbal position, e.g.:<sup>11</sup>

- (11) a. *Ce film l<sub>z</sub>' ennuie {LUI<sub>z</sub> (-MEME)}.*<sup>12</sup>  
 this film 3M.SG.ACC bore.PRS.3SB 3M.SG -INT  
 'This film bores {HIM/even himself}.'
- b. *Jean se<sub>z</sub> voit {LUI<sub>z</sub>(-MEME)}.*  
 'John sees (even) himself.'

The strong pronoun in such structures may be assumed to be a non-argument (cf. Kayne 2001) since it bears no features of its own – its features replicate those of the clitic, maybe with the exception of Case which, if “absorbed” by the clitic, should be unspecified on the strong pronoun. That the clitic-doubling strong pronoun should be deficient for Case is supported by the fact that it does not alternate with a lexical noun phrase, as witnessed by the contrast between (11a) and (12):

- (12) \**Ce film l' ennuie JEAN.*  
 this film 3M.SG.ACC bore.PRS.3SG John

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11. This description is at odds with the one proposed in Cardinaletti and Starke (1999), who give such examples as (i) as well-formed with the pronoun *elle* construed under narrow focus:

- (i) \**J' ai vu Marie puis j' ai vu elle.*  
 I SG have.PRS.ISG seen Mary and then I SG have.PRS.ISG seen 3F.SG

I reject this example as ill-formed, and so do all my French-speaking consultants, however strongly the pronoun may be stressed. For (i) to become grammatical, a clitic (agreeing with the strong pronoun) must be inserted, even if the referent of the pronoun should be in sight of the speaker:

- (ii) *J' ai vu Marie<sub>k</sub> puis je l'<sub>z</sub> ai vue ELLE<sub>z</sub>.*  
 I SG have.PRS.ISG seen Mary and then I SG 3F.SG have.PRS.ISG  
 seen.F.SG 3F.SG  
 'I saw Mary<sub>k</sub> and then I saw HER<sub>z</sub>.'

12. Abbreviations used in glosses: ACC = accusative; CL = clitic; DAT = dative; DEF = definite article; DEM = demonstrative; F = feminine (gender); INF = infinitive; IMPF = imperfect tense; INT = intensifier; M = masculine (gender); NEG = negation; NOM = nominative; PL = plural; PP = past participle; PRS = present tense; PST = past; SG = singular; SBV = subjunctive mood; 1, 2, 3 = first, second, third person.

French pronouns of the LUI paradigm may thus be analyzed as arguments whenever they alternate with lexical noun phrases (as in [2]), and as non-arguments (adjuncts) when they occur as clitic doublers, as in (11). Since accusative and dative pronouns are realized as clitics, non-clitic LUI only occurs as an argument under a preposition, as exemplified in (2), (3) and (4).<sup>13</sup>

The English/French interpretive contrast illustrated above by (1a,b) vs. (2a,b) is, crucially, only observed in contexts involving LUI occurring as an argument. Whenever arguments are spelt out as clitics in French, they exhibit the same disjoint-reference effect as their English translations, regardless of the semantic features of the predicate:

(13) [-od] predicates

- a. *Chomsky<sub>Z</sub> defended the MIT linguists<sub>k/Z+k</sub>.*
- b. *Chomsky<sub>Z</sub> a défendu les linguistes du MIT<sub>k/Z+k</sub>.*
- c. *Chomsky<sub>Z</sub> defended him<sub>\*Z/k</sub>.*
- d. *Chomsky<sub>Z</sub> l'<sub>\*Z/k</sub> a défendu.*

(14) [+od] predicates

- a. *Chomsky<sub>Z</sub> hates the MIT linguists<sub>k/\*Z+k</sub>.*
- b. *Chomsky<sub>Z</sub> déteste les linguistes<sub>k/\*Z+k</sub> du MIT.*
- c. *Chomsky<sub>Z</sub> hates him<sub>\*Z/k</sub>.*
- d. *Chomsky<sub>Z</sub> le<sub>\*Z/k</sub> déteste.*

In what follows, I will further explore the contrast between simplex non-clitic pronouns (English HIM and French LUI) and their complex counterparts (English HIMSELF and French LUI-MEME). I will show that French LUI-MEME is globally more restricted in its distribution than English HIMSELF, both as an argument and as a non-argument. I will argue that the different prosodic properties of English pronouns and French non-clitic pronouns might have contributed to their different semantics in the two languages.

I will first review and discuss (Section 2) the assumptions put forward so far in the linguistic literature to account for the interpretive contrast between (1) and (2), and will conclude that none of them provides a complete or satisfactory

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13. This rough description leaves aside nominative pronouns, which although prosodically weak and morphologically attached to the right-hand context, have been shown to behave like phrasal affixes, rather than word affixes (Kayne 1975; Miller 1992; Cardinaletti and Starke 1999). This issue may be disregarded for the present discussion, which focuses on the development of reflexivity markers. The relevant distinction here is that between prosodically attached pronouns, which I call *clitics*, and prosodically unattached ones, which I call *non-clitics*.

account of the observed contrast. I will then compare the prosodic properties of HIMSELF and LUI-MEME, and will show that LUI-MEME is always construed under narrow focus, while English HIMSELF fails to be similarly restricted. I will then propose to relate this contrast to the different prosodic properties of English pronouns and French non-clitic pronouns: English pronouns are *leaners*, in the sense of Zwicky (1982), i.e. they undergo deaccenting, a property which is observed for both simplex HIM and complex HIMSELF, whereas French LUI may only be deaccented if a preceding word is under narrow focus, and French LUI-MEME is never deaccented. I will argue that the prosodic deaccenting of HIM-type pronouns – a property common to English pronouns and French *clitics* – favours their topic-binding as opposed to their argument-binding, so that the prosodic weakness of HIM might have favoured the development of English HIMSELF as a reflexive marker. French LUI, on the other hand, fails to exhibit a prosodic weakness which could favour topic-binding over argument-binding. Since its reflexive reading is not disfavoured by prosody, it may only be hindered by the [+od] semantic effect of the lexical context. As a result, A-bound LUI-MÊME is but a special instance of narrow focalization, while A-bound HIMSELF is syntactically motivated by argument-binding itself. The inherent prosodic strength of French LUI further accounts for the fact that LUI-MÊME must bear strong accent correlating with narrow focus, whereas English HIMSELF is not similarly restricted.

## 2. Previous analyses of “Condition B violations”

### 2.1. Binding vs. coreference

In Zribi-Hertz (1980), followed by Bouchard (1984), the co-indexing of LUI with the local subject in French (2a) is assumed to transcribe coreference – a special case of referential intersection – rather than binding. This assumption is supported by the parallel between pronoun coreference and referential intersection, illustrated above in (3)–(4) and (5b)–(6b).

This theory, however, fails to explain why English HIM cannot similarly corefer with an argument in [-od] contexts, i.e. why there is a semantic contrast between (1a) and (5a) in English. Moreover, this theory of French LUI conflicts with the fact that when it is co-indexed with the local subject, as in (15a), this pronoun may be construed as a bound variable, exactly as English HIMSELF in (15b):

- (15) a. *Jean<sub>z</sub> est fier de lui<sub>z</sub>, et Paul<sub>k</sub>*  
 John be.PRS.3SG proud.M.SG of 3M.SG and Paul  
*aussi (z/k).*  
 too  
 ‘John is proud of himself, and Paul (is) too.’
- b. *John<sub>z</sub> is proud of himself<sub>z</sub>, and so is Paul<sub>k</sub> (z/k).*

These examples both allow either the referential (‘z’) or the so-called “sloppy” (i.e. variable) reading for the reconstructed pronoun within the elliptical predicate. They thus fail to support the assumption that the semantic relation between the pronoun and its binder/antecedent is of a crucially different nature for English reflexive HIMSELF and for reflexive-read LUI in French.

## 2.2. LUI as a “fourth-type” expression

Reasoning within the Standard Binding Theory framework, Ronat (1982) proposes that French non-clitic pronouns form a “fourth type” of expressions – alongside *anaphors*, *pronominals* and *r-expressions* – which are ambiguous between anaphors and pronominals. Under this view, the interpretive contrast between English HIM and French LUI is due to the fact that HIM is a pronominal constrained by Binding Condition B, whereas French LUI is a fourth-type expression, which has no equivalent in English. Ronat assumes that among French pronouns (*se* excepted), only clitics qualify as *pronominals* with respect to the Binding Theory.

This theory brings out an important parallel between English HIM and French clitics, treating French LUI as special. It however fails to explain why French non-clitic pronouns should be exempt from Condition B, why clitichood should lead to disjoint-reference effects, and why English HIM, which is not a clitic, should be interpreted like French clitics rather than like French non-clitics.

