Negotiated Risks

Rudolf Avenhaus · Gunnar Sjöstedt (Eds.)

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International Talks on Hazardous Issues

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IIASA

Prof. Dr. Rudolf Avenhaus
University of the Federal
Armed Forces Munich
Werner-Heisenberg-Weg 39
85577 Neubiberg
Germany
rudolf.avenhaus@unibw.de

Prof. Dr. Gunnar Sjöstedt
The Swedish Institute of
International Affairs
Drottning Kristinaa Voeg 37
S 10251 Stockholm
Sweden
gunnar.sjostedt@ui.se

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Foreword

The International Institute for Applied Systems Analysis (IIASA) has had risk as a research topic on its agenda right from its inception in 1972. Risk has played a major role in the Energy Program, with research being carried out both in-house and in cooperation with other international institutions like the International Atomic Energy Agency (IAEA) and national research centers. Research areas were primarily the evaluation of all possible risks within one category of energy supply like nuclear fission or fusion or fossil fuels and, even more important, the comparison of risks of different energy-supply strategies.

Later on an independent program was started which still exists today under the name Risk and Vulnerability. There is a large amount of literature on risks to which IIASA's research programs have contributed significantly over the years, and there is, of course, an abundance of published work on international negotiations, part of which is a result of the work of the Processes of International Negotiation (PIN) Program. There are, however, so far no studies on the combination of these two strands. Therefore, and as research on both topics is housed at IIASA, we are happy that our PIN Program has undertaken the difficult and important task of analyzing what the editors of this book have called negotiated risks.

Throughout the book it is pointed out that there are actor-driven risks, namely, those which are posed by international negotiations themselves, and issue-driven risks which are caused by large-scale human activities. It is also made clear in the book that the emphasis is laid on the latter. In fact this book deals with some of the most serious risks for mankind: climate change, nuclear activities, and weapons of mass destruction.

This volume contains both scientific analyses on the nature of internationally negotiated risks, as well as analyses of concrete risks. Both are of immense practical relevance in the larger context of international negotiations.

Therefore I consider this book an important achievement, and quite in the spirit of IIASA's mission laid out at its foundation and pursued ever since.

Laxenburg, Summer 2008 *Leen Hordijk, Director*

Preface

International negotiation between states involves risks. Some are risks that may determine the future of mankind, for example, risks posed by climate change, use of nuclear energy, large-scale use of chemical agents like fertilizers, and weapons of mass destruction. In international cooperation and dispute settlement, governments, organizations, and other actors will wish to address or, indeed, will need to address *issue-driven* risks such as these. An important topic in their own right in the context of negotiation analysis, *issue-driven* risks are the main type of risk dealt with in this book.

There are also risks posed by international negotiations themselves, which need not always have a negative impact on negotiations. Risk taking by a leading actor may help parties to get a negotiation process out of an impasse or make a stalemate more hurting to other parties. We call such risks *actor-driven* risks, and these will also be covered in this book.

The book is another product of the work of the Processes of International Negotiation (PIN) Program at the International Institute for Applied Systems Analysis (IIASA) located in Laxenburg, near Vienna, Austria. Since 1988 the PIN Program has been managed by an international Steering Committee of scholars, which meets three times a year to develop and propagate new knowledge about the processes of international negotiation. Among other activities, the Committee conducts one or two workshops every year devoted to a collective publication project that involves scholars from a wide spectrum of countries; this allows us to tap into a broad range of international expertise and to support scholarship on aspects of international negotiation. This book provides another illustration of PINs work, and we hope that it contributes to meeting the ambitious goals that the PIN Program has set itself from its inception.

PIN books are not just conference proceedings. Their intention is rather to establish the state of the art of international negotiations and stimulate further work on the subject to which they are devoted. Therefore, the papers contributed usually have to be revised and discussed, and then rewritten. This is even more the case here than in other books we have produced. The necessary inclusion of the two important topics of climate change and nuclear reactors turned out to be more difficult

than anticipated. After the project was already well advanced, new authors had to come on board. Thus, the project took a long time to come to fruition.

We wish to express our gratitude for the participation of the Steering Committee members, all of whom provided a constructive atmosphere and helpful comments at many stages of the project. We also appreciate the flexible and responsive participation of the authors of the individual chapters who joined the project from a number of countries. We are grateful too for the ongoing support for the project by IIASAs director, Leen Hordijk, who made PIN's productivity possible, and also to IIASA's publications team. Support for all our activities and careful and pleasing attention to every details of our work have been provided by Tanja Huber, our project administrator.

Combining the systems analysis of IIASA with the diplomatic atmosphere of Empress Maria Theresa's beautiful summer palace in Laxenburg, where IIASA carries out its state-of–the–art-work within Baroque walls, has, indeed, inspired our efforts.

Laxenburg,
Summer 2008

Rudolf Avenhaus
Gunnar Sjöstedt
Editors

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List of Contributors

Rudolf AVENHAUS is Professor of Statistics and Operations Research at the University of the Federal Armed Forces Munich. Prior to his academic appointment in 1980, he was research assistant in Mathematical and Physical Institutes at the Universities of Karlsruhe and Geneva, Research Scholar at the Nuclear Research Center Karlsruhe, and Lecturer at the University of Mannheim. He is author of numerous papers in Physics, Statistics, and Game Theory and its applications, in particular, arms control and disarmament, co-editor of four books on nuclear safeguards, and author of several books. He is a member of the Steering Committee of the Processes of International Negotiation Program (PIN) of the International Institute for Applied Systems Analysis (IIASA).

Helmuth BÖCK is a lecturer at the Vienna University of Technology on Reactor Physics, Nuclear Engineering, Practical Exercises on Reactor Physics and Instrumentation and Control. He has published over 250 times in international journals and undertaken more than 80 expert missions on behalf of the International Atomic Energy Agency.

Keith COMPTON. After serving in the U.S. Navy as a nuclear trained submarine officer, Compton received his PhD from Clemson University for work on the assessment of radiological risks posed by nuclear facilities of the former Soviet Union. He was associated with the International Institute for Applied Systems Analysis (IIASA) between 1997 and 2003, working on the Radiation Safety of the Biosphere Project on evaluation of radiological hazards in the former Soviet Union, and with the Risk, Modeling, and Society Project on the assessment of the risks from urban flooding. He is currently a systems performance analyst at the U.S. Nuclear Regulatory Commission.

Dana DRÁBOVÁ is the chief nuclear safety and radiation protection regulator in the Czech Republic. She has participated in several expert missions on behalf of the International Atomic Energy Agency (IAEA) in the field of upgrading radiation protection infrastructure in developing countries, and since 2006 has been Chair of the Western European Nuclear Regulators Association.

Christophe DUPONT is Director of the "negotiation laboratory" at the Business School of Lille, France and a consultant at CRC Conseils Associés, Jouy-en-Jonas, France. He is author of *La négociation: conduite, théorie, applications*, and co-author of several books and articles on negotiation.

Guy Olivier FAURE is Professor of Sociology at the Sorbonne University, Paris V, where he teaches "International Negotiation," "Conflict Resolution," and "Strategic Thinking and Action." He is a member of the editorial board of three major international journals dealing with negotiation theory and practice and his major research interests are business and diplomatic negotiations, especially with China, focusing on strategies and cultural issues. He is referenced in the Diplomat's Dictionary published by the United States Peace Press, Washington, and quoted as one of the "2000 outstanding Scholars of the 21st Century" by the International Biographical Centre, Cambridge, UK. He has authored, co-authored and edited 15 books and over 80 articles. He is a member of the Steering Committee of the Processes of International Negotiation Program (PIN) of the International Institute for Applied Systems Analysis (IIASA).

Fen Osler HAMPSON is the Chancellor's Professor and Director of the Norman Paterson School of International Affairs at Carleton University in Ottawa, Canada. He is the author/co-author of eight volumes and editor/co-editor of 23 other volumes on international affairs. His recent writings explore the role of third parties in the mediation of international disputes.

P. Terrence HOPMANN is Professor of International Relations and Director of the Conflict Management Program at Johns Hopkins University's School of Advanced International Studies in Washington, DC, having been Professor of Political Science at Brown University from 1985 to 2008. His research focuses on the processes of negotiation and conflict resolution on security issues within states, regionally within Eurasia, and globally.

Sabine KOESZEGI is Associate Professor at the School of Business, Economics, and Statistics, University of Vienna. She has held international visiting research posts at universities in Taiwan and Germany and was visiting professor at the University of Ottawa, Canada.

Victor KREMENYUK is a Russian historian and political scientist, specializing in international relations, foreign policymaking, crisis control, and conflict management, including negotiation analysis. Actively engaged in Soviet/Russian foreign policymaking since the days of Gorbachev, he has published about 350 works in Russian, English, Arabic, Chinese, and Swedish, and was editor of the landmark book, *International Negotiation: Analysis, Approaches, Issues*, now in its second edition. Professor Kremenyuk is also holder of the USSR National Prize in science and technology (1980), of the Russian government prize for strategic risks analysis (2004), and several other international awards. He is a member of the Steering Committee of the Processes of International Negotiation Program (PIN) of the International Institute for Applied Systems Analysis (IIASA).

Rose McDERMOTT is currently a fellow at the Center for Advanced Study in the Behavioral Sciences at Stanford University. Her main area of research is political psychology in international relations. She has written numerous articles and book chapters on experimentation, the impact of emotion on decision making, and evolutionary and neuroscientific models of political science.

Boris PORFIRIEV is Director of the Risk and Crisis Research Center of the Institute of Economics, Russian Academy of Sciences and board member of the European Crisis Management Academy (ECMA). From 2002 to 2006 he was the first vice-president of the International Research Committee for Disasters of the International Sociological Association, contributing to numerous projects on disaster risk reduction and crisis management in Russia and internationally. His publications on disaster and crisis policy, economics and management of natural hazards including the risk of climate change include 29 books and over 200 papers and reports.

Beverly A. SAUER. Prior to becoming Professor of Management at Georgetown's McDonough School of Business, Sauer was Professor of Management in the Carey Business School of Johns Hopkins University and Associate Professor of English and Rhetoric at Carnegie Mellon University. She has written extensively on the subject of risk communication in difficult cross-cultural contexts. Her book, *The Rhetoric of Risk: Technical Documentation in Hazardous Environments* (Lawrence Erlbaum, 2003), was awarded the prize for Best Book in Scientific and Technical Communication from the National Council of Teachers of English. Her most recent research, on multimodal communication (speech and gesture) in South African coal mines, combines an interest in communication with larger issues of social transformation and public health policy in post-Apartheid South Africa.

Gunnar SJÖSTEDT is director of studies at the Swedish Institute of International Affairs and associate professor of political science at the University of Stockholm. His research work covered the OECD, European Community, international trade politics, non-military power relations of states, and multilateral negotiation. He is the editor or co-editor of several books in the PIN series. He is a member of the Steering Committee of the Processes of International Negotiation Program (PIN) of the International Institute for Applied Systems Analysis (IIASA).

I. William ZARTMAN is Jacob Blaustein Distinguished Professor Emeritus of Conflict Resolution and International Organization at the Nitze School of Advanced International Studies of the Johns Hopkins University. An author of many books on negotiation, he was a Distinguished Fellow at the US Institute of Peace and has an honorary doctorate from Louvain University. He is a member of the Steering Committee of the Processes of International Negotiation Program (PIN) of the International Institute for Applied Systems Analysis (IIASA).

Negotiator's Risk: The General Case

Christophe Dupont

Introduction

Negotiation comprises a series of risky choices made by interactive agents. The choices are risky because: 1) the agents are interactive; 2) the situations are complex, involving potentially intricate issues; 3) there is a variety of contexts; and 4) the outcomes are uncertain. The nature, sources, and intensity of risk in negotiated situations are as diverse as the situations themselves. Certain situations merit particular attention because they are associated with special difficulties or because the topics under negotiation have a particular significance for society, for example, negotiations in which risk itself is negotiated. That is the theme of this book. Negotiation in the general sense, however, considers all types of negotiations, whatever their context, domain, or actors, and irrespective of whether they are bilateral, plurilateral, or multilateral. This chapter explores the "general case." The general case offers theoretical and (mainly) practical observations, from which certain assumptions can be drawn and applied to negotiated risks.

The chapter first deals with a few theoretical considerations. The rest is divided into three sections: 1) the negotiator's exposure to and perception of risk and the way he/she communicates it; 2) risk assessment and evaluation; and 3) the risk management and strategies used by the negotiator.

Theoretical Considerations

Theories on risk, as they currently stand, cannot be separated from the more general theories that have been designed to describe, explain, or (hopefully) predict societal behaviors in all their diverse dimensions, including economic or social events and

Christophe Dupont
Lille School of Mangement, France, e-mail: s.fjournier@esc-lille.fr

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institutions. Risk theories diverge in many descriptive and, even more so, normative aspects; there is, however, a dominant paradigm that Jaeger et al. call the "rational actor paradigm" (RAP) (Jaeger et al., 2001). This line of thought posits that, both descriptively and normatively, a coherent and far-reaching theory of rational choice can apply to a large variety of societal phenomena, perhaps most visibly in the field of economics and finance.

The foundation of this theory rests on four key propositions (Jaeger et al., 2001, p. 52).

- Rational actors can choose among different possible actions;
- Rational actors assign (objective or subjective) probabilities to various outcomes;
- Rational actors can order actions as well as their outcomes according to their preferences. Preferences for actions involve some degree (positive, zero, or negative) of risk aversion for specific choice situations;
- Rational actors try to choose an action that is optimal according to their own preferences.

These propositions mean that the main risk issues (perception and communication, assessment, evaluation and management) can be explored and explained by the application of a procedure for, and a model of, rational choice. It is worth noting that the procedures and the model comprise the main steps of option selection, precise assessment (in terms of consequences of outcomes and probabilities), and unambiguous evaluation (in terms of optimization). From these, appropriate strategies can be developed.

This dominant paradigm, inspired fundamentally by a "mechanistic" view of decision making (Jaeger et al., 2001, p. 243) and by the prevalence of utilitarian premises, has proved to be particularly appropriate for applying to "processes that lead to a stable structure of decision makers with mutually consistent expectations, stable preferences, and reasonably well-known decision analyses" (Jaeger et al., 2001, pp. 260–261) such as "market economies," a "society of nations," and "kinship systems" (Jaeger et al., 2001, p. 261). In these situations risk analysis can—and, according to the authors, should—be applied in accordance with the principles underlying the approach.

The paradigm has, however, been the subject of a number of criticisms, covered comprehensively in (Jaeger et al., 2001). Risk analysis thus appears to be more complex and more open-ended than assumed by the largely technical analyses that dominate this sphere. Contesting theories that draw upon research results and apply different presuppositions or axioms regarding human behaviors have flourished (e.g., systems theory in sociology, cognitive theories in psychology, critical or postmodern theories in the social sciences), and this provides a fertile ground for at least questioning the current approaches to risk, and even for proposing a way of reconstructing them.

To what extent then has the approach to risk inherent in negotiation theory been influenced by this situation? A first observation is that, to date, risk does not seem to have been a privileged theme of many negotiation textbooks or contributions. Not that the concept, or the word, is absent from these works (there are, for example,

mentions in the index of Lax and Sebenius, 1996). However, it appears in the subject index of neither Kremenyuk (2002)[1] nor Peyton Young (1991). The reference to risks in negotiation ("the general case" in the sense of this book) is often either implicit or limited to the presentation of game theory (as it applies to negotiation) or to the question of the risk aversion of negotiators.

Yet several strands in negotiation theory have explored, some in great detail, the question of risks in negotiations, in other words, negotiators' risks. In fact, it is instructive to note that these various approaches can be classified in relation to their connection or direct linkages to the more general theories mentioned above. One group of these negotiation theories adopts (and ultimately adjusts) the rational choice model. This is the case in the literature that looks at negotiation as a decision analysis problem. Some major contributions on negotiation draw on the traditional model(s) of actor rationality (e.g., Raiffa, 1982, 1997) and the classic game theory approach applied to negotiation (e.g., Avenhaus, 2002, pp 202–228).

In parallel with this development, a number of important contributions on negotiation and risk have departed from the main assumptions of the rational actor paradigm (with its corresponding rational negotiator paradigm or RNP). Perhaps the most convincing assault is that of Pruitt and Carnevale (1993) who show the limits to the maximization of self-interest (one of the foundations of RAP) as the exclusive motivation of negotiators. Many points made by the theories that compete with RAP-based theories can be transferred from general theory to the negotiation arena. Some of these—regarding perception, communication, assessment, and management—are mentioned in the sections to come.

Another strand of negotiation theories that restrict the use of RAP in studying negotiator behavior where there are risks in the negotiation is represented by the cognitive school of psychology (notably, Tversky and Kahneman, 1974; Kahneman et al., 1982). These authors, dealing with judgments under uncertainty, have clearly demonstrated the existence of non-rational behaviors and the possible interference of certain factors that question some of the assumptions of RAP, for instance, the phenomenon of preference reversals.

One conclusion that stems from these preliminary remarks on the theory of risk in negotiations is that, from the negotiator's point of view (in practice), the study of risks should attempt to capture the phenomenon from a plurality of angles. In this chapter, this idea will be applied to the "general case." The lesson is even more imperative when one considers negotiations where the issue involved is the negotiation of the risk itself, which is the topic addressed in subsequent chapters of this book.

Exposure of the Negotiator to Risk: Perception and Risk Types

In practice, most negotiators are aware that any negotiation exposes the participants to risks: their degree of awareness of those risks, however, depends on several

[1] However, one chapter deals with game theory, and risk is examined in various other chapters.

factors. Of particular significance here are risks linked to: 1) context and issues ("situational risks"); 2) the person (attitude toward risks in general, experience, cognition, feelings, and emotions: "negotiator's profile risks"); and 3) anticipation and expectations regarding the impact of the behaviors of opponent(s) when engaged in interactive processes in a negotiation ("others' behavioral risks"). Hence, awareness of risk exposure can be said to be variable in respect to both circumstances and individuals (or groups). Awareness is closely connected to perception, and it influences the communication patterns among participants.

The way negotiators perceive risks combines awareness of: 1) exposure to risk in negotiations in general; and 2) the process of identification of the characteristics of risk in a particular case. Negotiators may perceive the particular negotiation as being more or less "risky" (a problem of intensity) or as tending to substantiate some sources of risk rather than others (a problem of "quality" or "differentiation"). In many negotiations (especially in simple or routine encounters and probably for a large number of professional negotiators), risk is implicit and considered inherent to the process. This derives from experience and judgment rather than from a specific concern, as long as it is perceived to be within reasonable bounds, that is, within some notion (largely empirical and rather imprecise) of "acceptability," such as in a game in which the stakes are not too high. But the question turns out to be quite different in more complex or unusual negotiations. Perceptions—and, ultimately, communication about risks—are much more precise (less hazy), more intellectualized, and more troublesome for the negotiator. Perception is focused on possible—but not predetermined—hazards or surprises that may have harmful consequences and that place the negotiation in a world of uncertainties.[2] The negotiators feel (somewhat) insecure about their anticipations (to what extent do they now make sense?), expectations (how will the process and outcomes turn out?), and strategies (how do we deal with and adjust flexibly to fully or partly unknown phenomena?). In these circumstances the risk dimension needs to be more explicit, but at the same time explicitation is more difficult to express.

The crux of the matter is that negotiation is a time-related activity. It develops in sequences, sometimes well delineated, sometimes not. Deciding to negotiate—the start of the process—involves risk; there may be alternative ways of solving the problem, of which negotiating seems to be the best option available as long as preconditions are met to make it a workable (in RNP: the most workable) proposition (in RNP: in cost–benefit terms).[3] After the decision is taken to negotiate, a series of sequences and moves are initiated, in which risk exposure may take a variety of forms (see below); but while these seem to be dissolved at the moment of

[2] A distinction is made between "risk" and "uncertainty" in the discipline of statistics, with "risk" referring to events that are subject to probabilities because the actors are able to establish a probability distribution; "uncertainty " refers to "non-statistical events," that is, events that are unique or may be considered as such (see, for instance, Hertz and Thomas, 1983). Probabilities may be objective or subjective ("Bayesian"). In the former, the probability distribution refers to magnitudes to which the axioms and calculus of statistics are applied (Kahneman et al., 1982). However, there is a tendency in the literature not to be too precise in the use of the terms "risk" and "uncertainty." Risk is then immediately linked to "associated uncertainties."

[3] These issues are generally dealt with in the literature by reference to "negotiability" or "maturity."

agreement (or of failure to agree), this may well be an illusion because problems of interpretation, and chiefly of implementation, give rise to new sources of risk.

Inventorying the large variety of risk sources with which negotiators are confronted may be a useful approach to risk perception, as follows:

Situational Risks: Issues, Context, Stakes, and Power

Issues: These may not be particularly clear and unambiguous in a number of situations. Sometimes the negotiations (or pre-negotiations) are one way of making the issues relevant and explicit. In an international conference, agenda setting is one of the most important activities. In many negotiations where negotiators decide to set an agenda, "another" or a "miscellaneous" item is often included to leave the way open for additional, perhaps unexpected, items to be added. Even if the identification of issues is agreed by all parties, the question of interpretation remains, all the more so when issues are predefined in both general and abstract terms. Moreover, the more pragmatic attitudes in some cultures tend to prevent issues from being codified too early in the process.

Against this background, several aspects of the issue-related uncertainty problem turn out to be crucial. One is the importance of perceptions. Parties see itemization and the substance of issues through their own eyes and often project their interpretation or visualization on to the opponent. The resultant gap between perceptions and reality can lead to a danger of making misjudgments. Communication, depending on how it goes, can help (or hinder) the process of reconciliation. Avoiding the perception gap, however, always proves extremely difficult.

Another point is that negotiations are not something that happen instantaneously. They develop over time, allowing changes to take place: new issues may emerge (sometimes as part of a strategic game; sometimes in response to external factors that are exogenous to the actors; sometimes merely as a result of the process). Issues that have already been defined may change as a result of new or modified information, natural or forced linkages arising between issues, transformations in substance and language, etc. The longer an encounter lasts, the greater the probability of the issues having to be reconfigured: the ability to reconfigure is a factor that is core to the negotiating activity, as it provides whatever flexibility is needed to progress toward an agreement.

Of course, there are cases where one cannot really talk about uncertainties in respect of issues, for example: 1) in negotiating a routine commercial contract, where issues are explicit, unambiguous, and fall within known limits; 2) in situations where perceptions are close to reality; and 3) in circumstances where the time factor is well managed by the participants. In a number of negotiating situations, however, this is not the case: the negotiator should be aware that any uncertainty in the future begins with the way issues are structured and the impact of actors' differing perceptions. What is true of issues also applies to context and to stakes, which are the basic constituent elements of negotiations.

Context: This comprises a myriad of volatile elements covering numerous fields: historical, political, administrative, economic, cultural, etc. Not all these background factors are stable in the short term: abrupt, unexpected changes can occur; the opponent's chief negotiator may be unexpectedly replaced; new elections may produce a different result from that "predicted" by the media and even political experts; an important customer or supplier may default; and the stock exchange may crash unexpectedly. Many of the events that make up the negotiation are subject to abrupt changes, providing no certainty that future conditions will be as stable as they may be now—a perception that is often quite wrong. As with other elements of the negotiation process, the saying, "It ain't over till it's over" also applies to contextual factors.

Stakes: A crucial element of a negotiation, stakes may be evaluated by measuring what has been sanctioned by the negotiation process and by the negotiation's outcome in terms of the interests and values of the negotiators. Uncertainty in respect of the stakes comes from at least two sources. One is, of course, the uncertainty about what the end result of the negotiation will be and its consequences, both now and later: this affects each negotiator on an individual basis. It would be natural to assume that each negotiator is perfectly clear in his own mind about the stakes of the negotiation; however, an assumption of this sort is often unrealistic, especially if one also tries to make a concrete determination as to how important the stakes are, or to assess "what is at stake" in the negotiation based on any number of complex factors. To give just one example: the impact of parallel or unconnected developments in other areas. But the greatest uncertainty is the difficulty a party has in assessing not only the nature of the stakes but also the importance accorded to them by the opponent. This failure or inability to know in advance of, and even during, the process, the nature or size of stakes internalized by opponents, is a major uncertainty for both parties because this knowledge is instrumental in the development of strategies. Furthermore, the degree of convergence (or divergence) of stakes predetermines, at least to some extent, the chances of an agreement being reached as well as what the substance of the agreement will be.

Power: There are many competing theories regarding the role of power in negotiations (see for instance, Ury, 1991). Power is not a given; the power balance in the bargaining situation is subject to change over time, sometimes quite abruptly. Negotiators not only face this uncertainty (uncertainty due, for instance, to the unexpected intervention of external factors or actors) but they are also confronted with difficulties, over and above those already mentioned, in trying to correctly assess the relative power balance at any given moment. Misperceptions by negotiators regarding their own power and that of their opponent are a major cause of failure in negotiations. Such misperceptions are due to the complexity of the factors involved in the substance of power, while some can be either intangible or result from negotiators' interactions.

Attitudes and Behaviors

Risks associated with uncertainties resulting from specific elements of a negotiation are operationalized by the actors. Each actor has his own in-built sensitivities and subjectivity which he implicitly confronts with his own attitudes toward risk and incorporates into his personal behavioral blueprint.

Attitudes and behaviors influence the negotiation process in several ways, and they are influential in terms of the strategic and tactical choices that the negotiator will use. These choices, which are at the core of the negotiation process (and may be deliberately planned or decided opportunistically) are a function of many factors. But, whatever their origin, they will reflect the perceptions of the negotiator on his "position" and on that of his opponent(s). Cognitions, risk attitudes, and personality traits have an important impact on this phenomenon.

Mental and cognitive factors: Mental mechanisms that generate thoughts and judgments are instrumental in framing perceptions; one negotiator will not frame an issue identically to his opponent(s). Divergences may apply to facts, their interpretations, the evaluation of their relevance to the problem, and the assessment of their consequences. These gaps should ideally be bridged by exchanges of information, but that presupposes the ability on the part of the negotiators to communicate appropriately, plus a willingness to participate fully in the process without resorting to concealment or, worse, misrepresentation.

Cognitions are another difficulty and make for additional uncertainties, of which negotiators may or may not be aware. These uncertainties occur because mental processes often lead to biases, and biases result in a reduction in the overall visibility of the encounter. It is because of these biases that, over the last decades, the "cognitive school" of negotiation (e.g., Jönsson, 1991; Neale and Bazerman, 1991; Bazerman and Neale, 1992, among many others) has attracted such considerable attention. Decision analysts have also dealt with this problem in terms of its impact on the negotiating activity (Raiffa, 1999).

Uncertainties are also created by the complexity of attitudes toward risk. The degree to which a person reacts to risk (from aversion to tolerance to risk taking) can be fairly accurately measured for a given individual (risk attitude scales are incorporated, for instance, into experimental designs). Research does, however, show that: 1) an individual's attitude to an issue can depend on how that issue is framed (see, for example, Kahneman and Tversky, 1979; Tversky and Kahneman, 1981; Kahneman et al., 1982; Bottom, 2001); 2) there is no certainty of stability; and 3) in groups, coalitional processes may interfere with attitudes to risk, and vice versa (Bottom 2001). Hence, negotiations have to confront the uncertainty of how perception, communication, risk assessment, behaviors, and strategies are, or will be, affected by attitudes to risk, all the more so because the impact may vary from phase to phase during the negotiation. Cognitive processes are also involved here, as negotiators may be inclined to base their judgment on precedents or on more recent events.

The variety and virtual instability of negotiating behaviors adds to uncertainties in several important ways. One is the very obvious difficulty of accurately decoding and, still more, predicting an opponent's behaviors, given the additional risk of misperceptions. Another uncertainty is the problem of how far appearances and posturing should be trusted; (for instance, gestures or facial expressions can convey the wrong message or interpretation to a negotiator with limited international experience). Still another issue is the uncertainty created by an opponent's negative attitudes, a phenomenon that has been identified and studied by authors writing about "negotiating with difficult people" (Ury, 1991).

Negotiating behavior is also affected by the fact that many encounters are conducted by negotiators who are actually "negotiating on behalf of others" (see, for example, Mnookin et al., 2000). Uncertainties are increased by the various two- or multi-level games representing the relationships between the actor and his constituencies.

Behavioral problems can, to a large extent, be summed up by the concept of trust, which a negotiator may extend to his opponent and that may be extended to him. Trust as a cause of uncertainty is an issue that is increasingly being researched in terms of its impact on negotiating. Among the major themes studied in the literature are the forms and conditions of trust, trust building, reciprocity, and stability. According to the studies, trust cannot be taken for granted and trust building is an essential facilitator of an agreement. In other words, the expectations of negotiators regarding the role of trust in the negotiation expose them to risk.

Consequences for the Negotiator of Exposure to Risk

Ultimately, the extent to which the negotiator has been exposed to risk will find concrete expression in the outcome of the negotiation. In that sense, the more the outcome differs from the negotiators' expectations, the more risky the negotiation can be said to have been. This type of situation occurs if negotiators believe that the outcome has failed to meet their minimum objectives or, worse still, if the final outcome falls short of their best alternatives to a negotiated agreement (BATNAs). Actors would not negotiate if, at the beginning of the process (the pre-negotiation phase), they thought that the outcome would be lower than their respective security points (which would then lead to each actor either winning or losing in a post-negotiation situation). They may, however, feel that this development can be avoided by proper handling of the process; thus, they are willing to "take a chance," which is clearly an indication that they recognize the existence of uncertainties and at the same time the possibility that unwelcome consequences can be avoided.

The risk that the negotiation will be assessed as a success or failure is what really matters to the negotiator. This "global risk" encompasses all other risks, whatever their source. Risk at this higher level is therefore closely linked to the problem of expectations and objectives. The uncertainties inherent in risk—for instance, the fact that issues are ambiguous, the context is unstable, the stakes are difficult to

assess, power is difficult to decrypt and appears to be volatile, or actors' attitude and behaviors are perplexing—are important because they impact the process and the outcome of a negotiation and they may produce an end result that falls short of expectations.

Risk Assessment by Negotiators

As outlined in the previous section, negotiators' perceptions of risks (in the general case) can be very diverse: risks may be ignored, partly or vaguely perceived, or clearly recognized as potentially troublesome. The reason for this variety of perceptions is a combination of the causes of risk (situation, self, and expected interactions with others) and the specific sources of risks (as just described). The range of the possible states of risk perception by negotiators has a direct bearing on the way they assess the phenomenon.

The risk literature provides a number of cues as to how a negotiator might handle risk assessment. Some models, for instance, for risk assessment based on the rational choice theory, may be seen as mainly theoretical and normative. As applied to negotiation, this theory proposes: 1) models (absolute rationality, bounded rationality, etc.) of procedures (a sequence of logical steps from identification of alternatives through optimization to selection); 2) measurement formulas (using concepts of probabilities based on frequencies of occurrence); and 3) preferences in conditions of uncertainty, for example, subjective expected utilities. In its simplest form this approach can be called a technical analysis of risks, with negotiators acting rationally and expecting opponents to do the same. Game theory and decision analysis theory provide illustrations of how this could work in the planning and conduct of negotiations. Cases in which this approach has been applied have provided interesting, intelligent, and instructive guides to negotiations in which risk is embedded and assessed in the decision procedure.

One of the best illustrations of this is in Hammond et al. (1998). If the sequential steps taken by the decision maker are developed, decision analysis can: 1) determine the alternative solutions that would be available if one assumes the certainty of events; and 2) rank them according to a given value (generally defined as "utility" or "preferences"). Risk is then introduced as a supplementary procedure, and that may modify the ranking of solutions. This procedure consists of appraising two different dimensions: 1) identifying uncertainties within the risk context as the consequences of outcomes multiplied by the probability of occurrence of the said outcomes, leading to a "certainty equivalence"; 2) attitudes toward risk and possible linkages among immediate, timely decisions and future decisions.

Raiffa's reference to several cases of negotiation demonstrates that, in practical negotiation analysis, this procedure can be conducted in quantitative terms (e.g., through recourse to formulas such as "even swaps" that permit qualitative elements to be translated into numerical terms) (Raiffa, 1999).

The point here, however, is whether professionals follow such semi-sophisticated procedures in their daily practices. This may, exceptionally, be the case for complex negotiations (especially when specialized consultants and software are needed). But most negotiators assess risk differently (e.g., in more of a behavioral than quantitative way). The most likely approach would seem to be (and this conforms to the first part of decision analysis) to start looking at events as if there were no or few uncertainties and then adjust this no-risk evaluation by, intuitively, lowering the likely benefits and increasing the likely costs so as to prepare expectations for less-than-optimal consequences. This often-subjective analysis (sometimes enlarged to simple quantitative expressions) is likely to identify the various specific risks separately, as mentioned in "Theoretical Considerations," (above) and then to encompass these in a global subjective judgment on their likely impact on outcomes.

Decision analysis does, however, have the great merit of clarifying the mental and practical processes of the impact of risk on decisions, notably, in separating the sources of uncertainties (i.e., distinguishing between the consequences of events and how frequently they occur), the additional impact of attitudes to risk, and the linkages between present and future decisions.

While, in some cases, a rational negotiator's paradigm can represent the observed "reality" (the realm of descriptive analysis) and computer-aided negotiations (CANs) can facilitate the procedure in the future, one cannot presume that most negotiators are going to approach the problem of risk in a negotiation in such an outcome-maximizing and risk-minimizing way. As mentioned in the Introduction, the RAP (and thus the RNP) faces a number of constraints, if not full-frontal criticisms. Negotiators, like decision makers in general, probably have in the back of their mind that they will have to face risks but realize just how complex any procedure that enables risks to be assessed correctly will be. Some of the major constraints are as follows:

- The time and costs incurred in evaluating the basic components of risk exposure: 1) the probabilities (although, frequently, the evaluation of these has to be subjective because of a lack of information or the expense of collecting, interpreting, and organizing it), the negotiators' preferences, their own sets and orderings, the abstract character of lotteries, and still more, others' preferences, all of which comprise the associated consequence of "ambivalence" in expectations; and 2) the measurement of the consequences of outcomes in the short and longer terms;[4]
- Conceptual limitations: stability of preferences; impact of emotions, judgment biases, social pressures, contextual variables, etc.;
- The fact that: 1) any given action can influence whether a given outcome may or may not occur; 2) hazards with undesirable consequences may fail to be captured by a rational model; 3) each negotiation has every chance of not being similar to any other; and 4) side events or side-effects cannot be excluded;
- The observed fact that even if negotiators intend to act rationally they may unconsciously or explicitly be prevented from doing so;

[4] A quantitative illustration is given in Jaeger et al. (2001, pp. 263–264), for a situation akin to a real-life negotiation.

- The delusion of being able to separate means from ends;
- The importance of cultural factors and the difficulty involved in "measuring" and interpreting them.

These constraints may limit rational, mainly quantitative, risk assessment to a small but, in the future, probably increasing number of situations in which risk can be either circumvented or reduced to more manageable proportions. It would seem, however, that the methodologies used by most negotiators in most situations are based more on heuristics and rule of thumb; they rely on intuition and are not rationalized analytically but in a general almost impressionistic way. As quoted by Jaeger et al. (2001, p. 225), "Managers [negotiators] often operate under conditions of great uncertainty. They make decisions that are not well grounded in any rational analysis of well-defined alternatives, but rather as an intuitive use of unreliable knowledge ... like chessmasters that plan only the next moves," their concern is to "leave (their) ability to act flexibly intact." Thus, grounds for observing that "because there are costs to acting rationally, it is rational not to do so" (Jaeger et al., 2001, p. 155) may exist.

In sum, the rational assessment of risks (under certain conditions) is a prescriptive rather than descriptive methodology for negotiators because of structural constraints and behavioral characteristics (given that "human beings are not good calculating machines but skilled taxonomists" Jaeger et al., 2001, p. 84). Negotiators seem to assess risks mostly in an intuitive, gradually learned way based on various experiences (good or bad) that occur in the course of their negotiating life. One could see their key precept as being prepared to face "reasonable risk," that is, a situation that they consider to be tolerable in a broadly based rather than specifically calculated way. This becomes quite clear when one investigates the strategies of negotiators observed from the viewpoint of risks.[5]

Management and Strategies of Risks by Negotiators

Negotiators need to know how to cope with uncertainty and therefore with the risks inherent in all negotiations; in other words, they need to acknowledge the possibility that there may be a "bad" outcome. Awareness of planning and implementation strategies is therefore considered highly relevant for negotiators. However, as seen in the previous sections, strategies are not applied uniformly in negotiations. Negotiators either ignore risk or consider it to be a routine practice that does not need to be specifically planned for. However, when risks are perceived and assessed in a certain way, knowing how to anticipate hazardous consequences, and even react in advance to them, becomes a valuable asset for the negotiator. In fact, a variety of different risk strategies in terms of both their contents and intensity is needed, rather than a single standard strategy.

[5] In other terms it is difficult to describe them as RREEMM decision-makers (resourceful, restricted, evaluating, expecting, maximizing men) (Jaeger et al., 2001, p. 257).

The strategy chosen will depend on a number of factors:

1. The situation itself—notably its degree of complexity and the impact it has on the actors' stakes, in other words, the degree of difficulty involved in evaluating the probability of risks and, in particular, the magnitude of the consequences.[6] Key aspects of this issue are the motivation of the actors and their ability to: 1) collect and interpret information; and 2) anticipate future developments. These routines and procedures may take time and incur costs.[7]
2. Personal attitudes toward risks—the more sensitive a negotiator is to risk, the more likely he is to accept additional costs in terms of time and expenditure, and the more specific and detailed the planning is likely to be. The past experience and group culture of negotiators will play a key role in this respect, especially with regard to the question of mutual trust.
3. How negotiators view interactions with opponents or participants in the encounter to come. A particular aspect of this question is whether unveiling the risks patterns of each participant regarding issues, process, and outcomes should be viewed as appropriate or opportune and should be communicated jointly. Understandably, these factors are likely to vary widely for negotiators, as there are often more asymmetries than not in many negotiations.

These differences do not prevent the available strategies being regrouped into a few main classes, for instance: avoidance, defensive, and opportunistic.[8] Avoidance as a strategy for negotiators implies one or the other of two choices: 1) defining the agenda so as to preclude or delete elements that carry a risk beyond an acceptable and predefined level, a question close to that of "non-negotiability"; or 2) leaving the agenda open while avoiding (or strictly limiting) commitments, before and during the negotiations, on issues or procedures that could result in risks that the negotiator does not wish to assume. Avoidance strategies are an extreme case because they are intuitively contradictory to the very concept of negotiation. Hence, a second type of strategy—more compatible with the concept of negotiation, yet responding to the need of protection that the negotiator may feel essential—emphasizes defensive or precautionary actions and behaviors.

The contents of these strategies have been presented by, among others, Hammond et al. (1998, p. 157 *f*). Several options are possible (see also footnote 12):

- Risk sharing. For instance, in commercial contracts, conditional clauses (contingency or limiting provisions such as the "hold harmless clause"); or risk trade-offs;

[6] Evaluation of consequences is likely to be more important than setting probabilities. In practice, negotiators will probably be more concerned by an evaluation of the "worst scenario" rather than frequencies.

[7] There are theoretical tools to clarify this point, for example, risk curves linking "gains" and "frequencies" or recourse to the concept of "criticality."

[8] Somewhat similar categorizations are found in the literature, for example, Dan Borge (Borge, 2001) who advocates six possible strategies in risk-exposed situations: prevention, creation, diversification, hedging, leveraging, and insuring.

- Compensation for any damage resulting from the agreement;
- Coverage (a basic principle of the insurance industry which can be adapted to negotiation such as, for instance, provision of penalties or the transfer of risks to a third party);
- Judiciary protection (e.g., recourse to contractual guarantees).

Prudential strategies involve the need to be well informed on the situation and on the visibility of actors (for instance reputation, styles, etc.). The list of prudential strategies in negotiation can be extended to mediation and arbitrage as means of reducing or mitigating the risks that would result from judiciary procedures.

Defensive strategies tend to privilege certain negotiation techniques or tactics. One is the preference for a step-by-step style of negotiating; another is systematic fragmentation. Attitudes are also important in such strategies, for example, preventing escalation, maintaining self-control, particularly when opponents make attempts to destabilize, and distrust of diversionary maneuvers. Defensive strategies also impose the adoption of appropriate communication: a need for explicitness and clarity, frequent use of reformulations. The risk-defensive negotiator must also show an ability to be creative and a capacity to convince an opponent to substitute lower risk options for higher non-acceptable ones; hence, the appropriateness of planning for several alternatives.

These precepts are essentially applicable to dyadic encounters. When the negotiation is plurilateral or multilateral an additional aspect has to be considered. Coalitions and alliances are elements of such negotiations, and they may be used as a protection for a group, for instance, to ensure that decisions do not entail unacceptable risks. This means that risk assessment and tolerance levels should be discussed and agreed by members acting in a coalition and that the issue be included in the common platform.

A third type of strategies can be called "opportunistic" or "dynamic" in the sense that, unlike defensive strategies, they are based on a high level of risk acceptance. Such strategies regard risk as an opportunity because its counterpart is the possibility of higher rewards: potential gains are visualized and evaluated as more than compensating for possible losses. These strategies are linked to optimistic views of the future. They also place great weight on innovations and tend to discount the view that the past is an indicator of how the future will be. They also tend to privilege flexibility.

As with defensive strategies, they tend to favor certain ways of negotiating: enlarging the number and scope of issues; exploring a large number of options; looking at problems in wider contexts; linking present issues to future developments; arguing flexibly; avoiding a too detailed or too explicit discussion/drafting of decisions; systematically adopting a "why not" or a "what if" communication style, etc.

Rather than these three generic strategies, negotiators often choose a mixed solution: the "calculated risk" option. This is a combination—subject to different variants—of defensive and opportunistic strategies. The "calculation" may be qualitative and crude. In complex, high-stakes negotiation procedures are more refined and sophisticated and may range from rational choice formulas to more subjective or broader concepts.

In matters of strategy the point should also be made that professional actors (managers, negotiators) will rely a great deal on intuition and feeling, drawing from experience and trying to combine art and science (Borge, 2001, pp. 95–96).

Conclusion

To what extent does the study of the "general case" provide clues to the specific case of "negotiated risks"?

With regard to risk exposure, striking differences clearly abound. In situations in which risk itself is negotiated, risk exposure is part and parcel of the negotiation itself; it is the "what, why, and how" of the encounter. This is not the case with "ordinary" negotiations where the issues themselves are not risks but problems (conflicts, projects, interpretations) that negotiators intend to solve and where it is the structure and process of the negotiations that entail risk taking or risk avoidance. Thus, here, the "what, why, and how" of the negotiation is not risk but problems; risk is a complicating factor, it is not the substance of the negotiation.[9]

Negotiating behavior reflects these characteristics. As there are general (and, indeed, professional) rules and limitations, behaviors are less uncertain than in the more unusual case of negotiators actually searching (first individually, then collectively) to identify the rationale behind the negotiation and the rules to be applied in this search. Whereas in "ordinary negotiations" some predictability is possible because there are precedents, references, constraints, and some degree of cultural convergence (at least as regards professional conduct), in "negotiated risks" these factors are present less, or not at all, making behaviors prone to be less stable and thus adding to uncertainties. Another reason for increased uncertainties is the impact of external factors, for example, political or value-based issues, that may make each negotiator more autonomous, hence reducing the "conviviality" zone which is to attitudes what the bargaining zone is to positions and interests.

Thus there are substantial differences between the two situations:

- Differences in the degree of predictability (high or moderate in one case; low or nil in the other);
- Differences in the magnitude of consequences (seldom irreversible in one case; with a high level of irreversibility in the other);

[9] One example may illustrate the point. A commercial negotiation, even if complex, is centered on certain issues, for example, product or service specification, price, delivery, guarantees, etc. Each of the specifications on the agenda entails uncertainties (including the fact that some items are not yet on the agenda); however, negotiators have a commonly shared understanding of what, why (and perhaps how) these issues should, and will, be negotiated. Even leaving a margin for uncertainty, there is common (perhaps implicit) agreement about the content of the issues being negotiated. As shown elsewhere, although uncertainties may be present (specific as well as outcome-linked), they have no bearing on what, for negotiators, constitutes the substance of the negotiation. This does not mean that the substance will not be altered by the process, as it will lead to reconfigurations as shown by both theory and practice. This surely creates an uncertainty, but negotiators take it as a necessary rule of the game within known and circumscribed limits.

- Differences in the potential for actors to agree on a common definition of the problem (generally manageable in one case; extremely difficult in the other);
- Differences in the degree of information availability and exchange (variable but rarely non-existent in one case; confronted with specific obstacles in the other);
- Differences in the degree of impact of political and value judgments (possible in the first case, but at least easy to identify and often explicit; quite usual and often implicit in the other);
- Differences in the degree of "objectivity" of interests and issues (often accepted as a rule in one case; often necessarily more subjective in the other); and last, but far from least
- Differences in the degree of expectations (stated or, even if hidden, a visible need to make satisfactory gains in one case; a more fuzzy visibility in the other).

It is therefore not surprising that these differences might influence behaviors and strategies. One way of analyzing them is to concentrate on the threefold aspect of perception, communication, and assessment (as proposed in this book). It is likely that uncertainties relative to issues, stakes, contexts, power, and actors' personalities, attitudes, and styles and, finally, outcomes will be perceived differently by the negotiators in every negotiation. All negotiators have a particular life experiences of their own, specific personality characteristics, a repertoire of adapted behaviors, etc. Anxiety is linked to uncertainty, and as psychology studies have shown, anxiety is a function of self-esteem; judgment biases also influence perceptions of uncertainties. The attitude toward risk may finally be influenced by external factors (such as the framing of the situation), and this may lead to further differentiation of perceptions.

While these facts will play in any negotiation (although at a different intensity), negotiated risks add complicated elements. It is likely that the gap between interests as perceived by the parties will be larger than is the case in most negotiations taking place today, which generally focus on more specific, timely, and immediate issues. Perhaps more important is that the actors' interests are colored by different or even separate judgment and value systems. This may also mean that actors will have different views on access to and exchange of information. Frequently, in negotiated risks the relative weight given to the probability of occurrence and the magnitude of consequences may not be the same for all negotiators, which is another reason for the gap.

It is the complexity, the difficulty of overcoming the fuzziness of the problems, and the perception gap that make negotiated risks a less easy way of generating effective communication channels both before and during the negotiation. Uncertainty (thus anxiety), in addition to the possibility of differing perceptions, could induce, at best, more cautious attitudes and, at worst, reliance on misinformation. There may, in addition, be real semantic discrepancies when highly technical problems are being negotiated, and negotiators' dependence on experts may create communication difficulties at several levels.

Assessing the occurrence and magnitude of consequences is obviously more difficult, almost by definition, in negotiated risks; a solid foundation (statistical or otherwise) is generally lacking (no data from the past or scattered data), and consequences may often be described or calculated only in very hypothetical terms.

This is different from most negotiations where parties are generally aware or able to have a fairly accurate idea of both degree of predictability and magnitude of consequences, as postulated by decision analysis. Even if those are only "educated guesses," they tend to reduce the scope of uncertainty for negotiators who can adjust their positions and strategies in a qualitative and sometimes quantitative way (Raiffa, 1999).

To conclude, the differences between the two "cases" (general/specific) are therefore significant. They can be summarized as follows :

1. *Perception:* The general case shows the wide differences (due to situational, individual, and interactive factors) revealed in the course of negotiations; the "negotiated risks" case emphasizes that the risks linked to those uncertainties involve a still higher degree of difference in perceptions. In the general case, actors may be assumed to be relatively aware of the types of risks involved; they frequently share the same negotiating culture and thus a common, or sufficiently common, view of the negotiation activity, its "givens," codes, and objectives. This is much more ambiguous and complex in the negotiated risks case. A major difference is that in the general case actors know what should, and will, be negotiated (even if interpretation and agenda problems occasionally makes this somewhat hazy or not exempt from future surprises) —this is different when it is risk itself that is to be negotiated.
2. *Assessment* is not always undertaken with care by negotiators. When they need to, however, negotiators may rely on certain procedures and quite well established and useful methodologies. In the special case, assessment is a much more difficult problem (Jaeger et al., 2001). To take just one illustration: assessing norms and values is a key issue in this case. In the general case this question may also be raised (e.g., reciprocity, fairness, etc.) but it just does not have the same implications as in negotiated risk situations.
3. *Strategies:* True strategies can be compared only in general terms—in the negotiated risk situation, there are also strategies of avoidance, mitigation, or opportunism. The main distinguishing aspect of the specific situation of negotiated risks, however, is that the impact of the strategies is intended to be viewed within their own worldviews and longer-term dimensions, and this is rarely the case when the broader set of negotiations is being considered. Hence, more refined definitions of strategies may be called for in negotiated risk situations, and this is exactly why this book will make such an important contribution to the negotiation field.

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Risky Business: Curable and Incurable Risks in the International Mediation of Violent Conflict

Fen Osler Hampson

Introductory Remarks

Analyzing mediation raises some basic questions about what third parties can do in an intense conflict situation, under what circumstances, and to what effect. Within the international mediation literature, much attention is devoted to discussions of appropriate bargaining strategies and entry points, as well as about comparative advantage, coordination, and leadership of different kinds of mediators. As we will argue in this chapter, although the international mediation literature pays some attention to the concept of risk and the notion of the mediator as a kind of risk manager, the risk management aspects of international mediation, especially in the context of the design and implementation of negotiated settlements, do not receive the full level of attention they deserve. In fact, we will argue in this chapter that in situations of intense (i.e., violent) conflict, international mediators have a critical risk management role to play in the negotiation process both before and after a settlement is concluded. This chapter discusses some of those key risks, the impact of those risks on the negotiation process, and how mediators can manage (or ideally control) these risks in a peace process.

The Concept of Risk

In the normal, everyday use of the term, risk is usually associated with danger or hazards involving loss. The *Concise Oxford Dictionary* describes risk as a "hazard, chance of bad consequences, loss, etc." Most classical discussions of risk in the economics literature, however, have a more precise understanding of the concept: Risks are, in effect, measurable (i.e., the outcomes and the distribution of the probabilities

Fen Osler Hampson
Carleton University, Ottawa, Canada, e-mail: fhampson@connect.carleton.ca

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associated with those outcomes are known and can be calculated) (Crouhy et al., 2000, p. 22, p. 34; Marshall, 2000, pp. 45–98). Risk is not the same as "uncertainty," which denotes a clear lack of knowledge and information about both the probability and distribution of outcomes. In many social and political contexts, however, probabilities and outcomes are not always measurable or quantifiable with any degree of statistical precision. Thus, the term risk is often used to denote *negative* consequences associated with social and political actions or behaviors where there is a fairly high degree of uncertainty associated with those consequences. Vertzberger, for example, suggests that the term risk should be "reserved for situations where not only the probability of outcomes are uncertain but the situation itself is ambiguous, that is, it poses a plausible possibility that at least some outcomes are unknown and will have *adverse* consequences for the decision-makers" (Vertzberger, 1998, p. 20). Vertzberger's definition of risk is useful for discussing those situations where risks are not necessarily measurable. It is this more general conception of risk that informs this chapter.

Discussions of Risk in the Mediation Literature

The alternative dispute resolution (ADR) literature tends to focus on the advantages of mediation as a risk management tool versus other kinds of conflict resolution techniques (arbitration, legal court proceedings, etc.) (Moore, 1996; Patterson and Seabolt, 2001). Mediation is typically viewed as "a voluntary process in which an impartial mediator is appointed to help the parties negotiate a settlement" and a low or no risk process because "if a settlement is not reached, each party may still take its claim to court or to arbitration" (BCCAC, 1998). As such, mediation is viewed as a risk and cost control tool (Lurie, 2002).

Insofar as the goal of mediation is resolution of the conflict or dispute, some argue that the "role of the mediator will include actions and communications intended to enhance the disputants' perception of the risk associated with not reaching a resolution as a result of mediation" (Hofheinz, 1999). This view of the mediator as a manipulator of risk is premised on the assumption that the mediator's "orientation toward immediate resolution" means that he/she will have to manage "the flow and contents of communication between the disputants" in order to reach a negotiated settlement (Hofheinz, 1999). As Schelling notes, "A mediator, whether imposed on the game by its original rules or adopted by the players to facilitate an efficient outcome, is probably best viewed as an element in the communication arrangement or as a third player with a payoff structure of his own who is given an influential role through his control over communication" (Schelling, 1960, pp. 143–144). But because individuals are generally risk-averse when looking to potential gains—and more inclined to be risk takers when confronted with the prospect of loss—the mediation challenge is also to get them to focus on actual (or potential) gains, as opposed to losses, that will come from an agreement (Kahneman and Tversky, 1979; Neale and Bazerman, 1985; Tversky and Kahneman, 1992).

Much of the international relations literature on mediation is surprisingly moot on the matter of mediation as a risk and cost control tool technique vis-à-vis other conflict management intervention techniques and methods. With some notable exceptions that are discussed below, scant attention is paid to the methods and ways international mediators can manage or manipulate the parties' respective perceptions of risk in order to reach a negotiated settlement.

One important strand of the international mediation literature focuses on the role of mediators as managers of processes of communication and exchange between adversaries (Bercovitch, 1996; Bercovitch and Rubin, 1992; Fisher, 1997; Kelman, 1996, 1997; Kriesberg, 1992; Saunders, 1996). Through their interventions, mediators can change the perceptions and attitudes of hostile or warring parties towards each other. Communication-based approaches to mediation stress the contribution of third parties in being able to provide a "neutral" forum in which parties can explore options and develop solutions, often outside the highly charged arena of a formal negotiating structure. Mediators can change perceptions by also appealing to the superordinate goals and values of the parties, playing on their aspirations for legitimacy and their desire to be part of the broader political community. The establishment of dialog, of patterns of exchange and contact between and among official parties or other influential representatives, helps set the stage for a negotiated resolution to conflict. A key to this process is often the involvement in the dialog not just of principal political authorities but of a wider group of civil and opinion leaders whose support is essential for the long-term sustainability of the peace process. In a useful survey of different communication and facilitation roles, Bercovitch (1984) offers a long list of different kinds of "process" and "instrumentally-focused" interventions that can help promote dialog and discussion. Other than suggest that mediation can "encourage and assure parties" or "offer interpretation and information to cope with complex issues," like many others, Bercovitch does not discuss the role of risk management in mediation per se (p. 139).