## 2.3. The Avoid Pronoun theory

Pica (1984, 1986) proposes to derive the contrast between English (1a,b) and French (2a,b) from a general economy principle, “Avoid Pronoun”, which states that pronominals should be avoided whenever possible, in particular when a more specialized strategy is available in the language to convey the intended reading.<sup>14</sup> The Avoid Pronoun principle would thus predict that HIM must be avoided in (1a) under the ‘z’ reading because a more specialized form (HIMSELF) is available

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14. Similar ideas are put forward (albeit not specifically applied to French-English comparison) by Edmonson and Plank (1978) and Levinson (1991).

here for the reflexive reading. A similar analysis may account for the regular “Condition B” behaviour of French LE-type clitics (cf. [9a’,b’]), which would compete with the *voix pronominale* under the reflexive reading (cf. [10]). Under Pica’s theory, the interpretive contrast between English HIM (1a) and French LUI (2a) must be correlated with the fact that HIM in (1a) competes with a specialized reflexive-marking device (HIMSELF), whereas no specialized reflexive-marking device is available in French in positions calling for non-clitic pronouns.

This theory correctly emphasizes the crucial relevance of grammatical economy for the distribution and interpretation of linguistic expressions: thus, the distribution and interpretation of English HIM or French LE are dependent on the distribution and interpretation of English HIMSELF and French SE. However, grammatical economy does not suffice to account for the observed data. As regards French clitics, all of them (*se* excepted) exhibit disjoint-reference effects, although some of them do not compete with the *voix pronominale*. For instance, the verb *penser* ‘think’ selects a locative complement introduced by the preposition *à*, which pronominalizes either as *à*+LUI (16b) or as *y*, the locative clitic (16c); the *voix pronominale* is unavailable here (cf. [16d], for it is *a priori* restricted to dative and accusative arguments; nevertheless, the clitic pronoun *y* exhibits a disjoint-reference effect in [16c], while non-clitic *lui* may corefer with *Jean* in [16b]):

- (16) a. *Jean pense à Paul.*  
 John think.PRS.3SG about Paul  
 ‘John is thinking about Paul.’
- b. *Jean<sub>z</sub> pense à lui<sub>z/k</sub>.*  
 John think.PRS.3SG about 3M.SG  
 ‘John is thinking about him(self).’
- c. *Jean<sub>z</sub> y<sub>\*z/k</sub> pense.*  
 ‘John is thinking about {him/her/them/it}.’
- d. \**Jean se pense.*

These data suggest that there might be some correlation between clitichood and disjoint-reference effects regardless of the availability of the *voix pronominale* to convey the reflexive reading.

Moreover, Pica’s theory is based on the common belief that French has only one morphological device specialized in reflexivity-marking: the *voix pronominale*, which is only licensed if the internal argument is accusative or dative. It follows that whenever these conditions are not met, no specialized reflexive-marking device is available, hence ordinary simplex pronouns (LUI) take over

the reflexive reading. However, the *voix pronominale* can hardly be claimed to be “specialized in reflexive marking”, since it may also correlate with reciprocal, mediopassive and anticausative readings. Neither can it be claimed that French LUI does not compete with a morphology specialized in reflexive-marking, since LUI-MÊME triggers a reflexive reading in such cases as (17b):

- (17) a. *Jean<sub>z</sub> est atrocement jaloux de lui<sub>\*z/k</sub>.*  
 John be.PRS.3SG horribly jealous of 3M.SG  
 lit. ‘John<sub>z</sub> is horribly jealous of him<sub>z</sub>.’
- b. *Jean<sub>z</sub> est atrocement jaloux de lui<sub>z</sub>-même.*  
 John be.PRS.3SG horribly jealous of 3M.SG-même  
 ‘John is horribly jealous of himself.’

While the [+od] predicate *jaloux* ‘jealous’ triggers a disjoint reading for LUI in (17a), the disjoint-reference effect disappears in (17b) when LUI-MÊME occurs. Since LUI-MÊME makes the reflexive reading available in contexts where it is disallowed for simplex LUI, we are entitled to claim that LUI-MÊME qualifies as a morphological strategy “specialized in reflexive-marking”. Under this assumption, the Avoid Pronoun theory incorrectly predicts that LUI and LUI-MÊME should generally exhibit complementary interpretations in argument positions.

#### 2.4. The Inalienable Pronoun theory

J. Rooryck and G. Van den Wyngaerd<sup>15</sup> propose to analyze the interpretive contrast between English HIM (1a) and French LUI (2a) on a par with (18):

- (18) a. *Jean a levé le doigt.*  
 John have.PRS.3SG raise.PP DEF.M.SG finger  
 (i) ‘John raised the finger.’ (ii) ‘John<sub>z</sub> raised his<sub>z</sub> finger.’
- b. *J’ ai levé le doigt.*  
 ISG have.PRS.ISG raise.PP DEF.M.SG finger  
 (i) ‘I raised the finger.’ (ii) ‘I raised my finger.’
- c. *John raised the finger.*
- d. *I raised the finger.*

The French sentence in (18a) allows either for an alienable reading of the definite object *le doigt*, or for its inalienable reading. In English, (18c), the literal

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15. In a talk on ‘Anaphora, identity and dissociation’, presented at the round-table on reflexives, Université Paris-7/Leiden University, 1999.

translation of (18a), is only open to the alienable reading. Rooryck and Van den Wyngaerd's assumption is that the semantic mechanism which provides the inalienable reading of the definite object in (18a) is the same as that which provides the reflexive interpretation of LUI in (2a). Evidence in support of this idea is that the contrast between French (18a) and English (18c) is crucially linked to the definite article, as witnessed by (19), where in the presence of the indefinite article, English and French no longer contrast:

- (19) a. *John raised a finger.*  
 b. *Jean a levé un doigt.*  
 John have.PRS.3SG raise.PP a.M.SG finger  
 [± alienable finger in both examples]

Rooryck and Van den Wyngaerd's theory is grounded in the assumption that English and French pronouns (e.g. HIM, LUI) and definite articles form a single syntactic category (cf. Postal 1969; Emonds 1985) – a claim quite consistent with diachronic data.

This theory however runs into at least three problems. First, it does not explain why English and French pronoun-articles should have different semantic behaviours in (1a) and (2a). Second, the morphological unity of definite articles and pronouns only obtains in the third person, while the English-French contrasts illustrated in (1)–(2) and (18) are observed regardless of person. Third, since clitic LE and non-clitic LUI are both historically derived, in French, from the same paradigm of demonstratives (Latin *ille*), the theory fails to predict the sharp contrast between clitic and non-clitic pronouns with respect to disjoint-reference effects (cf. also [16b,c]):

- (20) a. *Jean<sub>Z</sub> l<sub>\*Z/k</sub>' a photographié.*  
 John 3SG.ACC have.PRS.3SG photograph.PP  
 'John photographed him(\*self).'
- b. *Jean<sub>Z</sub> a pris une photo de lui<sub>Z/k</sub>.*  
 John have.PRS.3SG take.PP a.F.SG picture of 3M.SG  
 'John took a picture of him(self).'
- (21) a. *Jean<sub>Z</sub> lui<sub>\*Z/k</sub> fait confiance.*  
 John 3SG.DAT do.PRS.3SG trust  
 'John trusts him(\*self)/her.'
- b. *Jean<sub>Z</sub> a confiance en lui<sub>Z/k</sub>.*  
 John have.PRS.3SG trust in 3M.SG  
 lit. 'John has trust in him(self).'

## 2.5. The Case-and-Chain Theory

Reinhart and Reuland (1993), Reuland and Reinhart (1995) and Reuland (1999, 2001, this volume) propose a theory of argument chains (A-chains) which may contribute to account for the interpretive contrast between English HIM and French LUI in (1a) vs. (2a). An A-chain is defined as a sequence of co-indexation which is headed by an argument position (A-position) and satisfies antecedent government: each co-indexed link of the chain is c-commanded by the one above it. Thus, in such examples as (1) and (2), the pronoun and its antecedent form an A-chain. A-chains are assumed to abide by the general condition reproduced in (22):

- (22) General condition on A-chains (Reuland 1999: 23)  
*A maximal A-chain* ( $\alpha_1$ ..... $\alpha_n$ ) *contains exactly one link* ( $\alpha_1$ ) *which is fully specified for  $\phi$ -features.*

This means that the bound anaphor which stands at the foot of the chain must be deficient as to its content. The authors formalize this property in terms of  $\phi$ -features: bound anaphors must be  $\phi$ -deficient in one way or another. This condition does not obtain for English HIM in (1a), which is specified for number and semantic gender and is further assumed by Reinhart and Reuland to be specified for structural Case. Correlatively, HIM cannot form a chain with *John* in (1a), so that a disjoint-reference effect is observed, while HIMSELF can form a chain with *John* in (1c) because it is deficient for Case. This idea finds support in the fact that like many anaphors, HIMSELF fails to have a nominative form (Reinhart and Reuland 1993). Under this theory, the availability of the coreferential reading for LUI in (2a) may be derived from the assumption that LUI in (2a), unlike HIM in (1a), is  $\phi$ -deficient. Since HIM and LUI are both overtly specified for person, gender and number, the feature deficiency of LUI must involve some abstract syntactic property. Reuland (this volume) thus assumes that unlike English HIM in (1a), French LUI in (2a) is not specified for structural Case, but only for oblique Case, taken as a deficient value for Case. It follows that French LUI, unlike English HIM, may stand at the foot of an A-chain without violating (22). English HIM, on the other hand, is analyzed by Reuland (1999, this volume) as specified either for structural Case or for oblique Case. Thus in (23a), HIM is assumed to receive structural Case, whence the disjoint-reference effect, while in (23b) it is assumed to receive oblique Case and may therefore form a chain with *John*:

- (23) a. *John<sub>z</sub> is ashamed of him<sub>\*z/k</sub>.*  
 b. *John<sub>z</sub> looked behind him<sub>z/k</sub>.*

This theory could find historical support in the fact that Old English drew a morphological distinction between accusative *hine* and oblique *him* (van Gelderen 1999). Under Reuland's theory, Modern-English HIM has hung on to the accusative/oblique distinction in syntax, although it has neutralized it in morphology. French LUI, on the other hand, has always been an oblique pronoun in all its occurrences.