There is, of course, a theoretical basis in game theory for viewing third-party facilitation and communication roles as a kind of risk management tool. In prisoners' dilemma (PD) games where defection is the dominant strategy, the introduction of a mediator can help foster a cooperative solution by exchanging messages between the parties and facilitating the transmission of information—what is sometimes referred to as "cheap talk." Thus, by increasing the amount of information that can be induced in equilibrium, mediation helps the parties overcome their conflicts of interest and avoid Pareto-inferior outcomes. Even so, the presence of a mediator does not completely eliminate the risk of not achieving a Pareto-superior solution; he/she simply reduces that risk through exchanges of information, which reduce the incentives for players to change their behavior at the efficient equilibrium. In iterated PD games, the need for mediators to foster cooperation is reduced because cooperation can emerge independently if, for example, the parties resort to TIT FOR TAT bargaining strategies (Murnighan and Roth, 1983; Axelrod, 1984; Dawkins, 1989). There is also a theoretical basis for believing that mediators are only helpful for facilitating information exchanges in situations were conflicts of interest are moderate but not excessive (Mitusch and Strausz, 2000).

A small number of studies of mediation in situations of intense conflict have focused on the defection risk reduction (DRR) aspects of mediator risk management. These approaches generally accept the PD view that strategic behavior in ethnic or civil conflict situations is motivated by long-standing inter-group differences that reinforce security dilemmas such that the parties view the costs of cooperation as outweighing the costs of defection. In these kinds of conflicts, defection is the dominant bargaining strategy unless a mediator can be persuaded to intervene. As Rothchild argues, "when adversaries confront each other directly and no mediator stands between them, a shift in strategic interactions can prove difficult if not impossible . . . However, the structure for interethnic bargaining changes significantly when a third-party mediator intercedes and attempts to influence the adversaries to alter their perceptions on the benefits of reaching an agreement" (Rothchild, 1997, p. 1). Among the various DRR strategies identified by Rothchild and others (see Dixon, 1996; Rothchild and Lake, 1998; Snyder and Walter, 1999) are communication, confidence building, and spoiler management, all of which are designed to change the cost-benefit calculus of the parties and increase the incentives for a negotiated agreement.

In contrast to those who stress the importance of mediation as a communications control technique, some scholars argue that mediators can—to use Schelling's turn of phrase—"invent contextual material" of their own and make "potent suggestions" that influence players' perceptions (Schelling, 1960, p. 144). Further, in situations of acute conflict, player preferences and strategic behaviors can and do change depending on the level of violence and their threshold for pain, and they may therefore be more receptive to mediated interventions as noted by Zartman (1989) and others (Haass, 1990; Touval, 1996). The negotiation challenge in these situations is to calibrate third-party interventions to "ripe moments" (i.e., when neither side in a conflict feels it can win and the costs of continuing with war are deemed to be more burdensome than the costs of settlement). As Zartman explains, a hurting stalemate in game theoretic terms "marks the transformation of the situation in the parties' perception from a prisoners' dilemma (PDG) into a chicken dilemma game (CDG), or, in other terms, the realization that the status quo or no negotiation is a negative-sum situation" (Zartman, 2001, p. 9).

In the ripeness model, the mediator's function is to some extent redefined because DRR is less important to the parties because the risks (objectively speaking) of defection from a cooperative solution have been reduced (they are by definition no longer in a strict PD situation). In so-called "games of chicken," at least one of the parties to the dispute has a greater incentive to look for a cooperative solution because the costs of non-cooperation are deemed to be much worse. In the theory of ripeness, the mediator's role shifts from communicator and trust builder to one of formulator and manipulator—a shift that reflects, in part, the changing assessment of the parties *themselves* to the risks of cooperation versus non-cooperation. As Brams further notes, in certain bargaining situations mediators may be required to induce honesty among the players by providing bonuses if they reach an agreement or imposing penalties if they do not: "Without rewards from the outside or a

built-in risk of failure, however, there is no procedure that can eliminate posturing and exaggeration" (Brams, 1990, p. 263).

Multiple Risks

In the discussion that follows, we argue that there are, in effect, *multiple* risks that mediators confront in intervening in intense conflict situations that go well beyond those risks that are identified above. First, the risks of defection are not confined to problems of communication and getting adversaries to bargain in good faith as implied by communication-centered approaches to mediation. Importantly, they include the risks of settlement and the way the parties perceive or anticipate the distribution of costs *and* risks after a negotiated settlement is reached. These risks are described in this chapter as covenant (i.e., settlement) risks, some of which are completely "curable" through third-party interventions (or actions taken by the parties themselves), and some of which are not. We argue that these risks typically weigh heavily on the parties' respective assessments about the desirability of reaching an accord during the actual course of negotiations. Although we accept the proposition that mediated interventions are influenced by (and, in turn, seek to influence) the strategic preferences of the parties to a conflict, we argue that it is not just negotiation and settlement costs, or the risk of staying with the status quo, that matter to the parties, as Zartman and others have noted (Pillar, 1983; Haass, 1990; Touval, 1996; Zartman, 1989), but also who bears the burden of risk after a negotiated settlement is reached. To the extent that third parties can manipulate, adjust, or even share risks with the parties to the conflict, they may be able to enhance the prospects of reaching a negotiated settlement.

Our second observation is that any negotiated settlement also involves *legal* and *systemic* risks. These risks—described below—can also undermine a negotiated settlement if there are not proper mechanisms in place to control them. Again, we argue that third parties can mitigate these risks with appropriate negotiating and diagnostic techniques.

Incurable Covenant Risks

Once the parties to an intense conflict have embarked on a course of negotiation and agreed to the terms of a settlement, they will nonetheless have to contend with other risks that threaten a peace process as noted above. *Incurable covenant risks* are the risks associated with the possibility that a negotiating partner will not live up to his/her specific obligations at the time that they fall due (or any time thereafter) and there is no judicial or political remedy for recovering those losses from the defaulting party once the contract, or settlement, has been enacted. They are the risks that are associated with the costs (current plus future) of replacing a "contract" or

settlement if the other side defaults and fails to live up to its negotiated obligations. Incurable covenant risks tend to affect parties' perceptions about the desirability of an accord not only when they enter into negotiations, but also as those negotiations play out into the end game (i.e., it is not just the costs of settlement versus the costs of continued conflict that matter, but also the anticipated future costs of replacing a failed settlement, especially if, *after* one side has fulfilled its own part of the bargain, the other side later defaults).

When contractual obligations have asymmetrical levels of risk exposure (e.g., the land-for-peace formula in Israeli–Palestinian negotiations), the party (in this case Israel) relinquishing a non-returnable asset (land plus sovereignty) may deem the replacement costs to be unacceptably high if the "contract" fails. This is because the exposed party (Israel) worries that once the transfer takes place the other side (Palestinians) will not fulfill its security obligations (which continue) under the terms of the settlement, thereby leaving it exposed and without any viable means for recouping its losses (Rabinovitch, 1999; Kriesberg, 2001). (Such risks are akin to "sovereign risks" where the remedy is limited because the lender cannot seize the assets of the borrower.) Asymmetric risks are also evident in conflicts where national governments have been fearful about negotiating settlements with groups that challenge state sovereignty through violent means as in the case of Northern Ireland and Sri Lanka (Jensen, 1997). Perceptions of asymmetries in risk exposure, especially when territory is an important strategic asset, may be reinforced from the perspective of Prospect Theory and the so-called certainty effect, which states that parties typically tend to undervalue uncertain outcomes (e.g., such as improved relations with an adversary that might result from negotiation) and typically place a higher value on certain outcomes (i.e., those which can be measured and are tangible, such as control of territory) (Kahneman and Tversky, 1995).

Asymmetric levels of risk exposure are not necessarily restricted to issues of territory and sovereignty. Many power-sharing agreements, or agreements that require the parties to demobilize before elections are held, also involve asymmetric levels of risk exposure that have an "incurable covenant" element to them (Sisk, 1996; Hudson, 1997). This is especially true for the party that is required to demobilize (or disarm) its forces (and/or integrate them with government forces) under an agreement where participation in a political process, such as elections, is contingent on demobilization taking place first. The risk lies in the possibility that the other party, which controls the government, will not live up to its political commitment to allow the opposition to participate freely in the political process after it has relinquished its military assets (Hume, 1994). For example, the implementation of the 1992 Mozambican peace accords required both sides to the conflict, the Mozambican government and the main opposition party, Renamo, to adhere to a strict timetable under which both sides would demobilize their troops and adhere to a cease-fire before elections (in which Renamo would participate as a political party) were to be held. Although some government forces were to be demobilized under the accords, the agreement in a real sense shifted the burden of the risk on to Renamo because once it demobilized (even though some of its forces would be integrated into the Mozambican army) it would, in effect, lose its military assets and

its bargaining power over the government if the government subsequently reneged on its commitments to allow Renamo to participate in elections. Renamo's leader, Alfonso Dhlakama, understood his dilemma all too well. As Aldo Ajello, the UN's Special Representative to Mozambique, notes: "At the beginning, it was evident that Dhlakama's objective was to keep his troops in the bush as long as possible in order to preserve his bargaining power with the government. Keeping open both his military and his political options was the ideal solution for Dhlakama, but clearly impossible if the peace process was to proceed" (Ajello, 1999, p. 632). Ajello successfully dealt with the problem by reminding Dhlakama that "the presence of UN troops was his safety net, a kind of 'life insurance' for him in his new role as a political leader" (p. 632). In this particular case, the third party was able to transform a seemingly "incurable" covenant risk by offering an insurance policy that leveled the playing field and reduced risk.

Incurable covenant risks may also have an important "domestic" constituency dimension in certain kinds of bargaining situations. If an agreement or peace process fails, it can have serious domestic repercussions for the parties involved, such as the fall of a coalition government, an irredeemable loss of confidence in the leader who negotiated the agreement, and/or a major escalation in violence if military action is required to restore the security situation and the political or territorial status quo ante. As Putnam (1988) argues, a leader's negotiating behavior is influenced not just by international but also domestic political imperatives and his/her ability to construct, maintain, and/or sustain coalitions among different domestic constituencies. Level I (i.e., international) bargaining frequently involves simultaneous negotiations at Level II (i.e., between and among different domestic interests who can dictate the size of the "win–win" bargaining set at the international level).

However, it is not simply the costs of "agreement versus no agreement" for domestic constituents that influence bargaining strategies and a leader's decision-making calculus. Anticipated risks matter too. This is because elites are not always in the position of being able to check with their constituents at each negotiating turn. More often than not, they have to anticipate domestic reactions to negotiated outcomes when those negotiations are taking place in secret or out of the spotlight.

This point has not been lost on the leaders of successive coalition governments in Israel who have had to worry about the impact of negotiations and any concessions they make at the negotiating table for the stability of party coalitions and their bases of political support in the Knesset. Following Rabin's assassination at the hands of a political extremist and the subsequent defeat of Labor by the nationalist Likud party, U.S.-sponsored negotiations continued. However, as a result of electoral reforms allowing for the direct election of the Israeli Prime Minister, which paradoxically enhanced the power and influence of minority parties in the Knesset, the new Prime Minister, Benjamin Netanyahu, was in a relatively weak position politically vis-à-vis his own parliamentary coalition (Gedal, 1998, p. 345; Netanyahu, 2000). Although no fan of the Oslo process, Netanyahu nonetheless found his own freedom of maneuver to be quite limited at the negotiating table at the Wye Plantation in Maryland in 1998 when Israel agreed to further transfers of land to the Palestinian Authority because of the risks of defection within his own coalition. Such

risks (i.e., the break-up of domestic political coalitions or a loss of confidence in the government) cannot be underwritten by the mediator or outside third parties. (In Netanyahu's case, his concessions at Wye polarized his own coalition. His subsequent decision to halt the implementation of the Wye accords to appease his conservative wing cost him the support of moderates within his own coalition, and ultimately led to the dissolution of the Knesset and new elections, which Netanyahu lost to Labor leader Ehud Barak.)

Confronted with the problem of seemingly "incurable" covenant risks, mediators can do a number of things to try to mitigate or reduce—though obviously not eliminate—these risks. First, mediators can help parties reduce the level of risk exposure in asymmetric situations (i.e., where sovereign risk is high) by structuring the transfer of assets in an agreement in increments, making sure that both parties give something upfront, and by designing mutual "pay-as-you-go" contracts that spread and reduce the upfront costs of default. In effect, this is the approach taken by Henry Kissinger in the negotiation of the Sinai I agreements, which led to the progressive withdrawal of Israeli forces from the Sinai and the gradual assertion of Egyptian sovereignty over the territory.

The immediate challenge that Kissinger confronted in his efforts to mediate a formal disengagement plan was to "reconcile Egypt's demands for sovereignty with Israel's need for security assurances" (Mandell and Tomlin, 1991, p. 48). Under the "pay-as-you-go" formula that was eventually devised, Israel conceded some, but not all, of the Sinai and was allowed to keep some of its forces in key strategic areas. The Egyptians, in turn, agreed to force limitations and provided assurances to the Israelis that "the [Suez] Canal zone would be rehabilitated in lieu of a formal end to the state of belligerency" (p. 49). Although the process was slow and sometimes painful, these incremental first steps redefined and narrowed the critical issues in the negotiation process, eventually paving the way for the Sinai II accords: "Over the course of two years, the parties ultimately agreed to an explicit linkage between withdrawal and non-belligerency; the formula of 'territory for peace' now became a more explicit form of exchange, leading to a more accommodative relationship between the parties as each had sufficient opportunity to test the intentions of the other" (p. 53).

A second way mediators can help reduce incurable covenant risks is to underwrite some of the contract replacement costs if an agreement fails (i.e., by providing "replacement," security guarantees to the aggrieved party (or parties) whose interests have been compromised. This role is generally well understood by the participants in the Camp David negotiations between Israel and Egypt, which paved the way for the complete withdrawal of Israeli forces from the Sinai. As Moshe Dayan, the former Israeli defense minister, noted in his memoirs: "the US [was to] assume responsibility for there being no abrogation of the treaty we would sign for Egypt. We were concerned that Egypt, after our withdrawal from Sinai, might not honor her obligations" (quoted in Princen, 1991, p. 61).

However, an incremental approach to transferring assets does not always mitigate the risks of peacemaking as the difficulties experienced in implementing the Oslo accords suggest. The gradualist approach to the peace process in the Oslo

accords was designed, in part, to reduce asymmetrical risk exposure by ensuring that the recognition of the Palestinian authority took place gradually and that land (and sovereignty) were conceded by Israel in increments that were, in effect, tied to benchmarks for good behavior and an improving security situation (Makovsky, 1996). As Egeland (1999) points out, the first milestone after Oslo was the Cairo Agreement of May 1994, establishing Palestinian self-rule in Gaza and Jericho. This was followed by the agreements concluded in Taba, Egypt, in September 1995, which extended Palestinian self-rule on the West Bank and Palestinian elections in early 1996 coupled with the withdrawal of Israeli security forces from West Bank towns and villages. Subsequent agreements led to further Israeli troop redeployments and commitments by the Palestinians to fight terrorism. However, the Oslo timetable was eventually disrupted by changes in the domestic leadership of Israel, a worsening—as opposed to improving—security situation, and growing distrust and mutual recriminations between the parties as deadlines passed and negotiated commitments were broken. In addition, because the United States (USA) failed to insist on the fulfillment of the accords, each side felt more exposed to risk. Eventually, the deteriorating security situation forced a suspension of negotiations between the Israeli government and the Palestinian Authority in 2002, underscoring the fact that even a gradualist negotiating strategy and incremental peace process could not reduce the risks of reaching a comprehensive settlement to a level that was acceptable to the parties within the Oslo framework. With the collapse of the Camp David negotiations in late 2000, which was followed by an escalation in terrorist attacks and violence, the sense of hopelessness and feeling that Israelis and Palestinians were locked in an unending struggle only grew worse. The Sharm el-Sheikh Fact-Finding Committee or "Mitchell Commission" (Mitchell Commission, 2001) offered a series of recommendations to rebuild confidence and resume negotiations, but ultimately did little to resuscitate the floundering peace process.

The problem of moral hazard poses its own special challenges to third-party interveners. In those cases where moral hazard is high, because the exposure to loss resulting from improper or deceptive actions by a party is considerable, some may shy away from entering into negotiated commitments with that party. One strategy for dealing with this problem is for the mediator to reach out to other third parties who can exert pressure and/or impose direct costs on that party, thus leveraging the situation to reduce moral hazard.

In effect, this was the strategy that the UN Special Representative pursued in negotiations with Jonas Savimbi, the former head of UNITA, the Angolan opposition movement that for many years had been engaged in a struggle to overthrow the MPLA-led government, headed by President Jos Eduardo dos Santos. During the period that followed the mediation of the 1991 Bicesse Accords in Angola, UN Special Representative Margaret Anstee was put in the difficult position of trying, first, to implement an intricate, multi-track settlement plan and, then, when it crumbled and the parties returned to war in the wake of failed elections, to pick up the pieces. When she accepted what she later described as "mission impossible," Anstee soon realized that she had few resources at her disposal and that Angola was not high on the priority list of the UN Security Council. In the eight-month period

from November 1992 to June 1993, she chaired three successive mediation attempts aimed at salvaging the accords. In each, there was some progress, but every time a renewed outbreak of violence (usually at the instigation of UNITA leader Jonas Savimbi) set the process back and destroyed the momentum.

In an effort to acquire some leverage, Anstee reached out to the so-called Troika (USA, Soviet Union-Russia, and Portugal, who were the guarantors of the peace process) in an attempt to get the parties to return to the negotiating table. The effort was temporarily successful and talks resumed. But the bigger problem lay in the UN Security Council, which was unwilling to take decisive action and use real "carrots and sticks" to send a message to the parties, and UNITA in particular, to stop all violence and comply with UNSC resolutions. The potential bilateral leverage of individual Troika governments was not applied coherently. Consequently, any commitments that were made at successive meetings quickly unraveled and efforts to secure a cease-fire fell on "stony ground." Anstee's position was further undermined by the fact that the Security Council would not commit troops to monitor a cease-fire until a cease-fire was in place. As she writes, "[w]orse still, I was warned that, even if I managed to obtain a cease-fire, no UN troops could be provided to monitor it *until six or nine months later*, because of the overall crisis in peacekeeping. That left me, as the principal mediator, with no leverage whatsoever" (Anstee, 1999, p. 603).

Anstee may have found some consolation in the fact that none of her successors from the UN fared any better. Each time a new settlement was reached, it disintegrated into violence and a resumption of the conflict. It became increasingly difficult for the UN to secure the government's involvement in subsequent negotiations with Savimbi. In 1998, following years of effort of both hanging in and hunkering down, the UN was essentially ejected after the peace talks broke down. Even after Savimbi was killed in 2002, it played no real role in the peace process.

Mediators can also try to reduce moral hazard to the other side by making it clear to players who have acquired a reputation for reneging on their negotiating commitment that their reputations are at risk and that other international actors will not do business with them in the future. This appears to have been the strategy of the Bush Administration in the aftermath of the collapse of the cease-fire negotiated by CIA Director George Tenet and the brutal terrorist attacks that were launched against Israel by various Palestinian groups. President George W. Bush and his diplomatic emissaries sent a clear signal to President Arafat that his political authority and credibility were exhausted and that the USA would no longer do business with him. The USA also sent a clear signal that it supported the emergence of a new leadership in the Palestinian Authority. It also conducted an intensive round of diplomacy with Arab leaders in an attempt to ensure key regional players would not give Arafat a better "political" credit rating than the USA felt he deserved.

Curable Covenant Risks

Curable covenant risks are typically associated with a *temporary* failure to meet obligations under a set of negotiated agreements (i.e., a settlement in a transfer system does not take place as expected because one of the parties is in shortfall position and is therefore unable to live up to its negotiated commitments under a previously agreed timetable). There are different kinds of defaults. Under a *negative covenant*, a party agrees not to do certain things over the lifetime of an agreement. In an *affirmative covenant*, the party agrees to fulfill a particular set of specified obligations under the terms of the agreement. A covenant can be tripped by a negative or positive (affirmative) default (i.e., a party does something it agreed not to do or it fails to do something it previously agreed to do). The situation is deemed curable because there is a good possibility that the defaulting party will be able to settle or make good on its negotiated commitments later on and/or take remedial action to correct the default. (Curable covenant risks are somewhat akin to liquidity risks in a financial agreement, that is, the risk that a party will not settle for full value at the due date but might be able to so at some unspecified time thereafter. They reflect the short-term costs of adjustment and differ from contract replacement risks, which represent the current and future costs of replacing a failed agreement.)

In a curable covenant risk situation, a party's failure to meet its positive or negative obligations is not necessarily catastrophic (i.e., it does not threaten the fundamentals of the agreement if the terms can be renegotiated and/or commitments rolled over). But it is obviously important to anticipate these kinds of risks in advance and to ensure that there are appropriate mechanisms or remedies to rectify them.

Netting and *novation* are two kinds of correctives to a curable default.[1] Mediators can perform critical netting and novation functions by restructuring the terms of an agreement so that the parties can meet their contractual obligations. Netting is essentially a bargaining technique for bundling the positions (or obligations) of the parties in such a way that that they offset each other. This helps to reduce a potentially large number of positions to a smaller number so that negotiating partners, once they have settled on a netted position, can settle their outstanding obligations. Netting also helps to reduce transaction and communication costs because it effectively simplifies the bargaining process. Novation is a replacement strategy whereby an existing obligation or commitment is discharged by replacing it with a new set of obligations or commitments (i.e., they are effectively rolled over in a way that does not diminish the original commitment or intent). Netting and novation can help to reduce both replacement and shortfall implementation risks.

Many a peace process that has encountered serious, though reparable, difficulties during implementation has been put back on track by mediator netting and novation. Unfulfilled obligations—that in some cases were unrealistic or improperly

[1] Netting and novation are instruments, which are used in the financial world, to deal with different kinds of credit and liquidity risks (see Crouhy et al., 2000, p. 53, pp. 59–61, pp. 444–445; Marshall, 2000, p. 82; Caouette et al., 1998, pp. 61–62).

timed—have been replaced, as a result of mediated interventions, by new obligations or commitments that were subsequently discharged. A good example of the successful use of netting and novation bargaining strategies by a third party is the implementation of the Salvadoran peace accords. Under the final peace accords, which were signed at Chapultepec Castle in Mexico City on 16 January 1992, the parties committed themselves to a series of security-related obligations and reforms, which had to be completed according to a preset timetable (De Soto, 1999; Cañas and Dada, 1999). Difficulties soon arose when key security obligations were not met. Under a schedule determined by the Ad Hoc Commission on the Purification of the Armed Forces, which were part of the accords, two public security bodies—the Treasury Policy and the National Guard—were supposed to be abolished by the government by 1 March 1992, with their members incorporated into the army. However, the government failed to carry out the disbanding of these two bodies. For several weeks after their incorporation into the army, the former members of these two bodies (some 3,500 personnel in all) remained in their original barracks. The FMLN (Farabundo Mart National Liberation Front) denounced this as a violation of the peace agreement and refused to complete the redeployment of its own forces until the problem was resolved. The FMLN had concentrated its forces at some 50 locations, where they awaited demobilization, with a second stage of concentration scheduled for 2 March, which was not completed because of a lack of infrastructure at agreed locations and the government's own failure to comply with the agreement. New deadlines were established only to be broken. Although the cease-fire between the two sides continued to hold during the spring and summer, by the fall of 1992 it was quite apparent that both parties would not be able to comply with the 31 October date for ending the conflict. The government's failure to comply with the schedule of the Ad Hoc Commission created serious tensions with the FMLN. The government, in turn, had serious reservations about the inventory of weapons submitted by the FMLN—it feared that the FMLN was secretly retaining caches of arms—and about the FMLN's own compliance with the demobilization schedule.

These delays and the reactions of each party to them were clearly leading the peace process into a cul de sac as each party held the other responsible for the delays while insisting on its own interpretation of key clauses in the accords. In order to break the impasse, the UN Secretary-General sent Marrack Goulding and Alvaro de Soto to San Salvador to mediate a solution. De Soto had extensive discussions that were conducted separately with the government and the FMLN. The result was an adjustment of the Chapultepec timetable and an exchange of letters stipulating that compliance with specific undertakings by one side would be contingent upon compliance with specific undertakings by the other side. In this case, an affirmative covenant was rescued during its implementation phase by a combination of netting and novation techniques, which rolled over (as well as offset) a series of outstanding obligations that were not met at the time they fell due.

Netting is also a useful intermediary technique in negotiating the provisions of a peace settlement so that the parties' conflicting objectives offset each other thereby reducing the risks of default. The successful negotiation of the Dayton Peace Accords, which ended the war in Bosnia, in part, was the result of a netting bargaining

strategy, which was introduced by the U.S. mediating team. As Saadia Touval, a close observer of these negotiations, notes, the key elements of the Dayton Accords were not new. The concept of a single Bosnia state was in the Cutileiro Plan of March 1992. It was revived in 1993 and revised to give the Serbs contiguous territory. It was a central element in the Union of Three Republics (Owen–Stoltenberg Plan), its revised version labeled "European Action Plan," discussed in the latter half of 1993, and the 1994 Contact Group Plan. All these plans also proposed that Bosnia be recognized as a single state under international law (Touval, 1996, p. 559). However, "the formula represented by the preliminary agreements … was flawed because it lent itself to contradictory interpretations, binding the parties to unity, and legitimizing their separation. While the Muslims hoped that the constitutional provisions could be turned into an instrument for creating a unified state, the Serbs hoped that it would facilitate the secession of Republika Srpska from Bosnia" (p. 564). By negotiating a series of bilateral agreements between the parties, the USA was able to offset these conflicting tensions and objectives, and firmly knit together the key elements of the tripartite settlement at Dayton. The key element in these bilateral undertakings was the Bosnian Federation accords, which ended the war between Croats and Muslims and provided a temporary solution to part of the conflict until the Dayton peace process could take hold (Serwer, 1999).

Legal and Systemic Risks

There are two other kinds of risk that can also influence the path of a peace process and which mediators sometimes have to contend with: legal and systemic risks.[2] *Legal risks* typically fall within the curable category of risk. However, they are different from covenant risks because the source of the default does not involve willful intent (as in the case of moral hazard), but arises from the unintended (or unanticipated) consequences of deficiencies within the political or legal framework of the agreement itself. A legal risk is the risk that a transaction is unenforceable because there is no sound political or legal framework for ensuring that negotiated obligations are properly fulfilled. Ambiguous or vague terms in a settlement that may be necessary to reach a negotiated compromise can also come back to haunt a negotiated settlement later on.