The Case-and-Chain theory relates the interpretive properties of the pronoun in (2a) to a crucial distributional restriction on French LUI, pointed out by Kayne (2001), stating that it is banned from structural Case positions, as witnessed by (9). However, as acknowledged by Reinhart and Reuland themselves, the Case-and-Chain theory does not suffice to account for the distribution of simplex and complex pronouns in all contexts; it is but one ingredient of their intricate theory of referential dependencies. For example, the interpretive contrast between (23a) (which forces the disjoint reading) and (23b) (which allows coreference) leads Reinhart and Reuland (1993) to distinguish predicative and non-predicative prepositions: in (23a), the preposition *of* is assumed to be a mere  $\theta$ -assigner selected by the lexical head *ashamed*, whereas in (23b) the preposition *behind* is assumed to stand as a predicate head of its own – a P predicate – whose covert external argument needs to be controlled: in this particular example, it is said to be controlled by the event argument (the 'looking' event), so that the internal argument referring back to 'John' is realized as non-reflexive HIM with no Condition-B violation. Furthermore, the pronoun in (23a) must receive structural Case from the predicate *ashamed*, while the pronoun in (23b) must receive oblique Case from the preposition *behind*. Turning to English-French comparison, the Case-and-Chain theory leads us to assume that LUI is specified for oblique Case in both (24a) and (24b), the French translations of (23a,b):

- (24) a. *Jean<sub>z</sub> a honte de lui<sub>z/k</sub>.*  
 John have.PRS.3SG shame of 3M.SG  
 'John is ashamed of him(self).'
- b. *Jean<sub>z</sub> a regardé derrière lui<sub>z/k</sub>.*  
 John have.PRS.3SG look.PP behind 3M.SG  
 'John looked behind him.'

However, there may be some circularity in this description, for *de* seems selected by *honte* in French (24a) very much like *of* is selected by *ashamed* in English (23a). *Ashamed* is a denominal adjective whose complement is a former genitive replaced by [*of*+noun phrase] in Modern English (van Gelderen 1999, ex. [20]). *Honte* in French is a nominal whose "genitive" complement is similarly realized as [*de*+noun phrase]. Other evidence in support of a Case contrast between *him*

in (23a) and *lui* in (24a) is the fact that P-stranding is licensed in English but not in French (Reuland, p.c.; cf. Kayne 1981):

- (25) a. *Who is John ashamed of?*  
 b. \**Qui est-ce que Jean a honte de?*  
 Who +Q John have.PRS.3SG shame of

This contrast suggests that English *proud+of* (unlike French *fier de*) undergoes [PRED Pred+P] reanalysis and is thus capable of assigning structural Case to its complement. However, such examples as (26) indicate that P-stranding does not have to involve [PRED Pred+P] reanalysis:

- (26) a. *John wrote Mary his angry letter in the passageway.*  
 b. *What part of the house did John write Mary his angry letter in?*

In (26b), the locative PP is not selected by the verb and the complement of *in* is unlikely to be Case-marked by the verb head. The acceptability of P-stranding thus does not provide a diagnostic test for structural Case assignment; hence we cannot infer from the contrast between (25a) and (25b) that the pronoun is specified for structural Case in English (23a) and for oblique Case in French (24a). Since Modern-English HIM is not specified for the accusative/oblique distinction in morphology, the main available evidence that English HIM and French LUI are not similarly specified for syntactic Case in (23a) and (24a) is the interpretive contrast between HIM and LUI in these examples – the very problem we are attempting to explain.

## 2.6. *Soi* as a blocking factor

Basing myself on English-French comparison, I addressed in Zribi-Hertz (2003) the issue of the linguistic change which leads from the intensive to the reflexive use of M-pronouns: the distribution of LUI-MÊME in Modern French is motivated by semantic properties, while the distribution of HIMSELF in Modern English is – for a subset of its occurrences – motivated by syntax. The problem is to understand how the occurrence of M-pronouns comes to be triggered by a syntactic property, and why this development has not occurred in French.

Defining binding as a local and obligatory relation, I assumed that while so-called “reflexive anaphors” are bound by an argument (a [+ $\theta$ ] antecedent), so-called “pronominals” are bound by a non-argument, a [– $\theta$ ] operator – a discourse topic syntactically represented in the domain periphery (cf. Rizzi 1997):

- (27) a.  $[_{cp}[_{top} \emptyset_k] [_{tp} John \text{ is } \{proud/jealous\} \text{ of } him_k]]$   
 b.  $[_{tp} John_z \text{ is } \{proud/jealous\} \text{ of } himself_z]$

Following Zribi-Hertz (1995) and König and Siemund (1999),<sup>16</sup> I further assumed that simplex pronouns such as HIM or LUI may *a priori* (i.e. on the basis of their  $\phi$ -features) be bound by  $[-\theta]$  or  $[\theta]$  antecedents, but that  $[\theta]$  binding is marked with respect to  $[-\theta]$  binding. Evidence supporting this view is the behaviour of French LUI, which may always be topic-bound regardless of lexical semantics, while its binding by an argument is crucially sensitive to lexical semantic features:

- (28) a.  $[_{top} \emptyset_k] [_{tp} Jean_z \text{ est } \{fier/jaloux\} \text{ de } lui_k]$   
 John be.PRS.3SG proud/jealous of 3M.SG  
 ‘John<sub>z</sub> is {proud/jealous} of him<sub>k</sub>.’  
 b.  $[_{tp} Jean_z \text{ est } \{fier/*jaloux\} \text{ de } lui_z]$   
 John be.PRS.3SG proud/jealous of 3M.SG  
 ‘John is {proud/\*jealous} of himself.’

Intensified pronouns provide an optimal strategy for allowing the reflexive reading in  $[+\text{od}]$  contexts: within the LUI-MÊME complex word, the distressed pronoun LUI precludes the ostensive use, thus forcing an endophoric reading (Zribi-Hertz 1995); the intensive marker calls for the “most central” binder (in König’s sense) – the  $[\theta]$  antecedent (as opposed to the  $[-\theta]$  topic) if no further context is provided. In the resulting distributional pattern, topic-binding is always available for LUI, while argument-binding is always available for LUI-MÊME; in other words, the topical (A-free) reading is the unmarked reading for LUI (cf. [28]), while the reflexive (A-bound) reading is the unmarked reading for LUI-MÊME:

- (29) a. *Jean<sub>z</sub> est jaloux de lui<sub>z</sub>-même.*  $[+\text{od} \text{ predicate}]$   
 ‘John is jealous of himself.’  
 b. *Jean<sub>z</sub> est fier de lui<sub>z</sub>-même.*  $[-\text{od} \text{ predicate}]$   
 ‘John is proud of himself.’

16. A similar but not quite identical view put forward by Levinson (1991) is that argument binding is *a priori* marked, regardless of predicate semantics; in other words, reflexive readings are *as such* marked, with respect to argument structure. As also emphasized by König and Vezzosi (2004), this generalization is proved to be too strong by such examples as French (2a,c): argument binding is semantically marked only with  $[+\text{od}]$  predicates.

The distribution of Modern English HIM and HIMSELF, which motivated Chomsky's (1981) Standard Binding Theory, may thus be viewed as a regularization of the state of affairs illustrated in (28)–(29):

(30) *HIM and HIMSELF in a predication (“local”) domain*

binder	pronoun
+ $\theta$	HIMSELF
– $\theta$	HIM

The English distributional pattern may be described a syntax-driven development of the grammar instantiated by Modern French: whereas the distribution of LUI and LUI-MÊME IN (28)/(29) is sensitive to a lexical-semantic property ( $\pm$ od), the distribution of HIM and HIMSELF is motivated in (27)/(30) by the syntactic contrast between argument-binding and topic-binding. This development is consistent with the Chomskyan view of grammatical economy summarized by Reuland (1999), according to which language-processing mechanisms based on discrete categories such as [ $\pm\theta$ ] are *a priori* more economical than mechanisms based on continuous categories such as other-orientation or centrality. In line with this general approach, I suggested in Zribi-Hertz (2003) that French LUI and LUI-MÊME should be expected to eventually undergo a “syntacticization” process leading to their distributional complementarity in examples such as (2).

However, this complementarity does not obtain in today's French, which suggests that something in the grammar hinders the expected development. In Zribi-Hertz (2003), I proposed to link the present state of affairs to the special properties of the French pronoun *soi*, which has no counterpart in English. French *soi* is a non-clitic 3rd-person pronoun historically derived from Latin *se*. Like Latin *se*, and like its modern clitic counterpart *se*, *soi* is unspecified for gender and number. As a strong pronoun, *soi* is available in prepositional contexts. In French textbooks and dictionaries, *soi* is commonly labelled *réfléchi* (‘reflexive’). In archaic Old French, *soi* could be bound by referential antecedents, but it very early competed with LUI in such contexts. Some such occurrences of *soi* are still attested in modern literary texts, as witnessed by the three examples in (31), drawn from Rey-Debove and Rey (1993: 2102):<sup>17</sup>

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17. In these and further similar examples adapted from attested written productions, the pronoun which occurs in the original text is boldfaced. All proposed translations are my own.

- (31) a. *Un homme<sub>z</sub> droit, fermé, sûr de*  
 a.M.SG man uptight withdrawn sure of  
 {*soi/lui*}<sub>z</sub>. (Sartre)  
*soi/3M.SG*  
 ‘An uptight, withdrawn man, sure of himself.’
- b. *Il s’expliquait trop bien que le*  
 3M.SG understand.IMPF.3SG too well that DEF.M.SG  
*comte<sub>z</sub> fût à peine maître de*  
 count be.SBJV.IMPF.3SG hardly master of  
 {*soi/lui*}<sub>z</sub>. (Bourget)  
*soi/3M.SG*  
 ‘He readily understood why the count should be losing control  
 over himself.’
- c. *Elle<sub>z</sub> se moquait de s=a fille et ne*  
 3F.SG not-care.IMPF.3SG of 3SG=F.SG daughter and NEG  
*pensait qu’ à {soi/elle}z.*  
 think.IMPF.3SG que about *soi/3F.SG*  
 ‘She didn’t care about her daughter and thought only of herself.’

In Modern French grammars, however, *soi* is usually described as restricted to quantified antecedents, as in (32) ([32a,c,d] are quoted by Grevisse 1986: 1017); in such cases, *soi* also competes with *LUI*, except when the binder is arbitrary *on* [32a] or *PRO* [32b) – in this case *LUI* is disallowed:

- (32) a. *On<sub>z</sub> ne peint bien que {soi/\*lui}z et les*  
 one NEG paint.PRS.3SG well que *soi/3M.SG* and DEF.PL  
*s=iens.* (France)  
*3SG=PL.M*  
 ‘One can only properly paint oneself and one’s own.’
- b. [ $\emptyset$ ]<sub>z</sub> *travailler pour {soi/\*lui}z est une chose*  
 work.INF for *soi/3M.SG* be.PRS.3SG a.F.SG thing  
*bien agréable.*  
 very pleasant  
 ‘To work for oneself is a very pleasant thing.’
- c. *Chacun<sub>z</sub> doit s’intéresser à {soi/lui}z.* (Beauvoir)  
 everyone must pay attention to *soi/3M.SG*  
 ‘Everyone must pay attention to oneself.’

- d. *Chaque homme<sub>z</sub> renferme en {soi/lui}<sub>z</sub> un*  
 every man enclose.PRS.3SG within soi/3M.SG a.M.SG  
*monde à part. (Chateaubriand)*  
 world of its own  
 ‘Every man encloses within himself a world of its own.’

For many Modern-French speakers, however, *soi* is unavailable in such cases as (32c,d) and may only be bound by *on* or arbitrary PRO, as in (32a,b) (cf. Brandt 1944; Zdobyck 1998), or else occur as a free arbitrary pronoun, as in (33):

- (33) *Il est clair qu’ il y a dans toute librairie des*  
 it be.PRS.3SG clear that there is in every bookshop PL  
*livres intéressants pour soi.*  
 book.PL interesting for soi  
 ‘Any bookshop is bound to contain some books of interest for oneself.’

As shown by Brandt (1944) and confirmed fifty years later by Zdobyck (1998), the most advanced dialectal varieties of French treat *soi* as a strong, non-nominative allomorph of *on*. My own assumption in Zribi-Hertz (2003), which is akin in spirit to Pica’s Avoid Pronoun approach (cf. Section 2.3), was that the availability of *soi* as an A-bound pronoun hinders the development of LUI-MÊME as a reflexive marker in prepositional contexts. My prediction was therefore that the intensive>reflexive development of LUI-MÊME should only occur in dialects whose grammar no longer licenses *soi* in such examples as (31) and (32c,d).

However, the blocking effect of *soi* on the evolution of LUI-MÊME cannot suffice to explain the contrast between French and English addressed in this study. First, no observable evidence suggests that LUI-MÊME is currently undergoing the intensive > reflexive change in spoken French, even in dialects which sharply ban *soi* from (31) and (32c,d) as does my own baby-boom/Paris variety. The data in (34) below rather suggest that even in this dialectal variety of French, LUI-MÊME is an intensified pronoun whose occurrence is motivated by focus, rather than by A-binding:

- (34) [Speaker showing the hearer a photograph]  
 a. *Regarde comme chacun<sub>z</sub> ici est fier de*  
 look how everyone here be.PRS.3SG proud of  
 {°soi/lui}<sub>z</sub> !<sup>18</sup>  
 soi/3M.SG  
 ‘Look how proud of themselves everyone is!’

18. °*Soi* indicates that acceptability is restricted to archaic grammars of French.

- b. *Regarde comme Jean<sub>z</sub> est fier de lui<sub>z/k</sub>*  
 look how John be.PRS.3SG proud of 3M.SG  
 (??-même}!  
 INT  
 ‘Look how proud of him(self) John is!’
- c. *Regarde comme Jean<sub>z</sub> est jaloux de lui<sub>\*z/k</sub>*  
 look how Jean be.PRS.3SG jealous of 3M.SG  
 (\*-même}!  
 INT  
 ‘Look how jealous of him(self) John is!’

In the construction *Regarde comme*+Predication, the new information is conveyed by the *comme*-clause. Hence, no constituent within this clause should fall under narrow focus. (34a) shows that the dialectal grammar under discussion fails to acknowledge *soi* as a reflexivity marker. LUI-MÊME, however, sounds awkward not only in (34c) where the predicate is [+od], but also in (34b) with a [-od] predicate. This constraint, which does not carry over to HIMSELF in the English translations, is expected under the assumption that French LUI-MÊME must always be under narrow focus. It furthermore appears that the French-English contrast between simplex (HIM, LUI) and complex (HIMSELF, LUI-MÊME) pronouns reaches beyond the issue of reflexivity and bound anaphora, for French LUI-MÊME also appears more restricted in its distribution than English HIMSELF in A-free contexts:

- (35) a. *That picture of her(self)<sub>z</sub> on the front page of the Times confirmed the allegations Mary<sub>z</sub> had been making over the years.* [adapted from Pollard and Sag 1992: 264]
- b. *Cette photo d'elle<sub>z</sub> (??-même) à la*  
 DEM.F.SG picture of 3F.SG INT on DEF.F.SG  
*Une du Monde a confirmé ce*  
 front.page of.DEF.SG Monde have.PRS.3SG confirm.PP that  
*que Marie<sub>z</sub> répétait depuis des années.*  
 which Mary repeat.IMP.F.3SG since PL year.PL  
 ‘That picture of her(self) on the front page of *Le Monde* confirmed what Mary had been repeating for years.’

While the complex pronoun is acknowledged as well-formed in (35a) by all my English-speaking consultants, its French analogue in (35b) is felt as odd by all the French speakers I questioned. This suggests that some other factor must be

at work in the distributional contrast between English HIM(SELF) and French LUI(-MÊME). In what follows I will explore the assumption that one such factor is prosody.

### 3. The prosodic factor

The comparative study of English and French prosody is a vast issue that goes far beyond the present study (cf. Selkirk 1984). In what follows I would simply like to suggest that the different prosodic properties of English and French pronouns play a determining role in their semantic development. To present the prosodic properties which seem to me relevant, I will first lay out a few preliminary descriptive assumptions borrowed from Büring (1997, 2007), whose work on prosody and information structure encompasses many previous results. I will then consider the two major uses of HIMSELF (A-free and A-bound) from a prosodic perspective, showing that three main prosodic patterns may be distinguished: (a) HIMSELF under primary accent (HIMSELF<sup>1</sup>); (b) HIMSELF under secondary accent (HIMSELF<sup>2</sup>); (c) deaccented HIMSELF (HIMSELF<sup>0</sup>), which, I shall argue, may correlate with two types of information structure. I will then show that the (a) pattern is the only one which is available for French LUI-MÊME, and will then proceed to derive this English-French contrast from the different prosodic properties of pronouns in the two languages: English pronouns are “leaners” (Zwicky 1982), while French non-clitic pronouns may be shown to be prosodically strong, a property which could correlate with the phrase-final accent characteristic of French. I will argue that the prosodic properties of pronouns contribute to explain why HIMSELF has a wider distribution in English than does LUI-MÊME in French, and why HIMSELF, unlike LUI-MÊME, has developed into a syntax-driven reflexive marker.