Suffice to say, most peace agreements in civil or intrastate conflict situations contain provisions with inadequate legal and constitutional mechanisms (and/or procedures for implementing them). This has adversely affected the prospects for peace, although through the provision of mediated interventions these risks have sometimes been successfully managed. The land tenure provisions in the Salvadoran peace accords, which were major sources of disagreement and conflict between the parties, are a case in point. The peace agreements themselves did not sanction an overall land redistribution program (of the sort that many post-revolutionary regimes implement

[2] These risks also have their analogs in the finance literature (see Crouhy et al., 2000, p. 4, p. 37).

after a civil war). Rather, the peace accords specified a land transfer program as "the main venue through which ex-combatants and supporters of the FMLN would be reintegrated into the productive life of the economy" (De Soto and del Castillo, 1994, pp. 11–12). Land tenure questions were especially sensitive issues, given the importance of agriculture to the economy and the fact that arable land was in short supply and unevenly distributed. Ownership of land also made available other potential benefits, like housing credits and assistance for agricultural production. Additionally, because the peace accords themselves only reflected broad principles, the actual details of land transfer had to be worked out during the course of the implementation of the peace accords and with the assistance of a third party, the United Nations Observer Group in El Salvador (ONUSAL).

The peace accords stipulated that, pending agreement on various issues, the land tenure situation would be respected in former conflict zones and current landholding occupants would not be evicted (Hampson, 1996, pp. 86–87). They also assigned the task of verifying implementation of these provisions to a special commission that reported to COPAZ (Comision Nacional para la Consolidacion de la Paz)—a body that was responsible for overseeing implementation of all political agreements reached by the parties. One of the difficulties the special commission faced derived from the peace agreement's failure to define the "conflict zones." February and March 1992 saw tensions rise in the countryside after various peasant groups seized properties, only to be evicted by security forces. These actions were also of concern to FMLN combatants who were waiting to move into designated concentration areas. When conditions failed to improve, the UN representatives met with the parties who agreed to suspend land seizures and evictions in order to facilitate the processing of cases submitted to COPAZ's special commission. The UN also convened a special outside group of experts who worked on the land transfer issue and submitted a set of recommendations, which were eventually accepted by both sides.

Systemic risks are risks that derive from adverse political developments or movements in the wider regional and/or international environment. These are risks to a peace process resulting from untoward (or possibly unforeseeable) actions by regional/international actors (or, in some cases, non-state actors) whose interests are not advanced by a political settlement and/or who may actively seek to undermine or thwart it. Some of the recent literature on "greed and grievance" also draws attention to the political economy of violent conflict and the role that natural resources and international commodity markets (which represent another kind of systemic risk) can have in undermining nascent peace processes (Berdal and Malone, 2001).

Systemic risks are not necessarily curable, but they are sometimes manageable or controllable. Multilateralizing a peace process, by bringing in key affected regional or international actors, is one strategy for managing these risks. Another is to promote issue linkage in such a way that key systemic risks offset each other. Much has been written about the conditions that led to the successful negotiation of the Cambodian peace accords, which culminated in international supervised elections in 1993. But as Richard Solomon, the U.S. negotiator has argued, the success of the accords depended critically on the ability of two great powers, Russia and China, whose geostrategic interests were changing to manage the risks of withdrawing their

forces from Indochina in a way that would not be exploited by the other side as well as other great powers and regional actors (Solomon, 1999, 2000). The irony was that the USA, which had withdrawn from the region after the Vietnam War, was the catalyst for a negotiating framework that allowed the parties to manage these risks. As Solomon explains, "in the early 1990s, the USA was seen by most of the other players as the most 'neutral' and capable member of the Security Council to help structure a settlement. The Soviets/Russians and the Chinese were still sparring over influence in Indochina through their surrogates—the Hun Sen government in Phnom Penh and Pol Pot's Khmer Rouge guerrillas in Cambodia's jungles—although Moscow's influence was declining rapidly as its resources and political outreach contracted. The French, while a prime mover on one stage in the diplomatic maneuvering, were seen as a key player with an agenda—seeking to restore their colonial-era influence in both Vietnam and Cambodia. And the British, although skillful in the world of UN diplomacy, lacked the will and the resources to be major influence in Southeast Asia" (Solomon, 1999, p. 281). In the negotiated (and largely U.S.-mediated) geopolitical entente leading up to the Paris peace accords, the USA helped the parties manage the risks of exit from Indochina. Within the framework of the UN-sponsored peace plan that steered by the five permanent members of the Security Council, the key players were able to reduce their regional rivalries, exit from military commitments that were increasingly costly, and bring about a withdrawal of Vietnamese troops from Cambodia.

Great power mediation, coupled with multilateral approaches that engage critical regional and great powers interests, is one way to control systemic risk. Another strategy is to promote issue linkage so that key risks of the systemic variety offset each other in a way that facilitates a negotiated settlement. Although the USA had been involved in a Western-led peace process on Namibia since the mid-1970s, the efforts of the Contact Group to negotiate an end to the conflict were frustrated by the increasingly polarized situation on the ground. The incoming Reagan administration faced a number of options that included pulling out of the Contact Group and downgrading South African diplomacy (Crocker, 1992, 1999). It was recognized early on that a key piece of the puzzle, the seeking of a negotiated withdrawal of Cuban troops from Angola that would assuage South African security concerns about security threats to the north, was missing from earlier peace efforts. Some realized that until this issue was successfully addressed the situation would not be "ripe for resolution." The articulation of this linkage between the issue of Cuban troop withdrawals from Angola, which affected South Africa's fundamental security concerns, and the negotiated withdrawal of South African troops from Namibia to secure Namibia's independence became the cornerstone of the U.S. policy of constructive engagement. At the same time, these strategic goals were tied to a broader U.S. interest in promoting peaceful democratic change in South Africa that would see the dismantling of apartheid where engagement—as opposed to isolation—of South Africa was seen as key.

International Mediation as a Form of Risk Control

In this chapter, we have argued for a conception of international mediation that explicitly recognizes the importance of strategies of risk control in third party–mediated interventions in situations of intense conflict. In making this argument, we have tried to suggest that it is important to conceive of mediation in both wider and more ambitious terms than simply risk management. Whereas risk management is essentially a hedging or neutralizing process that is directed at alleviating or mitigating a particular set of risks, risk control involves the adoption of a comprehensive strategy to manage *all* of the various risks associated with negotiating and implementing a peace settlement.

Some of the key mitigation elements of a proper risk control strategy, which are relevant to mediation, include the need for adequate rules, appropriate third-party security guarantees that underwrite risk, information and transparency, and the use of netting and novation bargaining and "bundling" strategies. (Table 1 summarizes mediation response strategies that are part of comprehensive risk control strategy.) An effective peace process must ensure that parties have confidence in each other's stability and ability to negotiate and implement agreements. Agreed-upon rules can foster the requisite levels of confidence in a peace process, especially if those rules specify clear standards of behavior and commitment, while allowing for adjustments to changing levels of risk in the broader, political environment. The provision of adequate rules, along with third-party security guarantees and commitments, can also help to mitigate some of the potential legal risks in a settlement process.

No single authority generally has all of the relevant information it requires to carry out its responsibilities or negotiated obligations. A peace process can be derailed if the decision-making environment is confused and political authorities lack information about what is or is not occurring in their local (or even wider) environment. Mediators can promote exchanges of information that accommodate key differences between the parties and allow them to adapt to their changing environment, thus allowing the parties to better understand (as well as anticipate) their shortfall risks. Mediators can also help to devise new rules of road and agreed upon norms (or standards) of acceptable behavior in those situations where legal regimes are weak and legal risks are potentially high.

Curable covenant risks can be reduced by establishing clear ground rules, appropriate standards of behavior, and regularized exchanges of information. However, mediators must also be prepared to resort to innovative netting and novation techniques when things can (and do) go wrong, and the parties to the conflict are experiencing difficulties in living up to their negotiated commitments (e.g., UN's role in El Salvador). Netting also applies to other third parties as well. Systemic risks are sometimes best addressed in a mediation context by a strategy of inclusion that brings together (i.e., nets) the interests of regional and even systemic actors into the framework of a peace process and subsequent negotiated accord as in the P-5 role in the negotiation of Cambodia peace accords, and the U.S. strategy of linkage and constructive engagement in Southern Africa. As we have argued in this chapter, successful international mediation in situations of violent conflict requires a risk

Table 1. Mediation Risk Control Strategies

	Intentional Default	Unintentional Default
Incurable covenant risks	Provide/strengthen sanctions/penalties to reduce moral hazard	Structure agreements to reduce levels of risk exposure (including exposure to systemic and legal risks)
	Help underwrite losses to the aggrieved party	Promote information exchanges between parties that foster greater levels of transparency
	Ensure that international community sends clear signals that reneging on negotiated commitments does not pay	Help parties redo the agreement to reflect new realities about what they can realistically deliver
Curable covenant risks	Netting and novation	Netting and novation
	Ensure that there are clear penalties for rule violation	Clarify rules
		Provide adequate documentation
	Help provide better means of rule enforcement	Mediate solutions when rules are ambiguous

control strategy that is attuned to the challenges of managing these different kinds of risk throughout all stages and phases of the negotiation process, including the period when a negotiated settlement is implemented.

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Take the Risk and Trust? The Strategic Role of Trust in Negotiations

Sabine Theresia Koeszegi

Introduction

The overall objective of the project "negotiating risk and uncertainty" is to analyze the determinants and consequences of negotiations when the issues at stake are framed as risks. In this type of negotiation the actors' efforts focus on handling such diverse threats as climate change, arms race, armed conflicts, or joint-venture negotiations, to name but a few. The main question to be answered here is whether a risk frame influences negotiation processes and outcomes—and, if so, how.

Generally, most definitions of the term negotiation or "bargaining" include the notion of interdependence or conflict of interests or values between negotiating parties (Kahn, 2002). This definition indicates that negotiations are themselves a risky business. The negotiating parties are confronted with the risk that the opponents may not be honest, that they may not honor the negotiated agreement, or that they may use unfair strategies and tactics to increase their own share of the disputed values. These risks are directly related to the motivation and behavior of the parties to the negotiation. In the introductory chapter to this volume, Rudolf Avenhaus and Gunnar Sjöstedt define these types of risks as actor-conditioned risks. In sociology and in economics they are referred to as social risks. Conversely, issue-conditioned risks are not directly related to the behavior of the actors themselves, but instead are associated with threats imposed upon negotiation partners by external sources. Although the focus of the entire project is on the latter type of risk, it is necessary to consider both actor- and issue-conditioned risks in order to get a complete picture of the process of risk negotiations.

In this chapter, different coping strategies associated with actor-conditioned risks are analyzed. For this purpose, concepts of trust- and relationship-building are

Sabine Theresia Koeszegi
Faculty of Business, Economics, and Statistics, University of Vienna, Vienna, Austria, e-mail: sabine.koeszegi@univie.ac.at

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integrated into prevalent transactional frameworks of negotiation. For example, in the PIN Framework, negotiation is defined as:

a purposeful communication between two or more **actors**. Purposeful communication consists of **strategies** developed and implemented by actors to pursue or defend their interests. The entire pattern of interaction constitutes a **process**, whose form varies depending on the actors, their strategies and the influence of background factors. Background factors that change slowly and only over the long term constitute the **structure** in which party interaction takes place and the negotiation process unfolds. The **outcome** comprises the results attained in a negotiation (Kremenyuk, 1991).

This framework is extended with another central element of negotiation, that is, the relationship between actors and the fundamental characteristics of that relationship.

The resulting analysis framework, exhibited in Fig. 1, includes the idea of Salacuse (1998) that relationship building is a means and an end of negotiations. Hinde's approach (Hinde, 1979) to relationship is followed in this analysis and framed as a dyadic sequence of interaction occurring over an extended period of time. Consequently, link relationship building is closely linked to communication processes and the theory of pragmatics of human communication applied in order to analyze the effects of alternative strategies on process and outcomes of negotiations.

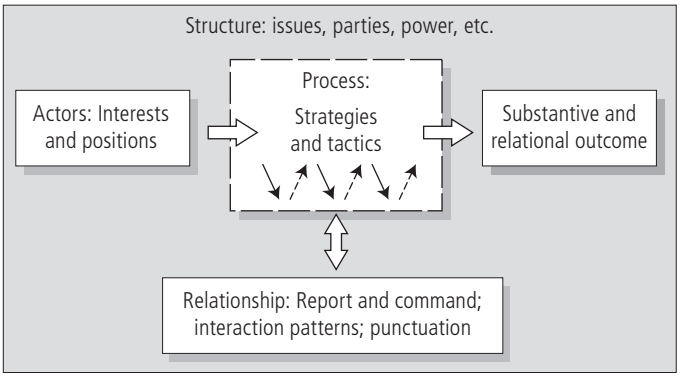

Fig. 1. Extended PIN framework

While the traditional structural analysis in the PIN framework is focused on the effect of power on negotiation processes and outcomes (Zartman, 2002) it does not address explicitly how alternative negotiation strategies may affect the relationship and trust building during negotiations. Clearly, trust and power are both extremely relevant—and interrelated—concepts. As we will see later, trust creates dependency, and dependency is associated with power. In the following analysis, however, the attention is focused on the effects of trust in negotiations and on how trust building can be facilitated during negotiation processes.

Coping with Actor-Conditioned Risks

Several factors indicate that actor-conditioned risks may increase in the case of risk negotiations.

First of all, risk negotiations are characterized by a considerable amount of ambiguity and uncertainty. In many instances, actors are confronted with asymmetrical information and knowledge about the risk issue (i.e., one party has considerably more information about the issue than others). Furthermore, we observe fundamental differences in the assessment and perception of risks stemming from different perspectives of stakeholders or cultural backgrounds of actors (Slovic, 1999). This ambiguity and uncertainty about the negotiated risks leads to increased flexibility in interpreting information, which may be exploited by opportunists. In fact, Wade-Benzoni et al. (1996), in their study on environmental social dilemmas, find that uncertainty caused more self-oriented and opportunistic behavior by negotiators than problem-solving behavior.

Secondly, in many cases, the goal of risk negotiations is to share the costs of risk-preventing measures. In his analysis of preventive negotiations in this volume, Zartman demonstrates that parties face intertemporal choice decisions where investments have to be made in the present in order to reduce or prevent uncertain negative consequences in the future. This outcome structure (i.e., the distribution of potential losses) differs considerably from negotiations where possible gains can be distributed. For instance, when negative external effects have to be borne mainly by third parties—for example, the effects of global warming resulting from pollution caused by industrialized countries have to be borne mainly by developing countries in the southern hemisphere[1]—individual negotiators may take the position of a "free viewer" (Zartman, this volume) by claiming that the threat is somebody else's problem. In such instances, the polluters have no incentive to participate in such negotiations at all and will hence choose conflict-avoiding as opposed to problem-solving strategies. As a result of this outcome structure, risk negotiations necessitate a different incentive and control structure on the part of negotiating parties in order to restrict opportunistic behavior.

Thirdly, agreements of risk negotiations typically incur both substantial short-term and long-term consequences—consider, for example, the scale of effects of measures to prevent climate change—as well as consequences with regard to the relationship between the negotiating parties. Furthermore, the negative perception of the immediate outcome of risk negotiations (i.e., the accrued costs of risk-preventing measures) tend to be accompanied by low satisfaction with the negotiation process and outcome and may complicate future relationships. To reduce the risks of non-compliance with negotiated agreements in the long run, the substantive outcomes of negotiations need to be backed up by the development of a solid relationship between actors.

Finally, in international risk negotiations the parties are confronted not only with the complexity of issues and their legal, administrative context, but also with risks

[1] Fischer et al. (2002).

resulting from the cultural diversity of the partners. For example, as Faure mentions in his analysis in this volume, social and cultural risks add a high degree of uncertainty to joint-venture negotiations: "one of the most important risks to be faced is the would-be partner, whose intentions, capabilities, and solvency can never be taken for granted."

Combined with these factors, the potential for opportunistic behavior compels negotiators to develop strategies to deal with these social risks. The spectrum of such strategies ranges from risk-preventing measures to risk-taking strategies.

The creation of social institutions and normative frameworks aims to decrease social risks (Zucker, 1986). In international negotiations, legal considerations, conventions (such as the Vienna Convention on the Law of Treaties), customs, and practices put outcomes of international negotiations into a normative framework (Cede, 2002, p. 147). However, Sitkin and Roth (1993) have demonstrated that there are limits to the effectiveness of legalistic measures, especially where value-related aspects are concerned. On the contrary, such measures can paradoxically encourage precisely the behavior that they are designed to deter. Shell (1991), for instance, argues that legitimate sellers are granted rights to sue for inappropriate use of information. This should help to ensure their proprietary rights to information that needs to be exchanged during negotiations. However, Shell demonstrates that it is precisely this right that encourages opportunists to flood potential buyers with vague concepts and later file unjustified legal claims. Hence, even if a precise and generally accepted legal framework reduces uncertainty, it can still allow latitude for action—and for opportunistic behavior.

At the other end of the spectrum of risk-coping mechanism is a risk-taking strategy—trust. According to Baier (1986), "trust is accepted vulnerability to another's possible but not expected ill will (or lack of goodwill) toward one". A review of literature on trust and negotiations reveals that mutual trust leads to information-sharing between negotiating partners (Butler, 1999; Greenhalgh and Chapman, 1998; Zand, 1972), which in turn has a positive impact on the effectiveness of the process and joint benefits (Butler, 1991; Kemp and Smith, 1994; Thompson, 1990, 1991). In addition, there is empirical evidence that trust leads to a higher motivation to implement the negotiated agreement (Zand, 1972). Moreover, trust among negotiators enables the use of strategies such as mutual-gains bargaining (Fisher and Ury, 1981; Friedman, 1993; Ross, 1996) and the problem-solving approach (Butler, 1995; Thomas, 1990) which are essential for integrative outcomes. Additionally, Deutsch (1960) and Greenhalgh and Chapman (1998) deliver empirical evidence that cohesive relationships between negotiators discourage the use of coercive tactics. Zaheer et al. (1998) report a positive influence of trust on ease of negotiation as well as on conflict reduction. Moreover, case studies demonstrate that trust- and confidence-building measures are prerequisites for conflict resolution in international disputes (Hinde, 1987). Several studies on mediation have also shown that trust in the mediator is an important predicate of agreement (Carnevale and Pegnetter, 1985).

However, trust, unlike risk-preventing strategies, creates or increases dependency between the negotiation partners. Some scholars argue that trust, especially when

the trusting act includes taking a considerable risk, may not be feasible because it will lead to exploitation or demonstrate weakness on the part of the negotiator. Leiss (1995), for instance, claims that in stakeholder negotiations concerning health and environmental risk controversies there are "very good reasons, based on historical reasons, for parties to mistrust each other deeply." His argument is based on the assumption that such negotiations are "treated as poker games in which bluffing, raising the ante, and calling the perceived bluffs of others are matters of survival." Hence, given the positive influence of mutual trust on negotiations, the question is whether trust is an appropriate strategy for individual negotiators to cope with actor-conditioned risks. If so, trust would then represent a "strategic asset" in negotiations.

The Concept of Trust

According to Weinstock (1999), trust has both an instrumental and an intrinsic value. He argues: "Relations of bare trust … are the only relationships in which we can express respect for others simply as human …. In it we find ourselves … acting well despite the fact of being bereft of any motive but that of respect for the others to act benevolently, or at least non-malevolently." However, the fundamental importance of trust goes beyond this moral reasoning. Its instrumental or functional value lies in its power as a risk-coping strategy in social relationships (Giddens, 1984; Lewis and Weigert, 1985; Luhmann, 1989). Moreover, "trust may be thought of as a functional prerequisite for the possibility of society in that the only alternatives to appropriate trust are chaos and paralyzing fear" (Lewis and Weigert, 1985, p. 968). It is the individual's experience of uncertainty—the result of human free will and decision making—that drives the individual to develop mechanisms to cope with an uncertain future.

The difference between trust and confidence is an important distinction in terms of mechanisms for coping with uncertainties (Luhmann, 1988). Although both concepts refer to expectations regarding a contingent event in the future that may be disappointed, they differ considerably in *how* those expectations are formed. According to Luhmann (1989), trust requires a conscious decision in favor of one action over others *despite* the possibility of disappointment occurring. A trustful expectation *acknowledges* the contingency between one's action and the risk of negative consequences incurred by it. However, in the case of confidence the expectation is formed because one *does not consider* alternative actions at all, thus eliminating the contingency. Alternatives may be ignored either because there are none (for instance, in the case of absolute dependence) or because one believes them to be irrelevant (Luhmann, 1989). There are three important implications, which we will discuss in more detail. Firstly, trust is *bidimensional* as it contains both an attitude and an action. Secondly, trust requires *choice*, and thirdly, the disappointment of trust leads to a *withdrawal of activities*.

Trust is Bidimensional

Some scholars have distinguished between the *trust attitude* (cognitive or emotional) and *behavioral trust* (Kee and Knox, 1970; Koller, 1988; Lewis and Weigert, 1985; Weinstock, 1999). A trusting attitude alone only registers one's assessment of the trustworthiness of another person; it excludes facing the consequences and remains theoretical. On the other hand, the occurrence of risk-taking actions may not always be based on a trusting attitude. As examples, they may instead be based on rational calculation such as a cooperative choice in a repeated prisoner's dilemma game (Axelrod, 1995), on hope or on confidence, or it may simply reflect gambling choices. The reduction of trust either to an attitude or to risk-taking behavior has led to some confusion and misinterpretations in the literature on trust, especially regarding the relationship between trust, uncertainty, and risk. Some of the empirical research suggests that trust, measured as an attitude (for instance, trust in politicians, in risk managers, etc.), is inversely related to uncertainty (Johnson and Scicchitano, 2000; Tenbrunsel, 1999) and risk (Johnson and Scicchitano, 2000; Sjöberg, 1999). In contrast, Koller (1988) as well as Kollock (1994) found a positive relationship between risk and trust in their experiments, measuring trust after subjects were exposed to either high-risk or low-risk situations. These conflicting results can be explained by taking Luhmann's contingency argument into account (Luhmann, 1989). Measuring trust merely as an attitude may reflect an indirect and inverse measure of risk perception, and thus we find negative correlations. On the other hand, the measurement of trust after a trusting (or distrusting) choice reflects the awareness of the social risk associated with one's own behavior; thus we find a positive relationship between trust and risk. The contingency argument is therefore important. Social trust is more than a trusting belief. To put it differently, the value of trust can only be realized when a trusting attitude has behavioral consequences. The decision to take a social risk translates the attitude into "real" trust, the combination of attitude and behavior. There is a parallel to the concept of knowledge—one would talk about knowledge only if the information one has is charged with utility. Information that does not enhance the capability for action does not translate into knowledge (Stehr, 2001). Accordingly, a trusting attitude that does not enhance the capability for action toward risk-taking behavior does not translate into trust.

Trust Requires Choice

As argued before, trust requires a conscious decision in favor of one specific action. This implies that there are alternatives—one has to have at least the possibility of refraining from entering into the risky relationship. However, the trust recipient must also be free to disappoint trust. The larger the set of alternatives available to the other party, the more salient trust becomes. "Trust will typically be relevant when at least one party is free to disappoint the other, free enough to avoid a risky relationship, and constrained enough to consider that relationship an attractive option."

(Gambetta, 1988, p. 219). Hence, force, exercised power, and absolute dependency contradict the concept of trust. This has implications for the creation of trust, which will be discussed in below. Here it is critical to understand that the provision of alternatives is fundamental for eliciting trust.

The Disappointment of Trust Leads to Withdrawal of Activities

The bidimensionality of trust and its utility for coping with social risk are important in the context of the consequences of disappointment of trust. While the frustration of confidence leads to feelings of alienation, the frustration of trust leads to a *withdrawal of activity* in the sense of refraining from taking a social risk (Luhmann, 1988). Therefore, the difference between trust and confidence may not be important as long as neither is disappointed; however, when either is frustrated, the difference has substantive implications.

In the following is elaborated, from an individual perspective, which factors determine the decision whether to trust or not to trust. After that, the dynamics of trust-building are discussed from a collective perspective (i.e., the relationship between trust giver and trust recipient). Finally, it is demonstrated how the norm of reciprocity and reputation supports trust-building dynamics.

Individual Perspective: The Trust Game

Although the colloquial use of the term trust includes trust in ability, know-how, information, or even in technology, ultimately, trust is always related to the *motivation or intention* of others. Whether we trust, or do not trust, is dependent on what we entrust (i.e., the consequences of a trusting choice) and on our assumptions about the intentions of the potential trust recipient.[2] Rational choice theory models this relationship in the "trust game" (Coleman, 1990; Lahno, 1995b) (Fig. 2).

The *sequential nature* of interaction in this game causes the problem of single-sided *dependency* through a trusting choice. Both actors have two strategies: C for cooperation, which can be interpreted as acting in a way that is beneficial for the other individual; and D for defection, which is disadvantageous for the other.

[2] Strictly speaking, whether we trust or not is also dependent on the characteristics of the trust giver. Rotter (1967) as well as Yamagishi and Yamagishi (1994); Yamagishi et al. (1998) have demonstrated that not all individuals are equally prepared to take social risks. They have also demonstrated that there are individual and cultural differences regarding the "disposition" to trust. Additionally, a disposition to trust (or distrust) is influenced by the individual's ontogeny. Individuals who are exposed continuously to a trusting (or distrusting) social environment (family, working place, etc.) develop a specific individual concept about trust in relationships. However as Yamagishi et al. (1998) argue, this general tendency toward trusting others can only be seen as a "default" variable, which influences the behavior of individuals at the beginning of a relationship, when no other information is available. As soon as individuals are interacting—and relating—to each other, this default expectation is replaced with actual knowledge derived from experience.

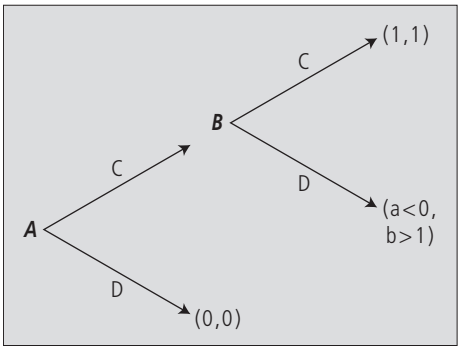

Fig. 2. Trust game

To demonstrate the structure of this game, it is worthwhile making a digression to the case presented by Faure in this volume. Faure focuses on the negotiation process in the context of the establishment of a Chinese joint venture which he defines as "an independent Chinese legal entity with limited liabilities that is jointly funded and operated by Chinese and foreign partners." The foreign parties provide a minimum of 25 percent of the total investment, comprising advanced technology contribution and/or cash (here corresponding to player A), whereas the Chinese partners contribute land use rights, domestic product, labor market access and domestic market know-how (corresponding to player B). The advantages of such joint ventures are substantial for both partners. Chinese companies obtain access to Western technology and know-how and, in return, foreign companies gain access to an enormous market and cheap labor. In order to reach an agreement on establishing a joint venture (cooperative solution; payoff normalized to 1,1), the Western partner would have to disclose crucial information about the technology to be transferred to the joint venture. The more information the Western partner releases, the better the chances are of reaching an acceptable price for the technology; however, the risk is also higher that this information can be used illegally by the Chinese partner (A cooperates and B defects; payoff $a < 0$, $b > 1$). However, without a technology transfer, a joint venture would not lead to the intended competitive advantage (A defects, payoff normalized to 0,0). The payoff structure of this game has the following equilibrium: for $b > 1$, A will not cooperate, as B would defect if A cooperated, because only for $b < 1$ would both parties cooperate. However, A would decide to choose the cooperative strategy even in the case where $b > 1$ when she trusts B (i.e., there is a "sufficiently high level of the subjective probability with which an agent A [the trust-giver] expects that another agent B [the trust-recipient] will perform a particular action), which is beneficial to A and which cannot … be monitored by A" (Lahno, 1995b, p. 445; similarly, Gambetta, 1988, p. 217).