#### 3.1. Some preliminaries

As pointed out by Selkirk (1984) and recalled by Büring (1997, 2007), in English and other Germanic languages, primary clausal accent signalling focus normally falls on the rightmost constituent inside the verb phrase, and the position of primary accent is independent of the scope of focus. Thus in the following examples, primary accent falls on the object *Mary* in the sentence *He saw Mary* both when focus has narrow scope on the object, as in (36a’), and when it has wide scope on the entire verb phrase, as in (36b’):

- (36) a. *Who did John see on Thursday night?*  
 a’. *He saw Mary.* [narrow focus on object]

- b. *What did John do on Thursday night?*  
 b'. *He saw MARY.* [broad focus on VP]

Büring calls *integration* the prosodic process which, in (36b'), merges the head and its complement to form a single prosodic unit: in this case, although primary accent falls on *Mary*, the V head is semantically integrated in the focused constituent *saw Mary*.

Another prosodic property which will be useful below is the deaccenting of given constituents. Büring emphasizes the fact that the deaccenting of object pronouns exemplified in (37c) echoes the deaccenting of lexical objects construed as given exemplified in (37b):

- (37) *Why does John keep criticizing Mary?*  
 a. — *Because he is JEALOUS of Mary.*  
 b. — *Because he is JEALOUS of her.*

In (37a,b), the referent of the object is construed as given information; correlatively, focus has narrow scope over the predicate head *jealous*. In the French analogues of these examples, we note that pronouns contrast with lexical noun phrases with respect to prosody:

- (38) *Pourquoi est-ce que Jean passe son temps à critiquer Marie<sub>k</sub>?* (= [37])  
 a. — *Parce qu'il est JALOUX de Marie.* (= [37a])  
 b. — *Parce qu'il en<sub>k</sub> est JALOUX.* (= [37b])  
 c. — *Parce qu'il est JALOUX D'ELLE<sub>k</sub>.* (= [37b])  
 d. — *\*Parce qu'il est JALOUX d'elle<sub>k</sub>.*

In (38b), the discourse-given lexical complement of *jaloux* is deaccented, as in example (37b) in English. In (38c), the inherent prosodic deficiency of the clitic *en* echoes the deaccenting of *of her* in (37c). In (38d), however, the pronoun does not undergo deaccenting, even though it is discourse-given under the 'k' index: it is pronounced under primary accent together with the predicate head *jaloux*.

A third prosodic property relevant for what follows is the notion of secondary accent. Although *primary* accent regularly falls on the rightmost constituent in the verb phrase, other constituents in the sentence may bear *secondary* accents. In the following example, due to D. Büring (p.c.), the noun phrase *dogs* is accented although it is topical. Pitch diagrams based on recordings however show that the accent on the topic is secondary, i.e. less prominent than the focal accent on *happy*:



- e. *John<sub>z</sub> knew that people called Paul a crook, and that it could have been said also of {HIM/himSELF}<sub>z</sub>.*  
 e'. *Jean<sub>z</sub> savait que les gens traitaient Paul d'escroc, et qu'on aurait pu en dire autant de LUI<sub>z</sub>(-MÊME).*  
 f. *John<sub>z</sub> thinks that Mary hates only {HIM/himSELF}<sub>z</sub>.*  
 f'. *Jean<sub>z</sub> pense que Marie ne déteste que LUI<sub>z</sub>(-MÊME).*

Throughout (40), HIMSELF alternates in English with accented HÍM under a non-reflexive reading. The simplex and complex pronouns both bear primary accent and may both be co-indexed with *John*. In the French analogues, LUI and LUI-MÊME similarly alternate under the 'z' index.

As rightly emphasized by Baker (1995), many of those occurrences of English HIMSELF drawn from literary texts and which seem to violate the Binding Condition A (Zribi-Hertz 1989; Pollard and Sag 1992) are read as contrastive. This means that they should be pronounced under primary accent signalling narrow focus on the pronoun. Here as in (40) above, LUI and LUI-MÊME alternate in the French translations:<sup>19</sup>

- (41) a. *He<sub>z</sub> [Zapp] sat down at the desk and opened the drawers. In the top right-hand one was an envelope addressed to {HIM/himSELF}<sub>z</sub>.*  
 (Lodge)  
 a'. *Il<sub>z</sub> s'assit au bureau et ouvrit les tiroirs. Dans celui du haut, à droite, se trouvait une enveloppe adressée à LUI<sub>z</sub>(-MÊME).*  
 b. *And that was exactly it, he<sub>z</sub> thought, he really didn't care too much what happened to {HIM/himSELF}<sub>z</sub>.* (Highsmith)  
 b'. *C'était exactement ça, songea-t-il<sub>z</sub>, il<sub>z</sub> se fichait un peu de ce qui pouvait lui<sub>z</sub> arriver à LUI<sub>z</sub>(-MÊME).<sup>20</sup>*

HIMSELF<sup>1</sup> may also be A-bound, as in (42). In such cases it does not alternate with simplex HIM. In the proposed French translations, LUI(-MÊME) is available either as a clitic doubler (an adjunct), or as a P-governed argument:

- (42) a. *He<sub>z</sub> sometimes felt that by [ $\phi_k$ ] torturing her\*(SELF)<sub>k</sub>, his<sub>z</sub> daughter<sub>k</sub> was torturing HIM<sub>z</sub>.*  
 a'. *Il<sub>z</sub> sentait parfois qu' [ $\phi_k$ ] en se<sub>k</sub> torturant ELLE<sub>k</sub>(-MÊME), s<sub>z</sub>=a fille<sub>k</sub> le<sub>z</sub> torturait LUI<sub>z</sub>.*

19. As in previous similar examples (cf. [31], [32]), the boldfaced form in each English example is the attested one, and the proposed French translation is my own.

20. In (41b'), English HIMSELF is translated in French by a pronoun-doubling construction (...lui arriver à lui[-même]), since the reflexivized argument is a dative (see Section 1).

- b. *John<sub>z</sub> lit a cigarette for MARY, and then he<sub>z</sub> lit one for him\*(SELF)<sub>z</sub>.*
- b'. *Jean<sub>z</sub> alluma une cigarette pour MARIE, puis il<sub>z</sub> {en alluma une pour/s'en alluma une à} LUI<sub>z</sub>(-MÊME).*
- c. *Since the boy<sub>z</sub> didn't want it, we<sub>k</sub> decided [ $\emptyset_k$ ] to keep the model for {\*US/ourSELVES}<sub>k</sub>.*
- c'. *Puisque l'enfant n'en voulait pas, nous<sub>z</sub> décidâmes de garder la maquette pour NOUS<sub>z</sub>(-MÊMES).*
- d. *He<sub>z</sub> pulled the trigger first on his WIFE, then on him<sub>z</sub>\*(SELF).*
- d'. *Il<sub>z</sub> tira d'abord sur SA FEMME, puis sur LUI<sub>z</sub>(-MEME).*

Two important contrasts between French and English are revealed by these examples: (a) in French, whenever the internal argument is accusative or dative, it must be realized as a clitic; the strong pronoun is then licensed as an adjunct (cf. [41a']); (b) LUI is available alongside LUI-MÊME throughout (42) – LUI-MÊME is never obligatory.

Another class of cases is illustrated below by the two sets of examples in (43) and (44):

- (43) a. *John<sub>z</sub> eventually realized that Mary was {TALLer than him<sub>z</sub>(\*self)/taller than HIM<sub>z</sub>/taller than himSELF<sub>z</sub>}.*
- a'. *Jean<sub>z</sub> s'est finalement rendu compte que Marie était PLUS GRANDE QUE LUI( ??-MÊME)<sub>z</sub>.*
- b. *John<sub>z</sub> thinks that grants should be given to linguists {LIKE him(\*self)<sub>z</sub>/like HIM<sub>z</sub>/like himSELF<sub>z</sub>}.*
- b'. *Jean<sub>z</sub> pense que les bourses devraient être attribuées à DES LINGUISTES TELS QUE LUI( ??-MÊME)<sub>z</sub>.*
- (44) a. *John<sub>z</sub> put the book {beHIND him(\*self)<sub>z</sub>/ behind HIM<sub>z</sub>/behind himSELF<sub>z</sub>}.*
- a'. *Jean<sub>z</sub> a mis le livre {DERRIÈRE LUI(-MÊME)<sub>z</sub>}.*
- b. *John<sub>z</sub> pulled the cart {tOWARDS him(\*self)<sub>z</sub>/towards HIM<sub>z</sub>/towards himSELF<sub>z</sub>}.*
- b'. *Jean<sub>z</sub> a tiré le caddy VERS LUI(-MÊME)<sub>z</sub>.*

Here as in (40)–(42), HIMSELF bears primary accent since it occupies the rightmost linear position within the predicate. And here as in (40)–(42), HIM alternates with HIMSELF<sup>1</sup> under narrow focus. Unlike in (40)–(42), however, HIM in (43)–(44) may also be deaccented, with primary accent falling on the preceding lexical word. Unlike HIM, HIMSELF<sup>1</sup> cannot undergo deaccenting in the contexts under discussion. Semantically, deaccented HIM correlates with either broad focus on the predicate or narrow focus on the accented head:

(45) *What did John<sub>Z</sub> find out about Mary?*

- a. — [*That she was TALLer than {him(\*self)/\*HIM/\*himSELF}*]<sub>Z</sub>.<sup>21</sup>  
[broad focus on predicate phrase]

*Mary was always convinced that she was SHORTer than John.*

- b. — *No. John<sub>Z</sub> just found out that she is actually TALLer than {him(\*self)/\*HIM/\*himSELF}*]<sub>Z</sub>.  
[narrow focus on adjective]

*John<sub>Z</sub> must fear that Mary should be taller than his<sub>Z</sub> MUM.*

- c. — *No, he<sub>Z</sub> fears she might be taller than {HIM/himSELF}*]<sub>Z</sub>.  
[narrow focus on pronoun]

(46) *What did John<sub>Z</sub> do with the book?*

- a. — [*He<sub>Z</sub> put it {beHIND him(\*self)/\*behind HIM/\*himSELF}*]<sub>Z</sub>.  
[broad focus on predicate]

*Did John<sub>Z</sub> put the book beHIND {him>(\*self)/\*HIM/\*himSELF}*]<sub>Z</sub>?

- b. — *No, he<sub>Z</sub> put it NEXT to {him/\*himself/\*HIM/\*himSELF}*]<sub>Z</sub>.  
[narrow focus on preposition]

*Did John<sub>Z</sub> put the book behind MARY?*

- c. — *No, he<sub>Z</sub> put it {\*beHIND him(self)/behind {HIM/himSELF}*]<sub>Z</sub>.  
[narrow focus on pronoun]

In the French translations of (45)–(46) proposed in (47) and (48), LUI-MÊME only allows readings where it is construed under narrow focus, although even in such contexts simplex LUI with primary accent remains optimal:

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21. Acceptability judgements regarding pronouns in comparative constructions such as (43a)/(44) involve a good deal of variation across speakers. English-speaking school children are taught that one must say (a) *John is taller than I (am)* and must discard (b) *John is taller than {me/myself}* as ungrammatical. It is however clear that most English speakers use (b) in informal speech. The debate regarding the choice between the simplex pronoun (*me, him*) or the complex SELF form is of another nature. Globally, British-English speakers are less reluctant than American-English speakers to accept HIMSELF in (45c)–(46c), a fact in keeping with Baker's (1995) intuition that A-free HIMSELF is a British dialectal variant of discourse-linked contrastive HIM in American English.

(47) *Qu'est-ce que Jean<sub>z</sub> a pu découvrir à propos de*  
 what +Q John might have discover(ed) about  
*Marie?*

Mary

'What might John<sub>z</sub> have discovered about Mary<sub>k</sub>?'

a. — [*Qu' elle est PLUS GRANDE QUE*  
 that 3F.SG.NOM be.PRS.3SG taller.F.SG than  
*LUI<sub>z</sub>(\*-MÊME)*].  
 3M.SG INT

'That she<sub>k</sub> is TALLer than him<sub>z</sub>.'

[broad focus on predicate]

*Marie a toujours été convaincue qu' elle*  
 Mary have.PRS.3SG always be.PP convince.PP.F.SG that 3F.SG  
*était plus petite que Jean.*  
 be.IMPF.3SG shorter.F.SG than John

'Mary was always convinced that she was shorter than John.'

b. — *Non. Jean<sub>z</sub> s'est rendu compte qu' elle<sub>k</sub>*  
 no John realize.PST that 3F.SG  
*est plus GRANDE que lui<sub>z</sub>(\*-même).*  
 be.PRS.3SG taller.F.SG than 3M.SG INT

'Not always. John<sub>z</sub> realized she<sub>k</sub> is actually TALLer than him<sub>z</sub>.'

[narrow focus on adjective]

*Jean<sub>z</sub> doit craindre que Marie<sub>k</sub> ne soit plus grande que*  
 John<sub>z</sub> must fear that Mary<sub>k</sub> should be taller than  
*S<sub>z</sub>=A MÈRE?*  
 HIS<sub>z</sub> MUM

c. — *Non, il<sub>z</sub> craint surtout qu'elle*  
 no 3M.SG.NOM fear.PRS.3SG mostly that 3F.SG.NOM  
*ne soit plus grande que LUI<sub>z</sub>(-MÊME).*  
 NEG be.SBJV.PRS.3SG taller.F.SG than 3M.SG INT

'No, he mostly fears she might be taller than {HIM/himself}<sub>z</sub>.'

[narrow focus on pronoun]

- (48) *Qu'est-ce que Jean<sub>z</sub> a fait du bouquin?*  
 what +Q John have.PRS.3SG do.PP of.DEF.M.SG book  
 'What did John do with the book?'

a. — *Il<sub>z</sub> l' a POSÉ DERRIÈRE*  
 3M.SG.NOM 3SG.ACC have.PRS.3SG put.PP behind  
*LUI<sub>z</sub>(\*-MÊME).*  
 3M.SG INT  
 'He put it BEHIND him.'  
 [broad focus on VP]

*Est-ce que Jean<sub>z</sub> a posé le livre*  
 +QU John have.PRS.3SG put.PP DEF.M.SG book  
*DERRIÈRE lui<sub>z</sub>(\*-même)?*  
 behind 3M.SG INT  
 'Did John put the book BEHIND him?'

b. — *Non, il<sub>z</sub> l' a mis*  
 no 3M.SG.NOM 3SG.ACC have.PRS.3SG put  
*A CÔTÉ de lui<sub>z</sub>(\*-même).*  
 next.to 3M.SG INT  
 'No, he<sub>z</sub> put it NEXT to him<sub>z</sub>.'  
 [narrow focus on P]

*Est-ce que Jean<sub>z</sub> a posé le livre<sub>w</sub> derrière*  
 +QU John have.PRS.3SG put DEF.M.SG book behind  
*MARIE<sub>k</sub>?*  
 Mary

'Did John<sub>z</sub> put the book<sub>w</sub> behind Mary<sub>k</sub>?'

c. — *Non, il<sub>z</sub> l'<sub>w</sub> a mis*  
 no 3M.SG.NOM 3SG.ACC have.PRS.3SG put.PP  
*derrière LUI<sub>z</sub>(-MÊME).*  
 behind 3M.SG INT  
 'No, he<sub>z</sub> put it<sub>w</sub> behind {HIM/himself}<sub>z</sub>.'  
 [narrow focus on pronoun]

3.2.2. HIMSELF under secondary accent (HIMSELF<sup>2</sup>)

In another subset of its occurrences, HIMSELF bears a secondary accent within its clause. Correlatively, HIMSELF<sup>2</sup> is not construed under narrow focus. As HIMSELF<sup>1</sup>, HIMSELF<sup>2</sup> may be A-free, in which case it alternates with simplex HIM under a given referential index, or A-bound, in which case it does not. I shall consider each subclass of cases separately.

A-free HIMSELF<sup>2</sup> is typically illustrated by its occurrences in picture nominals, whose interpretive properties have been much discussed in the linguistic literature (cf. Warshawsky 1965; Ross 1970; Cantrall 1974; Chomsky 1981; Kuno 1987; Pollard and Sag 1992; Reinhart and Reuland 1993). The English examples in (49) are adapted from Pollard and Sag (1992); in the English examples, secondary accent is signalled by an acute accent (e.g. *himsélf*, *picture*), while small capitals indicate primary accent:

- (49) a. That {*pícture of him/pícture of himsélf*}<sub>z</sub> in the museum **BOthered** John<sub>z</sub>.  
 a'. *Ce portrait de lui<sub>z</sub>( ??-même) au musée tracassait Jean<sub>z</sub>.*  
 b. That {*pícture of her/pícture of hersélf*}<sub>k</sub> on the front page of the Times made **Mary<sub>k</sub>'s** claims seem quite **riDICulous**.  
 b'. *Cette photo d'elle<sub>k</sub>( ??-même) à la Une du Monde rendait les allégations de Marie<sub>k</sub> tout à fait ridicules.*  
 c. John<sub>z</sub>'s **campaign** requires that {*píctures of him/píctures of himsélf*}<sub>z</sub> be placed **ALL** over town.  
 c'. *La campagne électorale de Jean<sub>z</sub> requiert que des photos de lui<sub>z</sub>( ??-même) soient affichées dans toute la ville.*  
 d. John<sub>z</sub>'s **intentionally** misleading testimony was sufficient to ensure that there would be {*píctures of him/píctures of himsélf*}<sub>z</sub> **all** over the morning **PAPers**.  
 d'. *Le témoignage délibérément mensonger de Jean<sub>z</sub> devait suffire à faire apparaître des photos de lui<sub>z</sub>( ??-même) dans tous les journaux du matin.*

In order to bring out the difference between primary and secondary accent on English HIMSELF, let us consider an ambiguous example such as (49c), repeated below in (50). Two different prosodic contours are available here, one for HIMSELF<sup>1</sup>, as in (50a), and one for HIMSELF<sup>2</sup>, as in (50b) :

- (50) *For John<sub>z</sub>'s campaign I think we should put up some pictures of **BUSH** all over town.*

- a. — *This is quite unnecessary. On the other hand, John<sub>z</sub>'s campaign requires that pictures of {HIM/himSELF}<sub>z</sub> be placed all over town.*

*What do we need to do to ensure John's reelection?*

- b. — *First of all, John<sub>z</sub>'s campaign requires that {pictures of him/pictures of himself}<sub>z</sub> be placed ALL over town.*

In (50a), the pronoun – HIM(SELF) – bears primary accent within the sentence and is read under narrow, contrastive, focus. In (50b), HIMSELF receives primary accent within its noun phrase domain (*pictures of himself*). The crucial observation here is that simplex HIM and complex HIMSELF contrast prosodically within picture noun phrases: simplex HIM is deaccented (> *pictures of him*), while complex HIMSELF is not (*\*pictures of himself/pictures of himself*). At clause-level, however, primary accent regularly falls on the predicate. Within the clause, HIMSELF therefore only receives secondary accent. In the French translations proposed in (49), complex LUI-MÊME is only felicitous under narrow focus, thus in such contexts as (50a), but not in (50b).