Implicitly, there is the assumption in the trust game that the higher the stakes are for A (the possible negative consequences "a" of the cooperating strategy) the higher her trust needs to be in B. This assumption is borrowed from the basic framing of

decision problems under risk in decision and utility theory, where the expected (utility) values of alternatives are compared in order to derive a decision. Only if the expected value of the trusting choice is sufficiently high (as compared with the outside option) is it rational for A to trust. Therefore, in these models trust is equated with a probability value, which has some drawbacks. Although not explicitly outlined, this definition of trust appears to substantially overlap with predictability. However, in the sociological and psychological literature on trust, scholars have made a strong effort to distinguish trust from expectations and predictability (Deutsch, 1958; Lewis and Weigert, 1985; Luhmann, 1989; Mayer et al., 1995). As Lewis and Weigert (1985) argue, "Trust is characterized by a cognitive 'leap' beyond the expectations that reason and experience alone would warrant." Or, citing Luhmann (1989), in the case of trust, the informational base is "overdrawn." Predictability[3] can lead to cooperative behavior but it can also lead to a reduced likelihood that an individual will trust. What is missing in the term predictability is the *willingness* of a party to take social risks.

The trust game enlarges the focus of analysis to the *object* which is entrusted. It allows for an analysis of strategies for dealing with social risks and thus leads to interesting insights. We will therefore return to the trust game in a later section. However, its application to understanding the phenomenon of trust is not sufficient. Besides the general criticism on the underlying rationality assumption (Lahno, 1995b; Miller and Whitford, 2002; Pruitt and Kimmel, 1976) and the framing of trust as a prediction, the game theory approach to trust so far neglects important aspects of the relationship between the trust giver and the trust recipient. As Weinstock (1999) argues, "Trust requires that the person being trusted acts because of *how she stands to me* rather than of how she stands to that which I am entrusting to her." Hence, the relationship itself (i.e., how A and B relate to each other) is *central* for trust building.

Collective Perspective: Trust Building in Relationships

Although trust is a strategy through which individuals can deal with uncertainty, it is not a property of isolated individuals, but must be conceived as a property of collective units (i.e., dyads, groups, and collectivities) (Greenhalgh and Chapman, 1998; Hosmer, 1995; Lewis and Weigert, 1985; Olk and Elvira, 2001). As argued before, the behavioral dimension of trust links the concept to *interactions* between

[3] The mechanisms, trust and predictability, all lead to uncertainty reduction and they are interrelated. According to Mayer et al. (1995) "trust is based on a cognitive process which discriminates among persons and institutions that are trustworthy, distrusted, and unknown." Following this argument as well as Luhmann (1988), familiarity is a precondition for trust. There needs to be a specific degree of familiarity with the object of trust because under complete certainty, there is no need for trust, and under absolute ignorance, there can be no reason to trust. Hence, familiarity introduces a certain degree of predictability of behavior.

actors rather than to the actors themselves,[4] which calls for an analysis of interaction processes and patterns.

Watzlawick et al. published as far back as 1967 a theory on the pragmatics of human communication. In this theory, they developed the fundamental principles of human interaction. Watzlawick et al. (1967, p. 50) define a single communicational unit as a "message" or a "communication," whereas a sequence of exchanged messages including at least two units (a communication and a reply) is called "interaction." "Patterns of interaction" include several interactions.

Watzlawick et al. (1967, p. 51) suggest that "any communication implies a commitment and thereby defines the relationship. This is another way of saying that a communication not only conveys information, but that at the same time it imposes behavior." This means that every communication unit has *two* aspects: the "report," conveying information which refers to the content of a message and a "command" referring to how the message should be interpreted and therefore defining the *relationship* between the communicators. Statements about relationships, although most of the time not deliberately defined, contain one or several of the following declarations: "This is how I see myself … this is how I see you … this is how I see you seeing me" (Watzlawick et al., 1967, p. 52).

One important implication is that one cannot communicate without defining the relationship, or to put it differently: every single communication act does affect the relationship between the communicators. With reference to trust, this supports my previous suggestion that a mere trusting attitude does not translate into trust if it does not lead to behavioral consequences. Trust, as a certain quality of the relationship, manifests itself through interaction. Through continuous interactions between individuals, each of which contains a similar relational message, the quality of the relationship is fostered. Hence, if mutual trust (or distrust) is established over a long history of interaction, trust (or distrust) tends to become evidence-resistant: the trust giver will refer to the relational basis of interaction and "read" the behavior of the trust recipient in a way that tends to confirm the trust (or distrust), even if the behavior actually was the opposite. Therefore, trust is to some extent resilient (Robinson, 1996; Weinstock, 1999). Nevertheless, a continuous or severe frustration of trust will lead to a new interpretation of the relationship and in the worse case to a withdrawal of activities and to a distrusting cycle.

The second important implication of the different levels of communication is the hierarchical relationship between the report and command aspect of communication. According to Watzlawick et al. (1967), the command aspect determines the content

[4] Interactions take place between individuals, acting for themselves or as agents of institutions or collectivities. Hence, the trust mechanism described so far can be translated beyond individuals, although this adds complexity. Trust between institutions is enacted by representatives or agents of these collectivities and is therefore to some extent irreducibly interpersonal (Weinstock, 1999). In international negotiations actors encounter one another as individuals who occupy certain positions of authority within the institutions they represent. Trust is then not only directed toward the intentions of the institutions represented by negotiators but also toward negotiators themselves in that they interpret and enact their roles in a trustworthy manner. Some of the complexity added through the agency argument is addressed by Shapiro (1987) for the general case and by Putnam (1988) for "two-level games" in international negotiations.

of the message, that is, the relationship level is meta-information, as it is information regarding how the message should be understood. With respect to negotiations, this means that the report aspect of strategies and tactics determines how the negotiation process evolves and, in turn, how the quality of the relationship determines the way in which the actors will interpret the strategies or behaviors of their opponents.

The third important characteristic of human interaction is circularity. Watzlawick et al. (1967) claim that chains of causality are meaningless in systems with feedback loops, such as the human interaction. Rather than a stimulus-response framing, one has to include a longer sequence of interchange to elaborate interaction patterns. Within a longer sequence of interchange, every item in the sequence is simultaneously stimulus, response, and reinforcement.

Although an outside observer is able to view a series of communications as an uninterrupted sequence of interchanges, from the inside, interaction partners introduce a *punctuation* of the sequence of exchanges (Watzlawick et al., 1967). From Fig. 3, it can be seen that A will perceive triads 2-3-4, 4-5-6, 6-7-8 and so forth. That is, A perceives her communication (solid arrows) as a reaction to B (broken arrows). However, B will punctuate the sequence exactly the other way round: 1-2-3, 3-4-5, 5-6-7, perceiving her communication as a response to A's behavior.

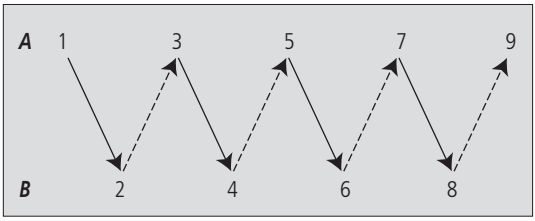

Fig. 3. Sequence of interaction

The following analysis of an arms race, dating from 1939, demonstrates one example of divergent punctuations.

As they maintain the best way to preserve peace is to prepare war, it is not altogether clear why all nations should regard the armaments of other nations as a menace to peace. However, they do so regard them, and are accordingly stimulated to increase their armaments to overtop the armaments by which they conceive themselves to be threatened. These increased arms being in their turn regarded as a menace by nation A whose allegedly defensive armaments have provoked them, are used by nation A as a pretext for accumulating yet greater armaments wherewith to defend itself against the menace. Yet these greater armaments are in turn interpreted by neighboring nations as constituting a menace to themselves and so on (Watzlawick et al., 1967, p. 58).

Therefore, Watzlawick et al. (1967, p. 59) formulated another axiom claiming that: "the nature of a relationship is contingent upon the punctuation of the communicational sequences between the communicants."

Trust-Enhancing Mechanisms

Based upon the previous analysis, we can identify three mechanisms that enhance trust building. First of all, the circularity of interaction patterns makes trusting as well as distrusting behaviors self-enforcing processes. Trust building is a dynamic process where initial trusting acts lead to responses in kind which, in turn, evoke reinforcement of the initial trust.

Secondly, exchange theory concepts, such as the norm of reciprocity and fairness principles, have recently received some attention in negotiation research (Baldwin, 1998; Larson, 1998; Leng, 1998; Lepgold and Shambaugh, 1998; Pruitt and Carnevale, 1993). This literature suggests that the norm of reciprocity facilitates the production of mutual trust between individuals (e.g., Gambetta, 1988). Gouldner (1960) defines the norm of reciprocity as the belief that one should help and not hurt those who have helped one. He further argues that the norm of reciprocity is culturally universal and people feel guilty when they ignore it. Additionally, when people fail to reciprocate they will experience disapproval from others.

The norm of reciprocity creates the expectation that giving a favor to another person is a good investment, which will bring possible future returns in the form of favors. By relying on this norm, individuals create an "illusion of control" over the other partner's behavior. Experimental research supports the hypothesis that the illusion of control is an important motive for cooperative behavior in sequential and interdependent games (Karp et al., 1993; Hayashi et al., 1999; Yamagishi and Yamagishi, 1994; Koeszegi, 2001). Hence, the norm of reciprocity provides a normative framework, within which trust is embedded, or as Weinstock (1999, p. 293) argues: "[Trust creates] a *moral* relation in that it is related to one's beliefs or attitudes concerning another person's motivations towards one." This normative dimension of trust can also be seen in how individuals define trustworthiness. According to empirical studies, of the following five most important characteristics for trustworthiness, the first four contain moral values (Hosmer 1995; Mayer et al. 1995): 1) *benevolence* (i.e., the willingness to protect, support, and encourage others without an egocentric motive); 2) *integrity* (i.e., adherence to honesty and truthfulness); 3) *consistency* (i.e., reliability and predictability); 4) *openness* (i.e., the willingness to share ideas and information freely); and 5) *ability* (i.e., competencies that influence a specific domain).

Although it is an illusory belief that one can control a partner's behavior, a trusting act creates a strong moral obligation for reciprocation.[5] But there is another important implication of the normative dimension of trust: trusting others is also

[5] This is also supported by the fact that the norm of reciprocity elicits trust even in extremely asymmetric relationships (Luhmann, 1988). If we consider the example of victims suffering from Helsinki Syndrome, who trust their hostage takers or hijackers, we observe the power of the mechanism. Although the dependency of one actor is a structural condition, the trust recipient has an indispensable function for the trust-giving person. According to Luhmann (1989), the attitude of trust, in such situations, is critical for the processing and integration of experiences for the dependent person. We may argue here, that by "voluntarily" handing over control to the trust recipient, trust can reestablish a balance within the relationship. By trusting the hostage takers, the victims act as if it was their turn to trust, thus creating a moral obligation to reciprocate.

a signal for one's own trustworthiness. Rotter (1967) as well as Yamagishi et al. (1998) measured people's general tendency to trust others and found that individuals who believe that other people are in general trustworthy and honest, perceive themselves as being trustful. Furthermore they will take social risks more often than people with a low general tendency to trust others. Kydd (2000) demonstrated that *costly signals* separate trustworthy actors from the untrustworthy. The most efficient way to convince the other side of one's own trustworthiness is to trust, as it is a signal which is "so costly that one would hesitate to send [it] if one were untrustworthy" (Kydd, 2000).

The third mechanism facilitating trust-building is the construction of reputation. As mentioned previously, Gouldner (1960) hypothesized that those individuals who fail to reciprocate experience disapproval from others. When opportunistic behavior includes losses to reputation and self-image, the incentives for breaching trust are reduced. Game theory models (Burt and Knez, 1995; Kreps and Wilson, 1980; Lahno, 1995a) as well as analyses of opportunistic behavior in contractual relationships (Shell, 1991) demonstrate that when the negative effects on reputation of opportunistic behavior are strong enough, reciprocation of cooperative and trusting behavior becomes a dominant strategy.

Risk Coping Strategies

In the previous section, the mechanism of trust and the dynamics of trust building were explored. In this section, strategic implications for negotiators will be discussed. For this purpose, the basic structure of the trust game and the case of Sino-Western joint-venture negotiations are recalled to demonstrate the different effects of strategies. In order to reach an agreement on establishing a joint venture, the Western partner would have to disclose critical information about the technology to be transferred into the joint venture, thereby facing the risk that this information might be used illegally by the Chinese partner. As mentioned previously, legal mechanisms, especially in the case of China, do not protect Western companies sufficiently from plagiarism of their technology. Hence, the Western company faces the trust dilemma. In this situation, the Western partner has to find ways to manage the social risk, which can range from risk-preventing strategies (i.e., reducing the negative consequences of opportunistic behavior) to risk-taking strategies (i.e., trusting behavior).

Risk-Preventing Strategies

The Western partner's strategies to reduce the risks of exploitation can be directed toward reducing the negative consequences of the possible opportunistic behavior of the Chinese partner. As Faure describes in this publication, the Western partner may release only parts of the information it holds and keep crucial elements unrevealed.

While, for instance, the production and assembly of non-crucial parts of the technology are transferred into the joint venture, the development and production of the core technology will remain in the mother company. Another possible strategy is the implementation of risk-shifting measures such as the provision of third parties' guarantees or the use of hostages[6] (Shell, 1991; Williamson, 1983).

Although all these strategies may be efficient in terms of reducing the risk of exploitation, the Chinese negotiators will probably interpret them as a signal of distrust. Although the report aspect of the Western company's strategy is "we want to reduce potential losses," the command to the Chinese company is "we do not trust you." Risk-preventing strategies *are* in fact distrusting strategies and could cause negative effects on the negotiation process. Especially in cultures where the threat of losing face has tremendous effects, a distrusting declaration about the relationship will probably complicate the negotiation process. In fact, Leng (1998); Pruitt and Carnevale (1993); Pruitt and Rubin (1986); Zand (1972) and many others have demonstrated how distrusting strategies can lead to withdrawal from negotiations, conflict cycles, escalation of conflicts, and stalemates.

Small Risk Taking or First-Order Strategies

Another set of strategies does not reduce the risk of opportunistic behavior but is directed toward reducing uncertainty about the intentions of the negotiation partner.

Firstly, the Western company may, for instance, seek as potential Chinese partners only those who have already successfully established joint ventures with foreign companies. Or the Western negotiators could rely, for instance, on information about the credibility of the Chinese partner provided by a trusted third party. In a strict sense, these strategies do not reduce the risk of opportunistic behavior. However, based on the rationale of reputation effects described earlier, the Western partner perceives the probability of opportunistic behavior and consequently judges the risk to be lower.

Another type of strategy is designed to initiate or enforce trust-building cycles of reciprocity. The Western negotiators would incrementally reveal information during the negotiating process by taking only small risks at a time, in case the Chinese partner reciprocates. With reference to Watzlawick et al. (1974), I call these strategies "first-order strategies." They continue the logic of previous interaction; that is, negotiators make reference to the previous communication act of the other party and reciprocate.

In the negotiation literature, examples of first-order strategies were discussed, for example, by Shell (1991) and by Osgood (1962). GRIT (Graduated Reciprocation In Tension-reduction) for instance integrates the following aspects:

1. Announcement of a cooperative initiative to avoid misinterpretations;

[6] In economic relationships, the exchange of credible commitments is used to protect against opportunistic behavior. These credible commitments represent—although not literally—"hostages" to guarantee reciprocity in exchange.

2. Invitation to one's opponent to reciprocate;
3. Reciprocation of cooperative actions and retaliation against non-cooperation.

The initiation of such a trust-building cycle requires a trusting choice by the first one to act, which may incur only a small risk. Through a continuous cycle of reciprocation, trust within the relationship can be fostered and allows for greater risks to be taken in the long run.

Second-Order Strategies

However, if negotiators find themselves in a distrusting cycle of reciprocation, a continuation of the logic of interaction leads to stalemates or escalation of conflicts. To break out of such patterns of interaction, negotiators have to take "second-order strategies." These strategies change the logic of interaction, even though they contradict the notion of reciprocity and therefore seem irrational (Brett et al., 1998). Again, in the negotiation literature, there are some examples of successful implementation of this type of strategy documented. Pruitt and Carnevale (1993) argue that, for instance, the Egyptian President Anwar Sadat with his visit to Jerusalem in November 1957, U.S. President John F. Kennedy with his announcement to stop atmospheric nuclear tests in 1963, as well as Soviet Chairman Mikhail Gorbachev with his withdrawal from Afghanistan in 1987, succeeded in the dissolution of negative cycles of reciprocation by taking dramatic conciliatory initiatives.

Apart from the suggestion to announce the initiative ahead of time, these initiatives differ considerably from first-order strategies. Pruitt and Carnevale (1993) suggest that conciliatory initiatives have to display the following characteristics. They have to be:

1. Irrevocable and non-contingent;
2. Costly or risky;
3. Unexpected and noticeable in order to provoke thought;
4. Capable of demonstrating a good and lasting rationale as to why the initiator wants to change the relationship; and
5. Continued at least for some time, even if the partner fails to cooperate.

Interpreting conciliatory initiatives in terms of the theory on pragmatics of human interaction demonstrates how the willingness to make a trusting choice translates into a strategic asset in conflict cycles. First of all, and most importantly, negotiators change the punctuation of the interaction. By taking a considerable social risk, their behavior disturbs the prevalent pattern of interaction because the addressees (and the observers) of this type of action cannot interpret it as a response or reinforcement of previous interaction. Second, at the relational level, conciliatory initiatives deliver the message "I make myself vulnerable and I trust you."

Another second-order strategy related to trust building is the creation of alternatives and choice for negotiation partners. In negotiation literature, this strategy is often referred to as "enlarging the pie" (Pruitt and Carnevale, 1993) (i.e., extending the context for problem solution to create win–win situations). I have argued at

the beginning of this chapter that trust needs choice in order to be elicited and that absolute dependence and force contradicts the concept of trust. Weinstock (1999) discusses one example of trust building through the provision of alternatives in his analysis of divided societies. He suggests that giving minorities the right to secession initiates a trust-building process that may ultimately result in a movement to stay within the society rather than to secede (p. 303):

> A properly framed constitutional right to secession can somewhat paradoxically enhance trust by giving groups reason to believe that they are not forever trapped against their wills in an unhappy union, but by defining the procedure which must be followed in order to trigger lawful secession in a way which only makes it worthwhile for the a group in extreme cases.

The underlying rationale behind this strategy is to reestablish a balance within the asymmetric relationship.

From the perspective of an individual negotiator both second-order strategies involve the acceptance of considerable social risks. The negotiators need to understand the structure of the conflict and the effects of punctuation in interaction patterns, and they also need to be able to act upon a collective rationale instead of an egocentric, individual rationale.

Summary and Conclusions

The purpose of this chapter was to investigate whether trust is an appropriate strategy for coping with actor-conditioned risks in negotiations. The analysis was motivated by the assumption that, especially in risk negotiations, actor-conditioned risks could be considerable. Factors like information asymmetry, complexity of risk issues and risk assessment, potential losses as opposed to potential gains as outcome stakes, to name but a few, increase uncertainty and the potential for opportunistic behavior in risk negotiations. Although there is vast empirical evidence about the positive effects of mutual trust on negotiation processes and outcomes, from an individual perspective, the trust dilemma is not easy to resolve. Although it is of fundamental importance to trust each other to share information and knowledge and to resolve conflicts, the probability of making ourselves vulnerable decreases with the increasing potential losses we face.

The challenge of trust building in negotiation is closely related to the strategies and tactics negotiators apply. Probably the most important insight we gain through the extension of the analysis framework is that there are different consequences associated with risk-preventing (non-trusting) and risk-taking (trusting) strategies. As summarized in Table 1, three different types of strategies to cope with actor-conditioned risks in negotiations are distinguished. The first type of strategy is aimed at reducing or shifting social risk. Although not explicitly intended, such risk-preventing strategies are mistrusting strategies and may have a negative influence on the negotiation process. Especially in cultures where relationship and trust

building are extremely important, the use of such strategies may be interpreted as an offense.

Table 1. Risk-coping strategies

	Risk-preventing strategies	Risk-taking strategies	
		First-order strategies	Second-order strategies
Relationship is based on	Distrust	Trust	Trust
Mechanism	Norm of reciprocity	Norm of reciprocity and reputation	Disrupting reciprocity
Examples	Third-party guarantee Exchange of credible commitments	Small risk taking GRID Tit for tat	Dramatic conciliatory initiatives Enlarging the pie

The second type of strategy is aimed at reducing uncertainty regarding the intentions of the negotiation partner. This is accomplished either by acquiring information about the trustworthiness of negotiation partners through trusted third parties or by taking small risks at a time to encourage a trust-building cycle based on the norm of reciprocity. When applying first-order strategies, negotiators willingly make themselves somewhat vulnerable. Finally, the third type of strategy incurs negotiators having to be prepared to accept a considerable social risk. In the case of second-order strategies, negotiators ignore the norm of reciprocity, either to escape from distrust cycles or to demonstrate their serious intention to move toward an agreement.

The distinction between first-order and second-order strategies is also important with regard to the time horizon of negotiations. In recurrent or long-term negotiations, mutual trust and confidence-building can be expected in the long run, as the dynamics of the trust-building process is based on the norm of reciprocity and hence is self-enforcing. However, in short-term predicaments such a process cannot unfold. It is in these instances especially that the potential of second-order strategies to establish trust "from the spot" can be demonstrated. Here, the ability and willingness to trust reflects a strategic asset in negotiations.

To summarize, this analysis has demonstrated that negotiation processes are not only "positional wars" over issues, but that they also concern to a considerable extent the development of the relationship between the negotiators. Framing negotiation processes as communication processes allows parties to elaborate the set of available strategies in the light of their impact on the relationship-building process. This more comprehensive analysis framework—not only comprising outcomes at a substantive level (negotiation issues) but also at a relationship level—may facilitate negotiation processes, especially when risks or possible losses have to be distributed instead of gains, as is the case in risk negotiations. The more comprehensive perspective might change the outcome stakes, and possible losses could be outweighed

by a better relationship for future collaboration. Nevertheless, trusting a negotiation partner still remains a risky business. In situations where high risks are at stake, negotiators may simply not be able to afford taking the risk of a trusting strategy.

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Prospect Theory and Negotiation

Rose McDermott

Introduction

When people negotiate, they are essentially attempting to undertake some kind of trade. Individuals can trade money for goods and services, or they can trade services for goods, and so on. The goal is to make a good exchange. Each participant tries to get a good deal, meaning that each person's goal is to give up as little as possible, while obtaining as much as possible. In the realm of international relations, the same principles hold, although the exchanges may involve different prizes, such as land for peace, money for arms, or arms for security, for example.

So how does each side approach such trades? Do negotiators and their constituents approach every transaction as a mere cost-benefit analysis? Do other factors influence negotiation tactics, including the action of third parties or the personalities of individual leaders or negotiators? How does the political context interact with individual preferences to produce resolutions to entrenched conflicts? While many different models have been applied to explain risk taking in negotiation, to a greater or lesser degree of success, this chapter argues that Prospect Theory can provide a comprehensive explanatory framework for understanding the motivation behind seemingly irrational actions and behaviors in decision making under conditions of risk, including those relevant to bargaining and negotiation. Moreover, Prospect Theory can also provide systematic predictions concerning dispute outcomes.

As will be discussed over the course of this chapter, Prospect Theory has a lot to offer models of negotiation, especially through its emphasis on the importance of how issues are framed. As Avenhaus and Sjöstedt point out in the introductory chapter to this volume, there are important differences between actor-conditioned and issue-conditioned risks in negotiation. In some ways, these differences reflect the level of analysis distinctions between rational choice and game theory models.

Rose McDermott
Brown University, Providence, Rhode Island, USA, e-mail: mcdermott@polsci.ucsb.edu

R. Avenhaus, G. Sjöstedt (eds.), *Negotiated Risks*, DOI 10.1007/978-3-540-92993-2_5,

Rational choice describes individual decisions, while game theory applies individual behavior to the context of strategic interaction. Similarly, issue-conditioned risks encompass those risks that remain inherent in a given problem, while actor-conditioned risks incorporate those that take place within the context of the negotiation itself. Prospect Theory has much more to say about issue-conditioned risks, and how such risks are assessed and interpreted, than it does about actor-conditioned risks.

To further place this discussion in terms of the conceptual organization of this volume, Prospect Theory is most likely to affect the pre-negotiation process stage of negotiation, and most likely to influence the risk-perception and risk-assessment aspects of the actor–risk relationship. Prospect Theory argues that the way in which options are presented to, or framed for decision makers can exert a decisive influence on the substance of subsequent choice; thus, this approach is most likely to affect the pre-negotiation process stages of negotiation. This is because, as Avenhaus and Sjöstedt point out in their introductory chapter, pre-negotiation largely revolves around finding an agreed framework that defines the universe of problems or concerns to be addressed. Such a delineation of the issues can be highly influenced by the framing, wording, order, or method of presentation of the relevant options put forward for discussion.

Prospect Theory is most likely to affect the risk-perception and risk-assessment aspects of the actor–risk relationship. This is primarily because framing fundamentally structures the perception of risk; in Prospect Theory, such perception is in fact driven largely by framing effects in the initial phase of the model. In addition, Prospect Theory influences the assessment of risk in the second, evaluation, phase of the model. Indeed, how risks are assessed is dependent on the contextual environment in which the actor finds him or herself. This emphasis on the situation focuses significant attention on both the prospects for gain—and the risks for loss—that remain inherent in any high-stakes negotiating process.

Many of the examples in this chapter are drawn from arms control negotiations. This does not imply that Prospect Theory can be applied only to this area. Prospect Theory offers a much more general theory of decision making under conditions of risk, as well as riskless, choice. However, arms control negotiations represent an important arena of negotiations in international relations that present many illustrations of the phenomena under discussion here, namely, decision making under conditions of risk within the realm of bargaining and negotiation. The long history of American–Soviet arms control negotiations is replete with examples of attempts on the part of each side to give up less of one weapon system in return for the other side giving up a great deal of another type of system (Talbott, 1985). Stalemates were common, and breakthroughs took years. Clearly, part of the problem was that the weapon systems were asymmetrical: accuracy, yield, reliability, and range differed across systems and nations. But some of the deadlocks arose from a common characteristic of bargaining and negotiation: each side found its own concessions more painful than they felt pleased by the benefits received from the other side's concessions.

The remainder of this chapter will proceed in four parts. The first will briefly outline some of the major theoretical alternatives for explaining bargaining and negotiation behavior. The second section will provide an overview of Prospect Theory as an alternative for understanding decision making under risk within the context of bargaining and negotiation. Third, previous work applying Prospect Theory to negotiation situations will be reviewed. And the final section will posit several insights derived from a Prospect Theory perspective, which can help illuminate and improve negotiation behavior and outcomes.

Alternative Models of Negotiation

There are many different approaches to explaining negotiation that exist in the literature (for a review, see Neale and Bazerman, 1985). Economic models such as those grounded in Expected Utility theory assume that negotiators and their constituents seek straightforward utility maximization. But if this were true, agreements would be easier to reach whenever an obvious overlap in interests emerged, and this is certainly not the case. As an example of this kind of rational choice approach to negotiation, Werner (1998) conducted a logit analysis of wars between 1816 and 1980 in order to explain variations in the features involved in ending wars. She found that how wars end depends in part on the original aims of the belligerents and in part on factors arising out of the negotiated end of the war. Such factors, she argued, reflect the parties' assessments of both the costs and risks of continuing the war. In this model, adversaries' original war aims influence the negotiation leverage each side can claim by increasing the political costs of continuing the war. This negotiation leverage is then used to demand an increase in concessions from the opponent and to concede less oneself. This model, while compelling in many circumstances, obviously cannot apply when the participants are motivated to initiate or continue conflicts for reasons that may not be related to costs and risks, but rather to less quantifiable factors, such as revenge, identity, or religion. In particular, while Expected Utility models may be able to explain the case of true believers, namely, those who would rather die than lose or who prefer to fight rather than negotiate, analysis such as this depends on a set of assumptions about others' preferences that often remain inexplicable to most civilians in Western culture. For example, Expected Utility may be able to explain the motivations of a suicide bomber by claiming his preference for death over surrender, but it still remains difficult, a priori, to know who such individuals might be, or how it might be possible to alter their preference orderings in ways that would encourage less violent outcome.

Other models point to the importance of structural effects on the outcome of negotiation. Such factors include third-party procedures where an external party to a dispute attempts to mediate between belligerents (Bazerman and Neale, 1982; Conlon and Ross, 1993). In some cases, as in labor disputes, the third party may possess enough power to actually force a settlement on the warring factions. In international disputes between sovereign nations, however, third parties usually can

do little more than facilitate communication between parties and perhaps provide additional incentives to encourage settlement, as when the United States offered monetary benefits to Egypt to encourage Sadat to make peace with Israel during the Carter administration. Alternatively, third parties, such as the United Nations, can put peacekeeping forces in place to prevent violence between warring sides, but these forces alone are rarely sufficient to address the underlying conflict itself. Such intervention, while often helpful, does not always succeed in achieving settlement between parties.

A second way in which structural factors can influence negotiation outcomes is through the use of constituent pressure (Walton and McKersie, 1965). Certain groups may support particular positions and advocate for them in negotiation situations. This phenomenon can either help or hinder successful negotiation. In some cases, constituent pressure can provide negotiation leverage, allowing one side to point to their constituency and claim that further concessions are impossible given the strength of their opposition. However, in other cases, constituent advocacy can backfire, especially if a negotiator's commitment to a particular group is so strong that it biases his ability to pursue realistic proposals that might be offered or to make concessions that are necessary for agreement to be reached (Lamm and Kogan, 1970). This can hinder the ability of negotiators to achieve a resolution, even if there is an area of overlapping interests.

A third model posits that the personalities of particular leaders can explain the differences in negotiating style, which in turn can affect individual negotiation strategy (for a review, see Rubin and Brown, 1975). The characteristics that have been looked at most closely in this regard relate to risk-taking propensity and other specific cognitive biases. For example, Rapoport and Chammah (1965) found that individuals with high risk propensities prefer more competitive games than those with low risk propensities. Similarly, Harnett et al. (1968) reported that those who prefer high risks make fewer concessions. More recently, Kowert and Herman (1997) argued that some people take risks for gains, while others refuse to take losses for them. They argue that personality characteristics can predict risk propensity. In this argument, risk propensity lies rooted in the character of an individual and not simply in the framing of an event.

Behavioral models present a final alternative to understanding and analyzing negotiation behavior. Such arguments examine negotiating from the perspective of either a distributive or an integrative bargaining model. Distributive bargaining involves the division of resources between parties. In this strategy, if one side wins, the other side necessarily loses. In integrative bargaining, attempts are made to solve conflicts in ways that benefit all parties. This can be accomplished, for example, by mechanisms which include finding ways to expand the pie that is to be divided, logrolling, side payments, and so on. While this approach can be very useful, it remains challenging to understand how negotiators decide which bargaining context they are operating in, how such distinctions affect their bargaining behavior, and which mechanisms might be employed to achieve a successful outcome. In addition, it can be hard to know how intangible but significant factors such as trust and goodwill enter into the negotiating process within this model.

Prospect Theory provides a useful alternative to these models for understanding negotiating and bargaining behavior. The remainder of this chapter attempts to provide a Prospect Theory interpretation of decision making under conditions of risk, including those related to negotiation and bargaining behavior. The first section provides a brief explanation of Prospect Theory and discusses how it might illuminate understanding of approaches to negotiation. The second part examines the notable attempts that have been made to apply Prospect Theory to negotiation behavior at a theoretical level. And the final segment presents some additional considerations in applying Prospect Theory to negotiation situations.

Prospect Theory

Prospect Theory is a descriptive model of individual decision making under conditions of risk (Kahneman and Tversky, 1979, 1984; Tversky and Kahneman, 1992). This theory was developed in explicit opposition to more normative models of choice, such as those offered by rational choice models such as Expected Utility theory. To be clear, the foundations for substantive propositions behind Prospect Theory are empirical and experimental in nature. Tversky and Kahneman (1981), followed by others, undertook a series of experiments which demonstrated that people's substantive choices were affected by so-called framing effects, whereby most individuals' choices can be altered by the method, form, or order of presentation. This finding is not consistent with models of rational choice which typically demand that choices should not be altered on the basis of these factors. Kahneman and Tversky (1979) also demonstrated, based on earlier work by Allais (1953), that people tend to be risk-averse when confronting gains and risk-seeking in the face of losses. Kahneman and Tversky built a mathematical model to account for these experimental findings and anomalies, which was then called Prospect Theory. In this work, the experimental evidence demonstrating the myriad ways in which people systematically violate the behavioral assumptions upon which such economic models as Expected Utility are founded remains robust. Prospect Theory provides an empirically valid characterization of these behavioral anomalies.

Why should this matter for negotiation? The central insights provided by Prospect Theory relate to risk propensity. Risk, whether consciously acknowledged or not, represents an implicit aspect of most, if not all, negotiation contexts. Risk does not involve simply the cost of what might ultimately be given up in an exchange. Rather, risk also involves the prospective threat of loss as well. Risk revolves around the threat that something of value might be lost, whether that thing takes the form of money, security, lives, or some other value. In negotiation situations, opponents attempt to achieve the best outcome for their interests, meaning that they want to trade as little of value as possible in order to obtain as much of value as possible. This kind of trade or exchange involves some central elements of risk, because the threat always exists that, knowingly or not, one side might give up something more valuable than the other side, placing that side at a potential disadvantage

against his opponent. Or, agreement might remain blocked because one side refuses to give up something of value, believing the other side is not giving up something of equal value. When this happens, both sides can end up losing overall by restricting the possibility for trade, profit, alliance, or protection as well. Such deadlocks were commonplace in the Reagan administration's approach to arms control negotiations with the Soviets for example (Talbott, 1985; McDermott, 2002).

How does this notion of risk impact on the understanding and analysis of negotiation behavior more generally? Risk becomes a central component in negotiation situations where costs and benefits are not measured only in absolute terms, but in relative ones as well. Prospect Theory provides a very useful heuristic tool for examining the ways in which situational factors in the negotiation environment can impact risk propensity in predictable ways and thus potentially impact the outcome of negotiations.

Prospect Theory presents a model of individual decision-making behavior. It encompasses two different sequential phases, or parts. First comes the editing, or framing, phase, followed by the evaluation phase. Editing or framing refers to the way in which the method, order, or form of presentation affects individual judgments. Framing usually takes place prior to actual choice, when decision makers and their advisors formulate which options will be considered and which ones will not. The way in which options are framed for later decision depends on prior judgments about how likely a given event or outcome might be. These judgments rest on external assessments of probability. Following such judgments, options are framed for decision makers in the first phase of Prospect Theory. As a decision maker enters the second, evaluation, phase of Prospect Theory, decisions rely more on internal assessments of value trade-offs between options and their contingencies.

Framing refers to the way in which options are represented. Contrary to normative claims which assume dominance, invariance, and transitivity in choice, such as those common in rational choice models, decisions here can be substantively affected by the method, order, or manner of presentation. Since trivial shifts in elicitation procedures can exert a dramatic impact on choice, possibilities for the external manipulation of a decision maker arise in this context. A clever advisor who knows how to manipulate the presentation of choices might easily ensure that his preferred option receives a privileged position among the options raised. For example, Simonson and Tversky (1992) demonstrated that most people possess a natural aversion to extreme options or situations. Thus, just by creating one more extreme option, a manipulative advisor can encourage a decision maker to choose a middle option that would have appeared unacceptable without the contrast effect of the even more extreme additional option.

In their classic demonstration of framing effects, Tversky and Kahneman (1981) conducted an experiment in which they asked subjects how they might respond to the outbreak of an unusual Asian disease. When the options were presented in terms of how many people would die, subjects made a different choice than when the exact same numbers were presented in terms of how many people would live. In another dramatic demonstration, they showed that physicians and patients chose different treatments for lung cancer, either radiation or surgery, based on whether the odds

of recovering were presented in terms of mortality or survival. Although the experimentally presented percentages were identical in actual terms, many more people chose radiation over surgery when the odds were presented in terms of mortality, because only radiation does not risk death itself during treatment (McNeil et al., 1982). Note that even trained physicians fell into this perceptual trap as well.

Indeed, politicians will reformulate issues and topics when they realize the importance of framing the debate in the most useful way for their cause. The importance of such rhetorical constructions cannot be doubted by any who have witnessed the evolving language of the abortion debate, where great efforts have been put into recasting "anti-abortion" advocates as "pro-life" or "pro-abortion" supporters as "pro-choice." Similarly, while businesses often advertise "cash discounts," they are very unlikely to promote "credit surcharges."

The important implication of this finding is that friends, advisors, and negotiators, by accident or manipulation, can affect the substance of choice simply by altering the framing of options. The actual choices need not differ; merely presenting the same choice in alternate ways, using different wording, can affect decision making in significant ways. Sophisticated negotiators can use this knowledge to their own advantage by manipulating options and contingencies in ways that favor their preferred outcome.

Evaluation constitutes the second phase of Prospect Theory. Evaluation encompasses two aspects. The first is the value function. The second is the weighting function. Both are described graphically in curves. Three characteristics of the value function are the most important. First, outcomes are evaluated in terms of changes from the reference point, which typically is defined at the status quo origin point, although there are circumstances under which the reference point might exist at a particular level of expectation or aspiration or be affected by social comparison processes. But basically change is what defines experiential outcomes. Changes are felt more strongly closer to the origin; obviously, adding $1,000 to $100 is experienced as a more dramatic shift than adding that same $1,000 to a pre-existing $1,000,000. In this way, it is possible to see how relative outcomes can become more important perceptually than absolute outcomes, especially if those relative outcomes represent a larger change from the earlier position than the absolute outcomes.

The second important characteristic produces the central theoretical prediction of Prospect Theory: individuals will exhibit risk aversion in the domain of gains, while demonstrating risk acceptance in the domain of losses. Domain can be difficult to operationalize in some contexts, but in reality domain refers to the environment or context in which a decision is rendered. For example, although individually defined, a domain of gains would reign after a major victory or success, when things are going well, or appear to be improving. Conversely, a domain of losses refers to the opposite situation, one which might prevail following a devastating defeat, disaster, or severe budgetary famine. When things are going well, people tend to be cautious, not wanting to lose or risk what they already have for uncertain gains. On the other hand, people who have little to lose are free to act in desperate ways to recoup their losses.

The third important characteristic of the value function is the relative steepness of the curve in the domain of losses. This characteristic of Prospect Theory is referred to as loss aversion. Simply put, losses hurt more than equal gains please. This loss-aversion phenomenon offers the most robust finding in any of the experimental literature on Prospect Theory. While there are clear evolutionary reasons why people might be more sensitive to loss than gain, because losses usually signal threats to survival in ways that gains do not, it also means that people are relatively more willing to take greater risks to prevent or undo losses than they would be to make gains.

The weighting function describes the way in which people make assessments about how to psychologically weight probability. Two important aspects of this function are apparent. First, the function does not behave in a predictable manner near the endpoints, that is, near certainty or impossibility. This is simply because people treat these realities as though they were much more important than probabilities in the mid-range of likelihood. This tendency is referred to as the certainty effect. In other words, people treat events that are nearly, but not absolutely certain, as though they were completely certain. It is easy to see how this tendency, especially over time, might get a decision maker into trouble if he believes that a particular event will absolutely happen, and then it does not. In particular, failure analysis depends on being able to predict contingencies when highly likely events might still fail or highly unlikely events might still occur. For example, the O-ring which failed in the explosion of the Challenger space shuttle had a low probability of failing, but, given how many O-rings were required to perform optimally for the shuttle to survive, a low probability of failing did not translate into the impossibility of failing.

The second important characteristic of the weighting function is that people tend to overweight low-probability events, while simultaneously underweighting medium- and high-probability events. This means that people give low-probability events more weight in decision making than they deserve, and give moderate- to high-probability events less importance than they deserve. For example, people who are scared to fly are overweighting a low-probability event such as a crash, relative to the much higher objective risk of having an automobile accident while driving on the road. Driving may feel safer at least in part because the driver has more control, but also in part because a lower percentage of car crashes are lethal than plane crashes. However, at least some of the fear of a plane crash derives from an overestimation of a low-probability event.[1] Similarly, the epidemics of obesity, diabetes, and heart disease in the United States result, at least in part, from people eating too much and exercising too little. The risk of heart disease, stroke, and eye or kidney failure is actually moderate to high for the majority of Americans, because the majority of Americans are now obese. And yet people do not change their lifestyles not only because doing so is hard and painful, but also because they are underestimating the likelihood that they personally will suffer the bad consequences of their destructive habits.

[1] Obviously, fear can also easily result from highly salient crashes, such as the very vivid images of the planes crashing into the World Trade Center in New York on September 11, 2001.

Kahneman and Tversky (1979, 1984) use the weighting function to explain such phenomena as the purchase of insurance and lottery tickets. These are instances where mass behavior contradicts Prospect Theory: people being cautious in a domain of losses in the former case and risk-seeking concerning gains in the latter example. But in both these cases, probabilities are very low; thus the predictions are assumed to be reversed as people are overweighting low-probability events because of the behavior described in the weighting function. Thus, although rare, when probabilities are low, it is possible to observe risk taking in gains, and risk aversion in losses.

Prospect Theory and Negotiation

Quattrone and Tversky (1988) argue that loss aversion presents the key factor in understanding negotiation from the perspective of Prospect Theory. They argue that loss aversion constitutes a major element in bargaining and negotiation because it hinders the prospect of reaching optimal resolutions by encouraging both parties in a conflict to resist making concessions. There are two aspects to this argument. First, loss aversion means that both parties to a dispute view their own concessions as losses, and these losses weigh more heavily than the benefits resulting from the other's concessions. In this way, because each negotiator will consider his own losses as being greater than those incurred by the opponent, it becomes easy for both sides to see themselves as having given up more, gained less, and been placed at a disadvantage relative to the other side. As Quattrone and Tversky (1988, p. 460) write: "In negotiating over missiles, for example, each superpower may sense a greater loss in security from the dismantling of its own missiles than it senses a gain in security from a comparable reduction made by the other side."

In a similar argument concerning conflict resolution, Kahneman and Tversky (1995, p. 482) argue again that "each country derives security from its own weapons and is threatened by those of the other side. Thus, missiles eliminated by the other side are evaluated as gains, and missiles one must give up are evaluated as losses, relative to the status quo." This occurs because people weight equal values differently depending on whether they represent gains or losses. Thus, each side might easily expect the other to give up more of its prized system, believing it constitutes the bigger threat, than it is willing to give up of its favorite weapon, arguing that it is not nearly as dangerous as that held by the opponent. Indeed, this problem of asymmetric evaluation is exacerbated by the strength and power of loss aversion, such that losses hold approximately twice the influence of gains. This means that each side will want the other to give up twice as much land, or twice as many weapons, in order to experience the bargain as fair. It is easy to see why such a starting point would make it very hard to achieve a successful negotiation resolution to a conflict, or a successful outcome to a trade or arms control negotiation. When both sides expect two times the concessions they are willing to offer themselves, intransigence in negotiation becomes a likely outcome.

The second component of this argument derives from the notion of concession aversion (Stillinger and Ross, 1991; Kahneman and Tversky, 1995) whereby the willingness of one side to offer a concession, such as a reduction in a particular kind of missile system, immediately makes the other side dismiss the importance of the concession. After all, the negotiating logic goes, if the other side is willing to give it, it can't be worth gaining anyway. In other words, the fact that one side offers a particular concession in and of itself renders the concession less valuable to the other side simply because the opponent offered it up first.

Jervis (1994) draws a further implication from the phenomenon of loss aversion. He argues that loss aversion grants states that are defending the status quo position a bargaining advantage to the extent that loss aversion is widespread. If leaders react differently to the prospect of making gains or taking losses, as Prospect Theory predicts they will, then those leaders will pay more and persevere longer when defending a loss than when attempting to make a gain. Thus, leaders should not take as great risks to change the status quo as to maintain it, with the result that leaders who are defending the status quo remain at a structural advantage to those who are trying to overturn it.

However, as Jervis (1994) notes, the flip side of this coin is that wars and conflicts are more likely to occur and escalate when each side thinks it is defending the relevant status quo. Obviously, oftentimes two sides do not share the same idea of what constitutes the appropriate status quo because of disputes about history. In the Middle East, both the Jews and the Palestinians claim first right to the land. In Northern Ireland, memories over land disputes which are over a thousand years old are re-enacted in parades every year as though the events happened just a few years ago. Indeed, wars should be even more likely if one or both sides believe that they will incur more severe losses if they do not fight than if they do. Japan before World War II presents an interesting example of this contingency. Jervis (1994) argues that this process can be exacerbated when each side infers greater hostility to the other than is the case. Thus, both adversaries remain likely to fight hard in order to ward off the bad outcome they expect from the opponent's wrath. Finally, if each side assumes that the other is seeking gains, because each believes the other to be more hostile and aggressive than it actually is (Jervis, 1978), then each will assume that the other side will not fight as hard as it will because it is defending the status quo, or fighting to prevent further losses. Problems arise when each side assumes the other to be in a domain of gains, when in fact both sides believe themselves to be acting in a domain of loss. When this happens, each side will expect the other to back down first, and intransigence or conflict can result.

Levy (1994) makes a similar argument about the impact of loss aversion on negotiation behavior. He argues that actors will be more susceptible to persuasion when they are attempting to make gains than when they are defending the status quo or attempting to recover past losses. In other words, coercion is most effective when trying to stop a leader from making gains than when trying to stop him from attempts to recover losses. Note that deterrence, which supports the status quo, is easier to undertake than compulsion, which requires trying to make another alter behavior (Jervis, 1994).

Milburn and Isaac (1995, p. 338) support the points made by Jervis and Levy when they argue that negotiations motivated by gain may happen more quickly and easily than those motivated by loss. It is easy to note, for example, that trade negotiations seem to take less time than negotiations over arms control or other security-based issues. Milburn and Isaac write that "negotiations in which the parties see the situation primarily as one in which they must avoid losses should prove more difficult for both parties and take longer than ones in which the parties expect to achieve gains. This is because of the unwillingness of either party to make concessions when they see the situation as one in which they must avoid losses. Concessions can look far less consequential when they are regarded as merely a price to achieve gains."

This was well illustrated in the real-life trade example of the United States and Japan's long-time negotiation over apples. The United States spent over 30 years negotiating with Japan over opening their markets to American apples. In spite of the fact that prospects for this market never exceeded an estimate of $15 million dollars a year, these discussions took place at the highest levels of government and eventually had to be ruled upon by the World Trade Organization. There is simply no adequate rational explanation for the United States' incurring such extreme costs for such a long time for a chance of such a small benefit. And yet, from the perspective of Prospect Theory, it makes perfect sense. Each side became driven by its own previous losses and went to greater and greater lengths to recoup those losses in the next round of discussions. Less attention was paid to ultimate prospective benefits than to the immediate prospect of recovering recent losses (Elms, 2004). Similar dynamics often drive militaries in war, of course, as new forces are deployed to justify and recover from previous losses, or as living men are sent into danger zones to retrieve their fallen comrades, risking their lives for limited, albeit importantly symbolic, gains.

Further experimental work has attempted to apply Prospect Theory to bargaining and negotiation situations. These cases have demonstrated the accuracy and relevance of Prospect Theory for understanding negotiation behavior and its subsequent outcomes as well.

Neale and Bazerman (1985) advocate for a Prospect Theory–based "judgmental" approach to negotiation. They argue that three aspects of this model are useful in thinking through negotiation behavior. First, they note that the framing of negotiation can create a critical foundation for subsequent negotiation. Based on the insights provided by Prospect Theory, they hypothesize that positively framed negotiators will be more successful and more willing to offer concessions than negatively framed negotiators. In their experimental work, Bazerman et al. (1985) found this to be true. This happens because a negotiator who adopts a negative frame becomes, in line with the predictions of Prospect Theory, more risk-seeking and thus less likely to reach a settlement by being more willing to walk out rather than compromise. Neale and Bazerman (1985) argue that one of the implications of their work also highlights the crucial importance of third-party players in helping adversaries to reframe their conflicts in more neutral or positive ways in order to increase the likelihood of reaching a resolution.

Consistent with this work, Carnevale and Mead (1990) found that mediators work harder to prevent loss than to make a gain. Further, Carnevale and Isen (1986) also demonstrated that positive affect increased the likelihood of reaching an integrative solution. In other words, happy people reach better agreements faster than people who adopt negative frames, or who have negative affect.

The second aspect of Neale and Bazerman's (1985) judgmental approach to negotiation relies on the importance of the availability heuristic (Tversky and Kahneman, 1973). The availability heuristic, along with two other notable heuristics, representativeness and anchoring, was outlined by Tversky and Kahneman as a rapid rule of thumb that helps people to reach quick and largely effective judgments about the frequency or likelihood of a particular outcome or event occurring. In availability, people are influenced by the ease with which they can imagine, reconstruct, or access certain categories from memory. In most instances, this strategy works, but it fails predictably to the extent that certain categories are made more available through salience. This happens, for example, when the environment makes certain people or events inordinately salient, as when the news consistently reports shark attacks. People then may assume that such attacks are in fact more frequent than they are in reality merely because the media makes such attacks quite salient for decision makers. This clearly occurs with threats as well; when the media raise constant concerns about the threat of terrorism, for example, people may come to believe it is much more likely than is objectively the case. The problem arises when what is most available from the media is not in fact closely correlated with what is objectively likely or frequent.

In Neale and Bazerman's (1985) argument, they claim that availability helps explain why negotiators are unable to reach resolution even when there is an objective zone of agreement. This is because many factors can potentially influence availability beside objective probability, including factors that enhance salience, such as information which is highly emotionally charged, vivid, or concrete. Personal information remains more vivid, for example, than abstract information (Borgida and Nisbett, 1977). What this means is that negotiators might mentally compare what will happen if they fail at a negotiation as opposed to walking away or allowing a third party to settle it, and the most vivid and accessible information available will be that which produces the most personally relevant, emotional images. For example, Neale (1984) found that manipulating the vividness of costs over different kinds of negotiation structures influenced both the process and outcome of the negotiation. Thus, for example, when negotiation costs are made salient, negotiators make fewer concessions and are less likely to reach a successful resolution. In international situations, when the costs of negotiations are compared with the costs of walking away, uncertainty is greater under the latter condition. The certainty effect might imply here that the certain costs of the negotiation would weigh more heavily than the uncertain costs of walking away. But, again, context matters in this situation. Certainly negotiators acting in a domain of losses are more likely to take the riskier choice when faced with such uncertainty and thus appear to be more likely in this scenario to walk away rather than negotiate to resolution.

Finally, Neale and Bazerman (1985) point to the impact of negotiator overconfidence on negotiation outcomes. Kahneman and Tversky (1995) similarly consider this factor destructive to constructive agreements. Neale and Bazerman (1985) argue that overconfidence can sabotage negotiations where there is a zone of agreement because negotiators who are confident in their judgment about the parameters of an offer are less likely to offer concessions that might in fact be necessary to achieve a negotiated settlement. Accurate assessment of one's own position and that of the other is essential for agreement to be reached, but this goal becomes impossible if one or both negotiators prove overconfident in their inaccurate judgments concerning the extent of overlap between contending parties or the extent to which the opposition might prove willing to make certain concessions. According to Wason (1968), overconfidence on the part of a negotiator results from that person's unwillingness to find information that might disconfirm his assessment of the situation.

Other authors have also investigated the impact of such factors as framing on negotiation outcomes. Fleishman (1988) examined the effect of framing on cooperation in a social dilemma environment. In his study, 170 subjects participated in simulated social dilemmas in groups of four or five. Decision frame was manipulated so that subjects were told they were either giving to, or taking from, a collective good. The notion here is that individuals would be risk-seeking when it comes to giving because giving entails a loss or a cost. Conversely, people should behave in risk-averse fashion when confronted with taking from social good, because such an action constitutes a gain. The hypothesis was that individuals would be more cooperative when the dilemma was framed in terms of taking rather than giving. In addition, social comparison was manipulated by telling subjects that other group members had either cooperated a lot, or cooperated only a little in the first trial. In this study, subjects conformed to the behavior of others when they were taking from a collective good, but acted against others when they were giving to a public good.

In another study examining the impact of framing on management dilemmas, McDaniel and Sistrunk (1991) set out to investigate the impact of framing and social comparison on rates of cooperation. In this study, 288 subjects were presented with two social dilemmas in a management context. As in the study above, one frame presented a problem of giving to a collective good, but the other framed a problem in terms of destroying an existing collective good. In each case, subjects were given manipulated information about the expectation that others would cooperate as well. Robust framing differences resulted. Subjects were more willing to give to a collective good than to take a loss in order to avoid the destruction of a public good. Once again, the asymmetry of gains and losses emerged. People were more willing to give to a collective good than to take a collective loss.

Conlon and Ross (1993) examined the effect of third-party intervention on negotiators and outcomes. They argue that their results are consistent with the explanations provided by Prospect Theory. In one experiment, 151 subjects participated in a simulated negotiation; in another, 211 subjects participated. In these experiments, participants were told that a third party was affiliated with their side, or with the other side. These third parties imposed settlements on the disputants in both studies. Their results showed that if the third party was expected to be associated with

the other side, outcome expectations were diminished within the opposing camp. Ironically, this increased the likelihood of reaching an agreement, by increasing the likelihood of the opponent making concessions and led to increased assessments of satisfaction with both the third party and the outcome, relative to participants who believed that the third party was associated with their side. On the other hand, the side which believed itself to have the third party on its side inevitably ended up disappointed when the third party made some concessions to the opposing side.