HIMSELF<sup>2</sup> may also be A-bound. This typically happens when HIMSELF occupies a non-rightmost linear position within the predicate, e.g. when it fills the first object position in a double-complement construction (cf. [51a,c]), the object position followed by a particle (cf. [51b]), or the so-called “ECM position” (cf. [51d]). In such examples, HIMSELF does not alternate with HIM under a given referential index. In the French translations of (51), LUI(-MÊME) appears as an adjoined clitic doubler, since *se* is present on the verb; and simplex LUI and complex LUI-MÊME are equally infelicitous in such A-bound contexts: they are pragmatically unmotivated as restrictive-focus markers. This stands as a sharp contrast between French and English:

- (51) a. *Enjoying this moment of solitude, John poured himself a cup of TEA.*  
 a'. *Savourant ce moment de solitude, Jean se versa ( ??à lui[-même]) une tasse de thé.*  
 b. *John propped himself up on the BED with a couple of PILLOWS.*  
 b'. *Jean se cala ( ??lui[-même]) sur le lit avec un ou deux oreillers.*  
 c. *John congratulated himself on his decision to LEAVE.*  
 c'. *Jean se félicita( ??lui[-même]) d'avoir pris la décision de partir.*  
 d. *John used to consider himself above romantic involvement.*  
 d'. *Jean se considérait ( ??lui[-même]) au-dessus des attachements amoureux.*

In the English examples in (51), HIMSELF does not undergo any radical deaccenting, nor any prosodic attachment to the verb. Its prosodic contour is the same as that of a non-presupposed lexical noun phrase in the same position:

- (52) *What did John do when the tray was brought to him?*  
 — *He poured {himsélf/Máry} a cup of TEA.*

But although HIMSELF fails to be *deaccented* in (51), it only bears a *secondary* accent.

### 3.3. Deaccented HIMSELF (HIMSELF°)

In a last class of cases, HIMSELF undergoes deaccenting. Such cases will be subdivided into two subsets.

In the first subset, the deaccenting undergone by HIMSELF boils down to the deaccenting of given information illustrated above in (37). As witnessed by the following examples, HIMSELF° may be A-free (53) or A-bound (54):

- (53) a. *I hope John<sub>z</sub> didn't realize that Mary is taller than himSELF<sub>z</sub>.*  
 a'. *J'espère que Jean<sub>z</sub> ne s'est pas rendu compte que Marie<sub>k</sub> est PLUS GRANDE QUE LUI<sub>z</sub>(\*-MÊME).*  
 b. — *No, but he<sub>z</sub> unfortunately DID realize that she is SMARTER than himself<sub>z</sub>.*  
 b'. — *Non, mais il<sub>z</sub> a malheureusement bien vu qu'elle est plus INTELLIGENTE que lui<sub>z</sub>(\*-même).*
- (54) a. *There are things I LIKE about myself, and things I HATE about myself.*  
 a'. *Il y a chez moi( ??-même) des choses que j'AIME, et d'autres que je DÉTESTE.*  
 b. *John didn't CUT himself but he DID BURN himself.*  
 b'. *Jean ne s'est pas COUPÉ mais c'est vrai qu'il s'est BRÛLÉ (\*lui-même/\*LUI-MÊME).*

Deaccenting of given information is available for lexical constituents in French, even if it involves disrupting the unmarked phrase-final stress pattern, as in (53b'). Deaccenting is however unavailable for LUI-MÊME in French. We observe that such complex pronouns are infelicitous in both (53) and (54). This is expected under the assumption that LUI-MÊME is only licensed under narrow focus.

Another class of cases exemplified in (55):

- (55) *What's up? Why are you looking so upset?*  
 a. — *John KILLED himself.*  
 b. — *?John KILLED {my dog/him}.*

The deaccenting of the object in (55b) signals the referent of *my dog* or *him* as given, and therefore needs to be justified by a broader discourse context. Contrastively, the deaccenting of the object in (55a) does not necessarily correlate with this presupposition effect: under the indicated prosodic contour, (55a) may be read as athetic clause, conveying nothing but new information, or as a predication associating a discourse-new predicate (*killed himself*) with a discourse-given subject (*John*). The deaccented use of HIMSELF exemplified in (55a) seems characteristic of the unmarked, non-focused reflexive reading. Further English examples are given below in (56) with French translations, which show that unlike English HIMSELF, French LUI(-MÊME) is infelicitous if it does not bear narrow focus:

- (56) a. *John walked to the front desk and introduced himself.*  
 a'. *Jean se dirigea vers la réception et se PRÉSENTA (??LUI[-MÊME]).*  
 b. *If John hadn't BURNT himself, he wouldn't have SCREAMED.*  
 b'. *Si Jean ne s'était pas BRÛLÉ (??LUI[-MÊME]), il n'aurait pas CRIÉ.*  
 c. *When I walked in, John was facing the mirror, STARING at himself.*  
 c'. *Quand je suis entré, Jean était devant sa glace, en train de se REGARDER (??LUI[-MÊME]) FIXEMENT.*  
 d. *To hold a pork-stuffed bun in an overcrowded bus is a lousy idea, John ADMITTED to himself.*  
 d'. *Jean se dit (??à lui[-même]) que de tenir à la main une BRIOCHE AU PORC au milieu d'un BUS BONDÉ était décidément une TRÈS MAUVAISE IDÉE.*

The position of primary accent in these examples may ambiguously trigger narrow focus on the verb (as in [54]), or broad focus on the predicate – the natural interpretation in (56) without further context. In this latter case, I propose to assume that HIMSELF is semantically integrated into the predicate, forming a reflexive predicate in the sense of Reinhart and Reuland (1993). This integration is signalled by prosodic reduction of the pronoun – Reflexive Deaccenting. A crucial contrast between English and French in (56) is that LUI(-MÊME) cannot undergo Reflexive Deaccenting.

3.4. The impact of prosody on the semantic development of pronouns

The above description has brought out the two contrasts summarized below in (57) between English HIMSELF and French LUI-MÊME:

- (57) a. *English HIMSELF is in complementary distribution with HIM in A-bound contexts, while French LUI-MÊME alternates with LUI under a given referential index, except in [-od] prepositional contexts (cf. [17]). In other words, HIMSELF stands as a syntax-driven reflexive marker (an A-bound “anaphor”) in a subset of its occurrences, while French LUI-MÊME is but an intensified variant of LUI even when it is A-bound.*
- b. *English HIMSELF may bear primary accent, secondary accent or be deaccented, while French LUI-MÊME must be under primary accent and construed semantically under narrow focus.*

I now propose to derive these two properties from the following general contrast between English pronouns, and French non-clitic pronouns:

- (58) a. *English pronouns are prosodically **weak**, since they may undergo deaccenting and be realized as “leaners” (Zwicky 1982).*
- b. *French non-clitic pronouns are prosodically **strong**, since they do not undergo deaccenting, unlike clitic pronouns, which inherently qualify as leaners (cf. Miller 1992).*

English pronouns are less weak than French clitics, since they are not *a priori* closed to focal accent.<sup>22,23</sup> They are on the other hand weaker than French non-clitic pronouns, since the latter do not undergo deaccenting. This is exemplified above in (38d), and below by the contrast between English (59) and its French counterpart in (60):

- (59) *How did the coach<sub>z</sub> feel when Paul<sub>k</sub> won the tournament?*  
 — *He<sub>z</sub> felt very PROUD of him<sub>\*z/k</sub>.*
- (60) *Comment est-ce que l'entraîneur<sub>z</sub> a réagi quand Paul<sub>k</sub> a gagné la course?*  
 a. — *Il<sub>z</sub> s'est senti TRÈS FIER DE LUI<sub>z/k</sub>.*  
 b. — *??Il<sub>z</sub> s'est senti très FIER de lui<sub>z/k</sub>.*

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22. Clitics may only be contrasted like sub-word-level morphemes or word parts, i.e. within their including constituents. Thus the acceptability of (i-b) in French is parallel to that of (i-a) in English:

- (i) a. *Let's not go to a MOTEL, let's go to a HOTEL.* [Bolinger 1961]  
 b. *Quand on rencontre un ministre femme il faut LA saluer, pas LE saluer.*  
 lit. 'When you meet a female minister you must HER greet rather than HIM greet.'