Conlon and Ross (1993) argue that these findings are consistent with Prospect Theory because each side evaluates outcomes relative to the reference point. In this study, each side's expectations about the outcome function as the reference point from which actual outcomes are evaluated. Thus, negotiators with different reference points will judge the outcome in different ways. When one negotiator believes the third party is on its side, it will expect a better outcome, just as the other negotiator will expect a worse outcome, since both sides expect the third party to side with their ally. However, when the third party shows some consideration for the opposing side, out of interest of fairness, fear of retaliation, or any other reason, the preferred side will be disappointed relative to previously high expectations, while the non-affiliated side will be pleased relative to initially low expectations. This finding raises the odd implication that third parties whom both sides perceive to be against them may in fact be able to achieve a better outcome, with greater satisfaction on both sides, than a mediator whom both sides trust, or one who is clearly biased in favor of only one side. This may be part of the reason why the United States has not proven the most successful arbiter in the Middle East crisis. Recently, conflicts between the United States and Israel, in particular, have emerged more frequently.

In further work on the importance of the reference point in integrative bargaining contexts, William Bottom (1990) argued that research on negative cognition showed that expected utility models demonstrated descriptive shortcomings. He claimed that Prospect Theory was able to account for several aspects of actual bargaining behavior, which Expected Utility models are not able to predict. In particular, he noted that framing presented a significant factor in conceptualizing the dispute, conflict, or problem. Further, framing defines the crucial place of respective reference points, which, in turn, helps determine satisfaction with outcomes. And finally, framing also serves to encode possible options and outcomes as deviations from the reference points in ways that highlight expectations and opportunities for resolution. In particular, Bottom (1990) argues that Prospect Theory proves useful in establishing the importance of the relationship between framing and aspiration or expectation level in determining bargaining outcomes. This relationship provides the conceptual link that is important for developing a more sophisticated and accurate theory of bargaining.

Similarly, Schweitzer and DeChurch (2001) attempted to link frames in negotiations by examining the impact of gains, losses, and conflict from an adaptive perspective. They argue that two different concepts of negotiation influence bargaining behavior and negotiated outcomes. The first represents a reference frame that perceives outcomes relative to some kind of reference point. The second operates on the basis of a conflict frame that offers a multi-dimensional orientation to conflict.

In their experiment, 231 students were presented with a gain or a loss version of a conflict situation. Subjects with a loss frame adopted a conflict frame. These participants were more oriented toward winning the conflict and more task-oriented than those in the gains condition, who adopted the alternate reference frame.

In other work, Ohtsubo and Kameda (1998) examined the equality heuristic, whereby people prefer outcomes to be fair and equal, in the context of distributive bargaining. These authors predicted that the equality heuristic would have a smaller effect when subjects were negotiating over cost sharing (losses) than over benefit sharing (gains). In two experiments involving 100 male subjects, the experimenters found that deviations from equal allocations were indeed greater in the context of cost sharing than benefit sharing. Ohtsubo and Kameda (1998) argue that negotiators in the loss domain will remain tougher and, in particular, they will persist longer than their benefit-sharing colleagues. In these experiments, the underlying structure of the problem remained the same, but subjects who were placed at a disadvantage fought harder and longer to correct the imbalance in the sharing-costs context than in the sharing-profits one. The authors suggest that the equality heuristic provides an anchor in most bargaining situations. Under conditions of uncertainty, adjustment from that anchor may be insufficient, and in those circumstances, framing can influence negotiation outcomes in the decisive, predictable ways described.

Further Applications of Prospect Theory to Negotiation

So how can Prospect Theory inform negotiators about improving strategies for bargaining successfully? There are at least four important insights that can be derived from Prospect Theory to increase chances of reaching a successful agreement.

First, negotiators and their constituents need to remember that loss aversion plays a powerful role in any kind of negotiated settlement. People will not want to sacrifice to the other side as much as they want to obtain from the other side. Costs borne by one side will be weighed more heavily than security or other benefits that are received from the other side. This means that even when settlement plans offer an objectively fair deal, it will be easy for one or both sides to feel as if they received the worse part of the deal and to feel taken advantage of in the course of the negotiation. This perception may make each side less likely to want to negotiate future deals with their opponent if they feel that negotiating was not successful in the past. Here again, important intangibles such as establishing goodwill and trust can easily be lost under such circumstances.

Ronald Reagan, for example, firmly believed that the Soviets had taken advantage of the United States in the Strategic Arms Limitations Talks I and II (Skinner et al., 2001). When he came to office, he was determined not to have the United States fall prey to Soviet deception and manipulation during the course of any future negotiations over arms reductions. This led to long deadlock in United States arms control policy, where little substantive progress was made because of American persistence in demanding inequitable reductions in its favor to compensate for

past perceived injustices that had ostensibly favored the Soviets in previous treaties (Talbott, 1985; McDermott, 2002).

Kahneman and Tversky (1995) have identified an even more challenging form of loss aversion which they label enhanced loss aversion. This refers to a form of loss aversion that is associated with some kind of moral outrage or infringement. When legitimate rights and entitlements are violated in such a way that it results in loss being incurred, the effect of loss aversion is enhanced and people consider the loss to be even more unacceptable. In other words, losses that result from someone behaving unfairly or unjustly increase the intensity of loss aversion over losses that result from normal circumstances, honest mistakes, or the legitimate action of others. Therefore, negotiators who are perceived to be acting unfairly, or even third-party mediators who are seen to be acting in a biased or unjust manner, will have more to overcome in trying to convince the other side that the losses they are expected to swallow will be worth the benefits they will receive.

There are potential strategies to combat this tendency to overweight one's own losses while simultaneously undervaluing the other's concessions. One way in which negotiators might try to accomplish this goal would be to present the adversary with a menu of choices including various options and areas where the first side is willing to compromise. The second side then chooses from among the options. In this way, it becomes much more difficult for the second party to reduce the value of the other side's concession because it chooses the concession that it itself values most. This might also work if the second party presented a list of concessions that it would like and allowed the first to choose which of those concessions it might be willing to accommodate. Again, this would make it more difficult for either party to devalue the sacrifices made by one side for the other since each side becomes involved in the specifics of each concession transaction (Stillinger and Ross, 1991).

A second way in which Prospect Theory can influence negotiation involves the use of what politicians would call spin, but what is really a form of strategic framing. Since the original experiments demonstrated that alternate forms of framing can influence the subjective sense of attractiveness or appeal of different options, framing issues or positions in various ways will also impact how persuasive those options or arguments appear to be. In other words, in seeking ways to negotiate around the inevitable costs that are associated with successful mutual agreements, bargainers might be aided by reconceptualizing the costs and benefits of the agreement for each side to emphasize benefits and not costs, or to see costs as the price or payment for benefits. As Kahneman and Tversky (1995, p. 484) note, "The most effective concessions you can make are those that reduce or eliminate your opponent's losses; the least effective concessions are those that improve an attribute in which the other side is already 'in the gains'."

For example, in a situation like the conflict in the Middle East, most observers argue that the final deal will involve some transfer of land from the Israelis to the Palestinians in return for peace. Obviously, part of the internecine nature of the fighting here results from a previous failure to establish intangibles like trust and goodwill. In this case, successful negotiators need to find a way to eliminate or reconceptualize land loss for the Israelis, say, by emphasizing that peace will lower

the costs of lives lost. This kind of argument is likely to prove more effective in persuading leaders than those that stress something more positive, like the economic benefits that might derive from peace. Such benefits may be valued but add to an area where Israel already has considerable strength. This loss-saving strategy will also undoubtedly provide more powerful persuasion than an argument that stresses the price of losses, like the costs of land, in order to achieve peace.

Pruitt (1983) also argued that it is easier and less costly to try to reduce one side's costs and losses than to try to offset them by offering more benefits. This relates, again, to the asymmetric evaluation of the relative impact of gains and losses. His cost-cutting strategy is designed to find ways to reduce the cost of agreement to the other side, usually by trying to reduce the costs or losses associated with achieving agreement. These strategies are based on the loss-aversion insight that losses are evaluated on the steep part of the curve, where impact is greater, while gains are judged on the basis of small additions to already sufficient gains. Finding ways to reduce costs helps the opponent to shift the basis for evaluation from one where costs hurt and gains don't really help, to one where there are few costs and positive gains can be expected in areas where the person or state is not already abundantly endowed.

The third insight that a Prospect Theory approach offers relates to the certainty effect (Kahneman and Tversky, 1979). The certainty effect is demonstrated through the weighting function in Prospect Theory. As noted, this function shows that people tend to overweight low-probability events while simultaneously underweighting moderate- and high-probability events. A second feature evidenced by this function is that it does not behave well at the endpoints of impossibility and certainty, as noted earlier. One of the reasons for this second effect lies in the certainty effect as well, whereby individuals appear to attach special meaning and importance to events that are judged to be certain or impossible; in fact, people tend to overweight such certain events relative to uncertain outcomes. This can be the case even if the certain outcome is merely highly likely. Because of this, there are many instances where events that are highly likely are treated as certain although they are not, and events that are highly unlikely are treated as impossible, which may also not be the case. The certainty effect appears to exert even greater influence in situations characterized by a great deal of uncertainty or ambiguity, for instance, those that predominate in international relations.

Kahneman and Tversky (1995) argue that the certainty effect helps explain why some uncertain outcomes that might result from successful negotiation, like the generation of goodwill between adversaries, might remain undervalued precisely because they are uncertain, and thus valued less than certain outcomes, which can be objectively measured, like numbers of weapons systems. The one case where this phenomenon of underweighting uncertain events seems not to apply lies in the arena of contingently certain outcomes, such as insurance. Clearly, people will pay huge amounts of money for certain coverage against an uncertain set of events or contingencies.

Contingently certain outcomes matter in negotiation situations in at least two ways. First, when parties impose particular penalties, sanctions, or costs on one

another for failure to comply with the provisions of an agreement, such contingencies should loom large in the decision making of the relevant parties. This will be true, however, only to the extent that such sanctions are contingently certain or fully enforceable (Kahneman and Tversky, 1995). In other words, if a country violates the agreement, it will receive certain punishment. In cases where punishment is not swift and sure, or where there are holes in the sanctioning enforcement, as in the case of the sanctions regime imposed on Iraq for failure to comply with United Nations inspections of their production facilities for weapons of mass destruction, then contingencies are not certain, and the losses associated with them will not loom as large for the belligerent leader.

Second, contingent certainty is important for cases where negotiations over assets, like money or territory, will only prove significant if conflict breaks out again between the warring parties (Kahneman and Tversky, 1995). Strategic territory, for example, functions in this way. When one side holds a particularly important strategic asset, it may have a decisive advantage should war break out. However, holding the territory to begin with increases the likelihood of war overall. For example, many instances of this tendency exist in the current crisis in the Middle East. Israel may feel more secure retaining military control over the West Bank and Gaza Strip, but such control is likely to increase the likelihood of Palestinian suicide bombers in Israel proper who take high risks because they have nothing left to lose. In a domain of loss where their houses have been bulldozed and their family members have been killed, suicide becomes a more reasonable response than it might otherwise appear. However, if Israel were to permanently cede control over these areas, it might be at a strategic disadvantage should a broader war break out involving Jordan or Syria. From the perspective of Prospect Theory and the certainty effect, keeping territory that will certainly matter under the contingency of war will weigh more heavily in the minds of Israeli decision makers than the uncertain decrease in the risk of terrorism and violence if the territory were handed over to the Palestinian Authority. It is easy to imagine other territorial examples of this same phenomenon in history; Northern Ireland, for example, presents another obvious illustration of this same phenomenon.

The key insight from the certainty effect, however, lies in the way in which this tendency encourages people to place less value on uncertain outcomes, including those that may be harder to measure, such as the goodwill or trust that might build from a successful negotiation, than on certain outcomes that, while easier to measure, may not prove as valuable for the long-term stability of the relationship.

The significance of framing, loss aversion, and the certainty effect on negotiation can hardly be overstated. Agreements that could not have been reached if the choices were framed in a certain way may have a chance if the negotiators are able to successfully reframe the participants' conceptualization of the problem and the solution. This is especially the case if mediators can manage to cut the costs of participating in the agreement for the opponent, reconceptualizing them as payments for gains, or emphasize gains in areas of weakness. In particular, framing issues in such a way that losses are reformulated as gains in a different domain may prove the most persuasive and beneficial. Anyone familiar with faculty hires recalls situations

where certain members forgo their first choice in one area to obtain their first choice in their own subfield; the less significant loss balances the more important gain.

Loss aversion drives such phenomena as concession aversion. Individuals don't tend to value someone else's sacrifices on their behalf as much as they value their own. Studies which demonstrate that both spouses claim to do more than half the household chores provide a simple illustration of this point. When negotiators can create an environment where both sides participate in the choice of concession, each side may find a way to value its benefits more highly than it might otherwise. In addition, each side may find it needs to give up only things that it is willing to concede and not things it feels forced into giving up, thus threatening the likelihood of future negotiations if both sides feel disadvantaged by the deal.

The certainty effect informs bargainers that people value what is sure and certain over things that are vague, unclear, ambiguous, or uncertain. Couching agreements in terms of what is certain may help negotiators to reach agreements more quickly and easily. In particular, if mediators can find a way to create certainty around uncertain outcomes like goodwill, perhaps by instituting measures showing how goodwill might actually reduce future losses or costs, they may find that agreements may proceed more quickly, efficiently, and successfully.

The fourth area of Prospect Theory worth discussion relates to the difference between individual and group interaction and negotiation. Admittedly, Prospect Theory presents a theory of individual decision making under conditions of risk. The theory does not make specific predictions about what happens when individuals interact with each other or in a group. There is some experimental evidence to indicate that individuals in a group act in line with the predictions of Prospect Theory, but these studies suggest more of an additive effect rather than a fundamentally new way of analyzing group interaction. Overall, Tversky for one was not particularly interested in group behavior; he was more concerned with individual judgment and decision-making processes. Thus, while it is theoretically possible to extend Prospect Theory into the arena of group interactions, this has not been done yet, either experimentally or mathematically.

Thus, Prospect Theory's insight and predictions are limited to the actions of particular individuals, leaders, and negotiators. In this way, Prospect Theory cannot generate the kinds of predictions that Game Theory might in analyzing the process of strategic interaction between two or more players. However, this does not render Prospect Theory useless in terms of providing insights about bargaining and negotiating behavior. For one thing, Prospect Theory can, and does, offer the insights noted earlier in this chapter concerning the actions of individual leaders and negotiators, including the importance of framing effects, loss aversion, concession aversion, overconfidence, and certainty effects. These effects are likely to affect individual negotiators. To the extent that an individual can become aware of these phenomena, he or she can try to consciously overcome particular biases that might inadvertently lead to suboptimal outcomes. Moreover, for purposes of strategic advantage, if one side is more aware of the biases likely to affect the other side, the first side can garner decided superiority by using these biases for its own advancement.

Conclusions

This chapter has attempted to outline a Prospect Theory approach to negotiation behavior. The first section briefly outlined some alternative approaches to understanding negotiation. Second, this chapter discussed some of the main theoretical findings and implications of Prospect Theory itself. Various Prospect Theory approaches to negotiation behavior that have been investigated in the past were reviewed. The final section noted the central importance of framing effects, loss aversion, and the certainty effect in attempting to understand barriers to settlement and improve strategies for intervention and improved negotiation.

Neale and Bazerman (1985) argue that there are three ways to help reduce the impact of the kind of cognitive biases implicit in the Prospect Theory orientation to negotiation. They argue first that negotiators need to receive clear and unambiguous evaluations of their performance. Second, participants should enhance their selection criteria for negotiators. In particular, they cite evidence showing that some people are more accurate in their interpersonal skills than others (Davis, 1981) and that individuals who excel in their perspective-taking abilities or empathic skills, improved their probability of eliciting concessions from disputants, thus increasing the likelihood of achieving a successful resolution. Last, the authors advocate for negotiators to be trained in decisional biases. In this regard, they point to some evidence that repeated experience in negotiation can improve performance.

The authors also note that these features are often not present in negotiation contexts. In particular, feedback only rarely appears to be clear and unambiguous; rather, feedback is more likely to be ambiguous, misleading, or difficult to understand (Einhorn and Hogarth, 1978; Einhorn, 1980). Further, incorrect or inadequate feedback may even reinforce some of the more disruptive aspects of the operation of these cognitive biases.

The challenge for future applications of Prospect Theory to bargaining and negotiation involves devising systematic ways to use these various cognitive biases advantageously or to overcome them. For example, individuals can present the same choice framed in different ways; such transparency can help decision makers note the underlying similarity in real options, even if the superficial characterizations appear to pull in different directions. Further, framing can be employed to the advantage of sophisticated negotiators: 1) by offering them strategies to influence and persuade the various parties concerning the potential benefits of an agreement simply by reformulating various aspects of the offer in ways that emphasize gains over losses; or 2) by helping them appreciate how they might cut costs in one area by agreeing to certain contingencies in another area.

Second, the power of loss aversion can be harnessed by successful negotiators who work to frame agreements in terms of the reduction of losses or costs that will result from the implementation of a given proposal. Further, concessions might be reframed as payments for benefits rather than unilateral sacrifices. Advocacy of swift and sure penalties for infringements of agreements might also enhance participants' compliance and satisfaction with particular regimes. Intangibles like trust and goodwill lead to more and better agreements over time in this way.

Finally, certainty effects can be overcome by successful bargainers who recognize how challenging it can be for participants to accept a sure loss for an uncertain benefit. To the extent that costs can be rendered uncertain and benefits made more certain, negotiations might prove more successful. Part of the goal here would be to find a way to make intangibles like goodwill into concrete, salient, and certain outcome benefits that will derive from successful negotiations.

In any negotiation, individuals who want agreement must be motivated to compromise something of value in order to receive something else of value in return. The relative success of the negotiation rests not only on how much overlap exists in the objectives of both parties, but also on how these issues and contingencies are framed, evaluated, and considered. Some overlap must exist for a successful negotiation to take place. And some effective persuasion on the part of various negotiators must take place as well. But the knowledge and use of the insights offered by Prospect Theory and its implications increase the likelihood that effective strategies for resolution can be achieved as well.

Prospect Theory provides a general theory of decision making under conditions of risk. These ideas can be applied within a variety of issue areas, including bargaining and negotiation. Prospect Theory illuminates some of the cognitive processes that take place within individual leaders and decision makers when approaching risky decisions. And such insights begin to offer opportunities to improve one's own bargaining strategies or exploit another's negotiating style to achieve the most advantageous outcome.

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Risk and Preventive Negotiations

I. William Zartman

Introduction

Preventive negotiation is associated with terms such as farsightedness and vision, and so inherently involves uncertainties. Risk is used here to refer to dangerous uncertainty: a shorthand summary for the definition used in the Introduction as "the expectation of negative consequences of current or potential, future phenomena or events."[1] It refers to losses and so is the negative side of opportunity, which is the positive side of uncertainty and refers to gains. Probably chance, as commonly used, spans both. You run or take a chance or risk, but you seize a chance or opportunity: all three are uncertainties with different values. But risk is not just cost, loss, or expected damage;[2] it is uncertain damage, the combination of loss and uncertainty. Indeed, risk depends on uncertainty, the replacement of *certainty of no damage* by *no certainty of no damage*. However, preventive negotiations do not just have a risk aspect; among other things, risk is their subject.

The success of preventive negotiation depends on a clear identification of negative uncertainties that may never materialize to confirm its wisdom should the policy be successful (Zartman, 2001). Thus, preventive efforts have two targets: prevention

I. William Zartman
School of Advanced International Studies, The Johns Hopkins University, Baltimore, Maryland, USA, e-mail: zartman@jhu.edu

[1] There is an enormous debate among students of risk over the meaning and definition of the word risk; a leading authority on the subject told this project that he advised not using the word. While the specialists continue their debate, we will get on with the business of analyzing our topic, using the working definition of "dangerous uncertainty" within the context of the elements presented in the opening chapter; cf "risk = hazard × exposure" (Anastas and Warner, 1998). This is consistent with commonly used characterizations by specialists, which include the elements of hazard, probability, and subject; see Stern and Fineberg (1996, p. 215).

[2] Preventive negotiations, of course, can also deal with certain danger, although this chapter does not; see Zartman (2001).

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of the danger,[3] and prevention of the danger's negative effects. Preventive negotiations to handle famine can focus on either the prevention of drought or the prevention of food shortages during droughts (or both). Similar efforts to handle the negative effects if the uncertainties cannot be eliminated, despite attempts at prevention, may be termed preparative negotiations;[4] when the uncertainty involves anthropogenic as opposed to natural disasters, such efforts may well have a successful deterrent effect and so be preventive as well. The United Nations was a preventive effort with regard to World War III; the North Atlantic Treaty Organization (NATO) and the Warsaw Pact constituted a preparative, deterrent action with regard to the same danger.[5] Unlike humans, droughts, hurricanes, and global warming cannot be prevented through deterrence.

Early awareness is the term that preventivists use to encompass perception, communication, and assessment of uncertainties—elements that constitute the key to appropriate preventive action. Entrapment is the term used to refer to the consequences of risk. Management strategies include regimes, measures to reduce uncertainty, measures to increase trust, and measures to prepare in the absence of prevention. But occasionally, parties prefer to run specific risks rather than manage them. Negotiation, however, is a cooperative activity, and therefore these strategic goals have to be cooperativized. Negotiating parties have two cooperative strategies from which to choose: either reduce the element of uncertainty and deal directly with the danger by the normal use of negotiation over the stakes involved, or focus on the uncertainty and negotiate methods to deal with it.

Communication: Awareness

In any negotiation, diagnosis is the first stage.[6] In preventive negotiations, diagnosis begins with an awareness that there is something to prevent, or—to take it apart—a risk of something and a chance to prevent it. The first step in diagnosis is to identify which of two types of preventable danger is involved: a danger presented by one of the negotiating parties against another or a danger presented by a source external to the negotiating parties.

A conflict between parties, also known as a distribution or coordination conflict, is one where the incompatibilities between positions or demands send each

[3] The danger can also be subdivided, for example, into the danger itself (e.g., nuclear waste), the probability of its occurring (e.g., escaping radiation), and the probability of exposure to it (e.g., siting in environmentally sensitive areas); cf. Poliakoff et al. (2002).

[4] The wording is tricky: such negotiations are not designed to prepare but to prepare for the negative effects, although in preparing for they may in fact prepare. This was of course the debate between NATO and the Warsaw Pact.

[5] On deterrence see Schelling (1960, 1966); Morgan (1986, 2005).

[6] The other two are formulation and specification of details (Zartman and Berman, 1982; Hopmann, 1996). On the importance of diagnosis in dealing with risk, see Stern and Fineberg (1996), passim, and especially pp. 7f and 137–150.

party searching for the means to prevail over the other. The risks involved are actor-related. Parties may negotiate preventively to reduce the cost of continuing the conflict (conflict management) or to resolve the issue without violence (conflict resolution) before the conflict escalates into something more dangerous. The early challenge is to keep the parties satisfied in the pursuit of their concerns without impinging on each other; the challenge in the more immediate phase of prevention becomes one of working out ways to achieve as much of the goals as possible, using the various means of concession, compensation, and reframing that are the subject of negotiation analysis, before the search for the means to prevail overcomes the possibility of a common agreement (Hopmann, 1996; Pruitt and Carnevale, 1993; Zartman and Berman, 1982; Walton and McKersie, 1965). Here the urgency of prevention depends on the cost of the uncertain danger compared to the cost of its prevention.

The other type of conflict is against either nature or an external enemy, where the parties face a common external threat and the risks involved are issue-related. Such conflicts generally involve public goods or bads (externalities). Basically, the parties should cooperate against the danger, but their degree of cooperation will depend on the degree of danger (loss) to each, the degree of benefit (gain), and the cost of cooperation (transactional loss) required (Taylor, 1987). Here the urgency of prevention depends on the distant costs of the uncertain danger compared to the present costs (and benefits) of prevention.

These two types are conceptually different but they may also overlap. Escalation may take off on its own—a process referred to as intransitive escalation—even though the conflict is between two parties, whereas two parties may escalate a conflict between them—referred to as transitive escalation—even though they are primarily concerned with confronting an external enemy (Smoke, 1977; Zartman and Faure, 2002). The following discussion will apply to both sources of conflict and danger, with specific reference being made when comments are relevant to only one type.

Warnings abound about risks to prevent, but for a host of identifiable reasons, they are not perceived, communicated, and assessed. One reason is the *busy fireman effect*. The normal bureaucratic organization is not set up to look for uncertain problems in the future. The common response to news of time-distant smoke is, "Don't bother me; can't you see I'm busy putting out fires." The United States and the European Community ignored the risk of Yugoslav disintegration because they were fixating on the Soviet-Russian and German problems at the time (Woodward, 1995).[7]

The opposite reason is the *sleeping dogs effect*. Particularly in cases of anthropogenic dangers, it is often though best not to stir up things that show no signs of stirring on their own for the moment. The argument against declaring a Year of African Boundary Demarcation by the Organization of African Unity/African Union (OAU/AU) to deal with the risk of boundary wars is that most undemarcated

[7] Actually, Yugoslavia presented a dangerous certainty to many people at the time.

boundaries are untroubled at the moment and that an effective preventive measure might introduce undiscovered problems (Nordquist, 2000).

A third reason for ignoring warnings is the *free viewer effect*, the other side of the free rider problem. The viewer claims that the danger is someone else's problem and will pass him by, whereas the rider claims that the danger calls for someone else's solution from which he will benefit. Free riders enjoy a collective good, whereas free viewers feel untouched by a collective bad. While some developing countries have acted as free riders regarding the risk of global warming, as seen in the protocols to the Climate Change Convention, the United States is currently adopting a position of free viewer toward the "alleged problem."

A fourth reason is the *false wolf effect*. The most important problem in early warnings is the uncertainty of their predictions—uncertain warnings of uncertain events. The most sophisticated attempts at solid predictions of future disasters have come up with antecedents but not predictors (Esty et al., 1995). It is a legitimate objection to point out that not all tropical storms become hurricanes and that populations evacuated from their summer vacations for a hurricane that does not come to pass are mighty unhappy.[8] The *New York Times* correspondent C. S. Sulzberger became famous and then tiresome in his calls for attention to the risk of the Shah's overthrow in Iran, while by the late 1970s the Iran experts were ignoring the possibility of an Islamic revolution and focusing on internal Iranian politics instead (Zonis, 1972; Bill, 1972). Warning fatigue takes its toll.

A reverse version of the same reaction is the *three monkeys effect*. People tend not to want to hear—or see or speak of—bad news; it is not only disquieting but, if taken seriously, would require some costly measures of prevention or preparation. Much of the negative or doubting reaction to global warning falls in this category, with lots of assorted alternative explanations to cover what is known.

Another reason is the *sunk cost effect*. Parties sink into entrapment for many reasons (Meerts, 2003). They may well recognize the validity of the warning but, because of their earlier neglect of the problem, deny the new evidence, lest their responsibility be exposed. They put further denial efforts into covering up the problem, which will demand further denials and cover-ups in the subsequent round. European Union (EU) officials faced with the exposure of corruption in the late 1990s denied the problem rather than fixing it, thus ensuring that the problem would be larger when the next round of revelations came around, as it was. A related reaction is reinforcement, in which not denial but persistence in an inappropriate direction is the response: another version of entrapment. Here the warning is heard but it provokes a continued or exaggerated wrong action. Warned by George Washington and others of the Indian forest tactics in the French and Indian War, General Braddock reinforced his red-coated phalanx, making them even better targets for the ambush.

Another effect is the *hyperbolic discount function* in intertemporal choice (Laibson, 1997). Prospect theory refers to this as the *certainty effect*, in which things unlikely to occur are fully discounted and things likely to occur are counted

[8] As happened in the summer of 2000 in North Carolina.

as certain, so that risk is perceptionally reduced, as noted by McDermott in this volume. Additional psychological effects could also be enumerated.