But clitics may not be construed under primary focus:

- (ii) *Jean et Marie vont venir tous les deux demain. Tu comptes saluer qui?*  
 'John and Mary are both coming tomorrow. Who are you planning to greet?'  
 — *\*Je compte LA saluer.*  
 lit. 'I'm planning to HER greet.'  
 (compare English: *I'm planning to greet HER.*)

23. A special case is the pronoun *one*, which (unlike other pronouns in the simplex HIM paradigm), can never bear stress (neither primary nor secondary). This leads to the contrasts illustrated below:

- (i) a. *John<sub>z</sub> fears that some mischievous benefactor should send presents to everyone except {HIM/HIMSELF}<sub>z</sub>.*  
 b. *One<sub>z</sub> sometimes fears that some mischievous benefactor should send presents to everyone except {\*ONE/oneSELF}<sub>z</sub>.*
- (ii) a. *Like all feelings felt for {HIM/himSELF}<sub>z</sub>, John thought, it made him<sub>z</sub> sad.*  
 b. *Like all feelings felt for {\*ONE/oneSELF}<sub>z</sub>, Mrs Ramsay thought, it made one<sub>z</sub> sad.* (adapted from Woolf, *To the Lighthouse*)
- (iii) a. *John<sub>z</sub> thinks that pictures of {HIM/himSELF}<sub>z</sub> are pleasant to look at.*  
 b. *One<sub>z</sub> rarely thinks that pictures of {\*ONE/oneSELF}<sub>z</sub> are pleasant to look at.*

Note that the prosodic weakness of *one* cannot be due to its semantic arbitrariness, since French arbitrary *soi* is regularly accented.

In (59), the pronoun undergoes “deaccenting of the given”, so that primary accent falls on the predicate head *proud*. In (60), on the other hand, the entire string *très fier de lui* is pronounced under high pitch corresponding to primary accent.<sup>24</sup> The strength of French non-clitic pronouns could derive from more general prosodic properties of this language, which has no word-stress but only a phrase-final accent.

Let us now consider how these prosodic properties of pronouns might contribute to influence their interpretive properties. I argued above that although simplex personal pronouns such as HIM or LUI are *a priori* open to both argument-binding and topic-binding, topic-binding stands as their unmarked interpretation, since it is insensitive to lexical semantic features. Consider the generalization proposed in (61):

- (61) *All other things being equal, the deaccenting of HIM-type pronouns contributes to favour their topic-binding over their argument-binding.*<sup>25</sup>

This generalization is consistent with the idea that discourse-given information is deaccented (Ariel 1990; Büring 2007). This correlation is illustrated by French third-person pronouns, among which clitics (other than *se*<sup>26</sup>) must be topic-bound (cf. [16c], [20a], [21a]), while non-clitics are ambiguous between topic-binding and A-binding (cf. [2a], [20b], [21b]). Under the general assumption in (61), the fact that French non-clitics cannot undergo deaccenting might contribute to explain their persisting ability to be A-bound in Modern French, which in turn has a blocking effect on the development of LUI-MÊME as a syntax-driven reflexive marker. As the *intensified* variant of a *strong* pronoun, French LUI-MÊME may only be motivated by narrow focus on the pronoun, including in A-bound contexts such as (4). Independent empirical evidence supporting (61) is provided by the development of pronouns in French-based creoles: at an early stage of creole grammars, represented for instance by the most conservative

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24. The details of the prosodic contour in (60a) are left here as an open issue. The only relevant element for this discussion is the fact that the pronoun in this example undergoes no prosodic reduction.

25. An apparent counterexample to this generalization is *one*, mentioned in Note 23, which although always unstressed, is not topic-bound. This restriction may however be derived from the quantified (“arbitrary”) character of *one*, which *a priori* conflicts with topicality. In order to be topic-bound, pronouns must be made up of features allowing them to identify discourse referents.

26. Cf. Reinhart and Siloni (2005). French SE partakes in a special morphosyntactic arity-reduction process internal to argument structure, and is thus immune to topic-binding.

(Northern) dialect of Haitian (cf. Zribi-Hertz and Glaude 2007), third-person pronouns (*li* in the singular) are ambiguously construed either as topic-bound or as A-bound in such examples as (62):

(62) Haitian Creole

*Jan wè l(i).*

John see 3SG

(i) 'John saw him/her.' (ii) 'John saw himself.'

In more advanced varieties of Haitian, however, as well as in Martinican and Guadeloupean, for instance, (62), or its Martinique-Guadeloupe analogue, is only read as non-reflexive, and a bodypart possessive takes over the reflexive reading:

## (63) Haitian Creole

*Jan wè tèt li.*

John see head 3SG

lit.: 'John saw his head.' = 'John saw himself.'

This suggests that in the creoles under discussion, bodypart possessives are developing into syntax-driven reflexivity markers motivated by A-binding, an assumption confirmed by native speakers' acceptability judgements: while some Haitian speakers straightforwardly discard the reflexive reading for (62), others who do accept it nevertheless remark that the bodypart construction in (63) would be optimal to convey this interpretation. Things are very different in French, where speakers unanimously favour, e.g., (2a) over (2c), under the reflexive reading. Interestingly, unlike the French non-clitic pronouns from which creole pronouns are historically derived, creole pronouns undergo a phonological reduction which leads to deaccenting: in Haitian (62), *li* drops its final vowel, as shown in (64a), while in Martinican/Guadeloupean it drops its initial consonant so that the remaining vowel [i] is realized as a glide, as shown in (64b); in either case, the pronoun loses its syllabic autonomy:

## (64) Haitian Creole

a. *Jan wè li.* > *Jan wè-l.*

Martinican/Guadeloupan Creole

b. *Jan vwč li.* > *Jan vwč-y.*

John see 3SG

'John saw him/her'.

The semantic contrast between French and creole 3rd-person pronouns is predicted under the generalization in (61): once they undergo a phonological reduction leading to deaccenting, creole 3rd-person pronouns select topic-bound over argument-bound readings and thus develop a "Condition B" effect; correlatively, a marked strategy needs to be developed for argument-binding (reflexive readings). This evolution fails to affect non-clitic LUI in French, since the pronouns in this paradigm do not undergo prosodic reduction.

The prosodic weakness of English HIM could thus contribute to account for its having become restricted to topic-binding and excluded from A-binding, in other words, for its having inspired Chomsky's Binding Condition B. As argued by Levinson (1991), the disjoint-reference effect associated with HIM may account for the development of intensified HIMSELF as a reflexivity marker. The Reflexive Deaccenting of HIMSELF which occurs in such examples as (56) on the other hand correlates with the reduced argument structure of semantically

reflexive predicates, which involves two different  $\theta$ -roles linked to the same referent. As argued above in Section 3.2.3, the prosodic reduction which affects HIMSELF in (56) is different from the case exemplified in (53)–(54), which is simply an instance of “deaccenting the given”, involving narrow focus on the preceding lexical head. The fact that HIMSELF may undergo deaccenting seems paradoxical since SELF-marking was initially motivated by intensification. As a result of prosodic reduction, HIMSELF is open to three types of prosody in Modern English: primary accent, secondary accent, no accent. French LUI-MÊME, on the other hand, is restricted to primary accent and does not stand as a syntax-driven reflexivity marker, two correlated properties under the proposed analysis.

A final remark is in order regarding the compatibility of the above assumptions with the well-supported Phonology-Free-Syntax Principle (cf. Miller, Pulum and Zwicky 1997), which states that phonological properties should as a whole be invisible to syntax. Thus, no syntactic-agreement rule should ever be restricted in its application to, e.g., words beginning with a vowel. The assumption, proposed above, that the prosodic properties of pronouns could play a relevant role in the development of interpretive properties, hence of their distribution, could appear as a violation of the Phonology-Free-Syntax Principle. However, the prosodic properties which are relevant to the evolution of pronouns do not pertain to morphophonology, but to phrasal prosody, which crucially contributes to encode information structure. Hence, what the evolution of pronouns is ultimately sensitive to is not phonology, but information structure, signalled by prosody. Since the sensitivity of anaphora to information structure is a well-supported assumption (cf. Chomsky 1977; Reinhart 1983; Kuno 1987; Erteschik-Shir 1997, a.o.), the idea that phrasal prosody may be a determining factor in the interpretation and distribution of pronouns leads to no paradox.

#### **4. Concluding remarks**

The analysis proposed in Section 3.3 incorporates several intuitions put forward in the past linguistic works surveyed in Section 2: that the occurrence of English HIMSELF (unlike that of French LUI-MÊME) is syntax-driven in a subset of cases; that the interpretive properties of English pronouns are very much, though not exactly, similar to those of French clitic pronouns, rather than to those of French non-clitic pronouns; and that French non-clitic pronouns form, so to speak, a “fourth type” of linguistic expressions with respect to reference relations. The relevance of the prosodic factor in the evolution of pronouns of course does not preclude that other independent factors should be at work, for instance Case properties, or economy principles such as “Avoid Pronoun”. From a typological

perspective, the above analysis predicts that all other things being equal, the prosodic weakness of HIM-type pronouns in any language should contribute to favour disjoint-reference effects.

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