Finally, a ninth reason is simply that of *scientific uncertainty*. Scientists and other knowledge specialists are professionally wary, and the greater their knowledge and specialization, the greater their reluctance to make predictions with assurance. Policymakers and other knowledge consumers often mistake such scientific skepticism for evidential weakness, and so find support for inaction.

These reasons, many of them reasonable, if not right, stand in the way of effective early awareness of the inherently risky subjects of preventive negotiation. The antidotes are all straightforward, the opposite of the causes, and hence more within the reach of exhortation than of analysis: do not be a busy fireman, do not let sleeping dogs lie, do not be a free viewer, do not mistake previous policy protection for effective policy, do not hyperbolically discount or overcertify, do not mistake skepticism for inconclusiveness. Among these, the fireman's problem requires changes in bureaucratic modus operandi and organization, to encourage long-range thinking and internal receptiveness (Atwood, 2000). This runs counter to normal bureaucratic impulses and must be given explicit instruction and protection if it is to be effective, much as whistleblowing needs to be handled with special care.

The problem of false wolves is more seriously an analytical concern, the subject of much purported scientific discrimination that still remains inconclusive (Baker and Weller, 1998; Verstegen, 1999). It probably always will remain so because of the element of human choice and error involved, especially in anthropogenic risk, but the debate on the nature of scientific proof means that even in the case of natural disasters, the problem of uncertainty will still remain an inherent part of risk. This problem has practical implications for entrapment as a result.

Consequences: Entrapment

Entrapment is an escalatory process of engagement in which the parties faced with risk increase their investment in order to justify or cover sunk costs (Brockner and Rubin, 1985; Meerts, 2003). It is the product of dangerous uncertainty, as the parties do not know how much effort is required to cover the challenge and therefore keep adding on additional costs when the original effort proves inadequate. There are two types of entrapment in preventive negotiations: positive and negative. Positive entrapment is the type commonly referred to, in which the problem continues to grow faster than the efforts to control it and therefore attracts increasing and unsuccessful involvement. Had the magnitude of the problem or counter-effort been known ahead of time, the party would either not have engaged or have engaged adequately from the start. This is the war of attrition effect, which entraps parties into an objectively unnecessarily long conflict because of their uncertainty over each other's capabilities and hence over their chances of losing.[9] As the risk inherent in preventive

[9] As well noted by Laitin (1999). However, the uncertainty factor has been overused in civil wars, where calculations on the rebel ("revolutionary") side tend to be absolute rather than relative: "Even

negotiation creates uncertainty about appropriate measures, countermeasures run the danger of initial inadequacy and hence of error in the initial trade-off calculation between the present costs of prevention and the future costs of calamity. Because the danger is uncertain, minimal and halfway measures are employed, which then prove inadequate if/when the uncertainty is reduced by the approach of the danger. As long as this uncertainty is present, so too is the danger of entrapment.

Macedonian officials feared entrapment in their original efforts to head off divisive Albanian nationalism by making their original concessions for guaranteed participation in government in the early 1990s; when proven correct, they again feared that further concessions in 2001 would merely prepare for Albanian nationalist secession—this in the face of the argument by preventivists that autonomy measures and recognition of cultural (including linguistic) identity were necessary for the very purpose of heading off secessionist pressures. The August 2001 agreement provided the second round of concessions.

Some French officials negotiating with Tunisian nationalist leader Habib Bourguiba in the mid-1950s feared that autonomy would merely be a stepping stone to independence, whereas the government of Pierre Mendès-France felt that autonomy would lessen tensions and allow the government to concentrate on the Algerian problem. Both were correct, when the additional round of entrapment brought on by Tunisian independence in March 1956 served as a stepping stone to Algerian independence, despite increased French efforts, six years and many lives later.

Some Israeli leaders fear that the independence of the occupied territories of the West Bank and Gaza will merely serve as a platform for demands for a Palestinian state to cover all the former mandate territory. As a result, the Rabin government, in the Oslo negotiations in 1993, made an explicit Palestinian acceptance of the existence of Israel part of the path to the creation of a Palestinian state, whereas the Sharon government took repressive measures against Palestinian nationalists, thus increasing their pressure against any recognition of a state of Israel.

The overcommitment of British Prime Minister Anthony Eden to his military advisors in the preparations for the invasion of Suez in 1956, during discussions regarding a diplomatic solution to the problem posed by the nationalization of the Suez Canal, is another example of entrapment that failed as a preventive effort, and it cost Eden his job.

While these are perhaps unusual examples to cite in connection with entrapment, they clearly illustrate the risks inherent in both accommodative and repressive measures of preventive negotiations. They all point to the lesson that to avoid positive entrapment, parties should make outcomes more certain, that is, assure their finality

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if occupation continues for 500 years, we will not change," said Abu-Alaa to Clinton at Camp David (NY Times, 26 July 2001, A13), whereas Avashai Margalit said of Sharon, "He thinks it's a contest of character and the side that shows more determination will win. He wants to beat the Palestinians or show Arafat's people there's no way out for them." (*Washington Post*, 27 August 2001, A11). This difference in turn reflects the conditions of power asymmetry, where the weaker party equalizes the relationship with commitment (Zartman, 1995). For a discussion of asymmetry, see Zartman and Rubin (2000). On the war of attrition, see Maynard Smith (1974, 1982) and Hammerstein and Parker (1982).

so as to prevent conclusively the danger of entrapment. Such preventive guarantees can be explicit commitments to go no further, mechanisms to handle future demands and problems, sanctions against revival of issues, and reversals of concessions if escalation continues. But a glance at the cases cited shows that, in all of them, one of the parties was counting on entrapment of the other as its strategy. Thus, uncertainty remains an element of the conflict and its continuation, overcoming cooperation efforts, and conflict prevention.

But there is another type of entrapment inherent in preventive negotiation and not usually considered in discussions of sunk costs. Negative entrapment refers to a situation where costs are incurred but the danger never materializes or, in an ironic twist, does materialize but as an unplanned reaction against the preventive measures. It is the hurricane warning that necessitates an evacuation but does not produce a hurricane, as alluded to above, or the defensive mobilization that provokes a hitherto unplanned attack. Prevention when—as it turns out—there is no problem entails an unnecessary cost. This is the claim of some in the global warming debate, the boundary demarcation discussions, and many of the ethnic rights disputes. The expensive construction of bomb shelters in preparation for a possible nuclear war was a preparative measure of sunk costs, although the negotiations were limited to the policy discussions within the U.S. government. The possibility of sinking costs into the prevention of a non-existent danger is a matter of negative entrapment caused by the element of uncertainty involved in the purported danger.

Similarly, sinking costs into preventing a danger in which preventive measures actually reduce uncertainty (i.e., increase the certainty of the danger) is the nature of a self-proving hypothesis, most notably seen in the security dilemma effect basic to international relations and more recently applied to ethnic conflict (Jervis, 1978; Posen, 1993; Snyder and Jervis, 1999). Parties facing the fear or risk of unfriendly measures from another take measures to increase their security, thus increasing the insecurity of the other, which in turn takes countermeasures to increase its own security, thus further decreasing the insecurity (i.e., increasing the certainty of the danger) of the first party, and so on. Under this form of entrapment, it is difficult to distinguish between preventive and preparative measures, and it is of course difficult to assert whether the initial risk was high or low. Israel in October 1973 refused to mobilize despite uncertain signals of an Egyptian attack, lest the mobilization bring an unnecessary cost and raise the chances of attack, or alternatively appear to justify it, even though by that time it was, in fact, absolutely certain (Parker, 2000).

Entrapment, both negative and positive, emphasizes that the presence of risk is likely to result in inadequacy of responses because the parties are responding to the uncertainty rather than to the danger. By responding to the probability of a danger, the parties produce measures that are necessarily insufficient in terms of preventing the danger itself if/when it appears. Yet an initial response with adequate measures would lead to negative entrapment in some of the cases exhibiting a degree of uncertainty. Hence there is a need to consider strategies and arrangements for handling and managing risk in preventive negotiations.

Control: Management

The common goal of risk management strategies is, first, to reduce uncertainty so that, second, the danger itself can be confronted—prevented or prepared for—with certainty. No strategy is completely successful, in the sense that uncertainty may be reduced but never removed, which is why one talks of risk management and not of risk elimination. The field of preventive negotiations is as broad as the types of uncertain dangers to prevent and to prepare for. The methods of management vary in consequence, but some major ones can be presented, without any claim of comprehensiveness.

Dangerous uncertainties dealt with generically, by issue area, involve the establishment of regimes, or rules, principles, norms, and procedures that reduce the transactions costs of problem solving. By establishing standards of behavior as a basis for firm expectations on the way that types of problems will be handled as they arise, regimes reduce the risk inherent in the occurrence of specific cases, which otherwise would have to be dealt with idiosyncratically or in an ad hoc manner on a case by case basis (Krasner, 1983; Hasenclever et al., 1997).

But regimes are not law, only soft guidelines for handling uncertainty. Theirs is a moving target, shot at by a changing crowd with varying skills and interests. Contrary to the early literature on regimes that regarded regimes as akin to legislation requiring compliance, the understanding is now growing that regimes are instead continually recursive two-dimensional negotiations over rule formation, application, and revision (Spector and Zartman, 2003). Rather than constituting a simple choice between loyalty (compliance) and exit (noncompliance), regimes produce the additional possibility of voice (readjustment through negotiation) (Hirschman, 1970). These negotiations combine system maintenance, readjustment efforts, domestic pressures, and exogenous inputs, in which disparities among parties in power, interests, costs, and benefits perform the motor role in moving the regime through its recursive iterations. Thus, regimes deal with risk by continually revisiting and reaffirming or revising their course as the future comes closer, perspectives sharpen, and dangerous uncertainties become clearer.

Several examples will illustrate the process of managing inherently risky subjects through recursive negotiations. The Climate Change Convention deals with a problem involving two types of risks: the double risk of global warming, that is, the uncertainty of future global warming and the uncertainty of its future ill effects, and the double risk of a preventive trade-off, that is, between uncertain future costs of calamity and certain present costs of uncertain prevention. The course of the regime has not been smooth, as different parties come up with different figures, and hence policies, in the complex calculations of these risks. Again, the International Whaling Convention deals with the problem of declining stocks of whales. Uncertainty remains not only about their depletion rates but also, for some countries, about the risks for their present food supply of not harvesting compared with the risks for their future food supply of depleting future stocks caused by present harvesting. Currently two countries, Norway and Japan, remain outside the regime (exit) but have attempted to renegotiate the Convention (voice).

The trade-offs evident in these two cases illustrate a characteristic problem about risk that lies at the core of preventive negotiations. Unlike other negotiations, regime negotiations focus on the question of absolute costs under uncertainty, rather than on the uncertainty or unreliability of cooperation or on relative gains that much of the regime literature has emphasized to date. In other words, the basic question is not whether the other party will hold the deal and comply (the free rider problem) or whether the other party will benefit more from the deal (the Realists' problem), but whether the danger will exist at all and whether the preventive measures will handle it. "Will we cost ourselves unnecessarily now and forever, to forestall uncertain dangers (i.e., the risk) of future costs?"

In "normal" negotiations, risk is actor-related and lies in the possibility of default. Contingencies are traded against each other under the presumption of their certainty. "If [i.e., When] you give me $100, I will give you this rug" in the bazaar or "When you give me security, I will give you territory" in the Middle East. There are standard measures against such risks, such as escrow accounts, third-party guarantors, late payments and default penalties, security deposits, among others, and many of these are standard clauses in an agreement. In addition, there are standard effects that serve to reduce the risk of default, including reciprocity, reputation, and the "shadow of the future" effect (Axelrod, 1984). On the other hand, in preventive negotiations, risks are issue-related and trade-offs give up a certain present cost against a risk, an uncertain future danger, with no assurance that the one will prevent the other.

There are two categories of ways of dealing with this problem, deriving from the disassociation of risk into uncertainty and danger. As negotiation is cooperation, even under conditions of competition or conflict, the parties can decide together either to reduce the uncertainty and proceed as in a normal negotiation, or deal directly with the uncertainty, essentially by sharing it. Uncertainty-reduction strategies include research, denial, and overkill—among others, no doubt. Uncertainty-sharing strategies include incrementation, staging, matching, compensation, and trust, among others.

The most straightforward strategy is research into the nature of the danger in order to eliminate its uncertainty. If the dangers of global warming or whale depletion or border war or ethnic rebellion are known with certainty, then the nature of the problem changes completely. It becomes a matter of trading present costs against discounted future costs (Pearson, 2000, especially chap. 4). The result is not a mechanical matter, as the discount rate is still a matter of debate and negotiation, but the problem is different once the risk element is eliminated (or reduced, or changed). A good example comes in several ways from the UN Conference on the Law of the Sea (UNCLOS), which in its General Assembly and Conference stages combined 15 years of work to produce a new regime. In general, much of the time was spent in study of the potentialities offered by a new convention and thus in reducing the uncertainties surrounding the dangers to be prevented (Friedheim, 1993). Specifically, a useful device was the Massachusetts Institute of Technology (MIT) computer model of the impact of various proposals which showed the implications of particular states' positions, again reducing the risks involved in the solutions under consideration (Raiffa, 1982, chap. 18).

Many regime negotiations, admitting the characteristic and irresoluble uncertainty inherent in their subject, have sought to establish an overarching norm—a sort of meta-regime—termed the precautionary principle, that denies the uncertainty and treats the danger in the cure as if it were sure (Foster et al., 2000). The principle holds, in general, that risk shall be abolished by assuming danger to be certain under reasonable circumstances. The devil is in the condition: a maximum formulation—such as the 1982 World Charter for Nature—asserts the certainty of danger in new technologies unless there is absolute proof to the contrary, whereas looser formulations—such as the 1992 Rio Declaration—hold that the absence of "full scientific certainty shall not be used as a reason for postponing cost-effective measures [of prevention]." Unfortunately, the uncertainty over the exact force of the principle leaves it still open to the normal course of recursive negotiations by regimes over its meaning.

A third way of handling risk is to smother it. In a sense, this is the reverse of the previous strategy in terms of its policy implications. Both say, "Assume the worst," the one by saying, "Don't act unless you are certain that there are no ill effects involved in the prevention (i.e., no danger)" and the other by saying, "Act as if you were certain that the danger exists." Overkill changes the nature of the calculation by adjusting the present cost to meet the sure cost of the danger; the calculation would then be made as to whether the cost of handling a danger of 100 percent probability would be justified. The Coalition in the 1991 Gulf War, operating under the Powell Doctrine, decided on a massive response rather than running the danger of sliding down the slippery slope into entrapment. The element of risk was removed, although the element of prevention was missing. Of course, a companion strategy to "Assume the worst and deal with it" is to "Assume the best and claim you caused it"!

There are also a number of strategies for handling risk by sharing the uncertainty: three based on cutting up the uncertainty, one on parceling it out, and another on bridging it (see below, 4 and 5).

One strategy for sharing the uncertainty works through incrementation. Instead of dealing with the whole issue conclusively, the parties work through stages of cooperation. This is the philosophy (if the action were based on a philosophy) behind the recursive negotiations that constitute regimes in motion, although the philosophy is an imposition of necessity. The parties negotiate as much of an agreement as they can and institute a regular review conference (conference of the parties) to see if the preventive cooperation can be advanced in the light of new information (reduced uncertainty) in the next round. The 1985 Vienna Ozone Protection Convention was tightened by the 1987 Montreal Protocol, the 1990 London Revisions, and further applications, as the element of uncertainty became reduced and the magnitude of the danger increased (Benedick, 1991; Chasek, 2003).

A second strategy, somewhat the reverse, is based on staging certainty. The parties negotiate a firm and complete agreement on cooperation but specify successive stages at which more and more decisive action will be taken as the danger becomes clearer and the uncertainty is peeled away. The North Atlantic Treaty Organization (NATO) moves toward action by establishing first an activation warning (ACTWARN) that indicates the forces that would be used if action were to be taken, and

then an activation order (ACTORD) that establishes a date for action; both serve both as preparatory steps that prepare for action and as warnings that can prevent the need for action if perceived as a deterrent.

A third strategy for sharing uncertainties is to match them, returning to the contingencies that are basic to ordinary negotiations. The parties agree to take cooperative measures or to take deterrent or countering action if triggering certainties appear. This strategy only works, of course, if last-minute actions or the threat of taking them are relevant preventive measures. Dangers from nature are not susceptible to threats and deterrence, as already noted, and many dangers to be prevented—notably any of the Four Horsemen of the Apocalypse (Conquest, War, Famine/Pestilence, and Death)—need more than last-minute triggers to be prevented.

A fourth strategy for sharing uncertainty is through two ways of parceling out compensation: internal and external. The common use of compensation, which may be termed here "internal," is through side payments offered by one part of the negotiating group to another in order to equalize costs of prevention. The payments offered by the developed countries to the developing countries in the Global Environmental Facility (GEF) following the United Nations Conference on Environment and Development (UNCED) in 1992 and as part of the Kyoto Protocol on global warming were designed to reduce the risk of preventing environmental degradation. In both cases, payments were designed to reduce the risk to development that might be entailed in environmental measures and were met by parties who had already gone through the development process, thus sharing the cost of uncertainty.

"External" compensation depends on resources obtained from outside the cooperating parties and is a particularly useful—if not necessary—element in constituting a preventive agreement. If preventive measures can be made to be remunerative rather than costly, then the preventive trade-off becomes a more positive one of certain present benefits against uncertain future costs. For example, the element of risk in protecting the ozone layer was reduced when industry found it profitable to manufacture substitutes for chlorofluorocarbons (CFCs) rather than simply to stop CFC production. The reason why preventive negotiations against global warming have not been successful is that external compensations have not yet been found to change the trade-off calculations.

Finally (although there may be other strategies), risk can be reduced among cooperating parties by the introduction of trust mechanisms to bridge over uncertainty. As game theoretic presentations such as Prisoners' Dilemma game (PDG) and Chicken Dilemma game (CDG) indicate, rational obstacles to cooperation can be overcome by the introduction of certainty through trust, and by working to eliminate the risk of defection by opting for joint payoffs. Whether through holding payments, as in escrow, or promises, as in confessionals, third parties are a trust mechanism of choice. Third parties trusted by both sides, where the conflicting parties themselves do not trust each other, have been identified as risk management mechanisms in negotiations to prevent the return of civil war (Walter, 1999), among others. However, trust is a useful mechanism only in terms of reducing the uncertainty of cooperation, in cases (such as PDG and CDG) where free riding and noncompliance are the danger. In preventive negotiations, however, as already indicated, the risks derive

much more importantly from the uncertainty of effectiveness and the uncertainty of danger.

A Small Case

While many examples can be given and have even already been alluded to, it might be useful to tie the literature on the subject together by returning to an instance presented in the authoritative National Academy of Science study (Stern and Fineberg, 1996, pp. 20–21, 180–187).

In 1991 the United States Environmental Protection Agency (EPA), which was obliged by the Safe Water Act to set standards for acceptable levels of drinking water contaminants, was made aware of the need to regulate disinfectant by-products (DBPs) introduced to reduce microbial infections (Federal Register 59(145): 38675 [28 July 1994]). Although the danger DBPs posed was known in general, the data on the degree and certainty of danger were inadequate. Because the usual administrative rule-making process would have been contentious, the EPA opted for negotiated rule making among stakeholders. Although the problem was a conflict against nature, it also involved a conflict among the different stakeholders with different interests affected by the degree and nature of the problem. Much of the period between November 1992 and June 1993 when the rules were issued was spent in diagnosis, in repeated cycles of "request/report/revise/request." The EPA "framed the inherent problem as a risk-risk trade-off. Major difficulties were expected to be the reduction of DBP risk without a simultaneous increase in microbial risk and the introduction of new risks from changes in treatment technology" (Stern and Fineberg, 1996, pp. 185, 182). The negotiating committee began by defining the nature of a good solution, but then split over the nature of the problem as uncertainty or as danger (i.e., as the need to reduce uncertainty by establishing maximum contaminant levels or to reduce danger by eliminating DBP components).

After eight months of diagnosis and formulation, the committee and its technical working group prepared a number of rules dealing with both sides of the problem of the risk, first reducing uncertainty so that the danger itself could be reduced. One rule was an Information Collection Rule (ICR) (59 FR 6332 [10 February 1994]), deemed necessary because of the still-insufficient data on the nature of the danger and the feasibility of treatment measures. The ICR was a negotiated compromise seeking to reduce uncertainty by research, that then made it possible to reduce uncertainty further through a second rule providing provisional regulation of DBP levels. The two measures were linked operationally; when ICR-based data collection would have produced new information on elimination measures, a second stage was mandated to revise the provisional regulation levels made attainable by enhanced treatment, with a low default level in order to make sure the committee would reconvene. Thus the rule-making or regime process specifically provided for recursive negotiations to handle the problem of risk, incrementally sharing the uncertainty and staging the certainty for treating it.

Conclusion: Tastes and Benefits

Nobody likes risks, but some people like to take chances. Prospect theory indicates that actors tend to be conservative in pursuing gains, more risk-averse than they are in regard to possible losses. While parties to preventive negotiation try to reduce their risks, using the mechanisms defined and perhaps others as well, there are occasions when parties prefer to run their risks. When present costs are high, current benefits low, and the uncertainty of future danger high (i.e., low certainty of its occurrence and low estimated costs or low estimated immediacy if it does occur), or when recovery of losses is at issue, the cost-benefit calculation favors risk taking. Similarly, risk estimates may vary among parties: free riding is not considered nice, but free viewing may be accurate; and while solidarity is a great thing, costs can be expected to be borne on a fair basis among those variously affected.

How then does risk color preventive negotiations, as the Introduction to this volume asks? To begin with, it injects an additional element into the negotiations. At home or at the green table, negotiators will debate how much of a risk is present and gear their preventive proposals and responses to their estimates. Negotiators in any negotiation always eye the amount of actor-related risk: What are the chances of my opponent defecting in the implementation stage? As negotiation involves an exchange of contingent gratifications and deprivations (promises and predictions, threats and warnings), the likelihood of the other parties keeping their word is always a question, and all the more so when the outcome concerns the effectiveness of the agreed measures.

Issue-related risks are the inherent problem in preventive negotiation, and the subject of varying estimates of occurrence and of damage. If consensual knowledge develops to establish a common appreciation, negotiators can turn to the issue as a problem-solving exercise; if not, they are negotiating on an uneven table and a common formula for agreement is extremely difficult to find. However, risk does provide an additional factor that can improve the chances of a satisfactory outcome for all the parties. By constituting an external adversary that both parties have to face, it can enforce cooperation, turning adversarial negotiations into a game against nature. This is, after all, what the risk of nuclear catastrophe and many other lesser dangers did to the highly adversarial relations between the United States and the Soviet Union during the Cold War. Jean Monet noted that the key to successful negotiation is to move the parties facing each other as adversaries across the table to the same side of the table so that they face the problem as the adversary. Recognizing risk as the problem can bring parties together to deal with it.

This review of the role of risk—dangerous uncertainties—in preventive negotiations has shown that playing the odds of the uncertainty does not resolve the problem and instead leads to major pitfalls. Efforts to assume the worst and deal with it may be costly, and incremental and staging efforts can be a slippery slope to entrapment, as the United States has claimed in regard to the Law of the Sea and Climate Change Conventions and as the world observed in the steps to World War I. Risk can be analyzed, and the diagnosis can lead to specific and appropriate measures, but these are not foolproof. If they were, there would be no room for negotiation.

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Introduction

Rudolf Avenhaus and Gunnar Sjöstedt

Risk and negotiation is a familiar theme for academics concerned with international bargaining. It is likewise a topic of interest for diplomats, business people, and other practitioners of negotiation. The art of negotiation includes the skill of risk assessment. For example, a recurrent problem confronting negotiators and their advisors is whether to risk pursuing a hard, demanding strategy, try to work out a reasonable compromise, or attempt to construct a win–win solution. Pressuring the opposition to give concessions may help increase one's own share of the disputed values. However, if the pressure is too hard, the other side may choose to withdraw from the negotiation. Another common type of risk problem emerges when a negotiating party has to decide whether or not to trust the opposition to honor the commitments it has made in an international agreement. Will the other party comply with the stipulations of a negotiated treaty, or will it try to cheat?

In these two examples the risks that one party perceives in a negotiation are associated with the performance of other actors, for example, the bargaining strategies they use or the commitments that they make. Such *actor-conditioned risks* will also be considered in this book on risk and negotiation. However, the focus will primarily be on topics that are framed as risks, *negotiated risks*. These are issue-conditioned rather than actor-driven, with the issue having the character of a risk.

The overall objective of this book is to assess if negotiated risks are addressed and treated in a special way at the table and, if so, in what way. This has not been fully considered in the literature on international negotiation. A key question of the book is, hence: to what extent does the framing of a negotiated issue as a risk—or not as a risk—by negotiating parties make a difference to how a negotiation evolves

Rudolf Avenhaus
University of the Federal Armed Forces, Munich, Germany, e-mail: rudolf.avenhaus@unibw.de

Gunnar Sjöstedt
Swedish Institute of International Affairs, Stockholm, Sweden, e-mail: Gunnar.Sjostedt@ui.se

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and is concluded. Thus, although this book discusses risk issues, it is essentially a study of international negotiation.

What Are Risks?

Like other important, social scientific concepts—power is a good example—risk is easily understood intuitively, although scientists continue to dispute its proper definition. Certainly, this debate will be taken note of in the current book, although not in detail. The development of a conceptual framework is a reasonable point of departure for an understanding of risk; it is also particularly supported by adherents of quantitative approaches to international negotiation.

Formal Definitions of Risk

According to Moore (1983), risk

> describes a scenario in which possible losses are present: physical (such as death), disappointment (failure to climb a mountain), financial losses (as when a business person makes a poor investment in a new venture). Higher risk makes the loss more likely, lower risk makes it less likely.

As to the origin of the term, let us continue with Moore:

> The word risk is relatively modern, coming to England in the mid-seventeenth century from France as the word risk (or from the Italian word "rischio" which means something like dangers). In earlier days, before the word risk existed, the word hazard appears to have the closest meaning as for example in Shakespeare's Merchant of Venice: Men that hazard all do it in hope of fair advantages.

As the words "hazard" and "risk" can both be used as either a noun or a verb, they are both capable of expressing two ideas: first, a danger located in some aspect of the external world; second, the idea of acting in a way that involves taking a chance. Shakespeare reminds us that risk is connected not only with the possibility of loss or harm, but also with the hope of some benefit or gain.

There are thus two basic components of risk (see also Covello and Merkhofer, 1994): first, a future outcome that can take a number of forms, some of them unfavorable; and second, a non-zero chance or probability that the less favorable outcomes may occur. Colloquially, risk is used to cover the combination of an unfavorable result with the non-zero chance of its occurrence.

In insurance circles, according to Bühlmann (1970), the proper definition of risk has been widely discussed. An actuary, accustomed to the axiomatic method, is at an advantage in these discussions, for he/she characterizes the risk not by what it is but by what properties it has. The basic characteristics of a risk reside in its properties as an earner of premiums and incurrer of claims. A risk is thus described

by a functional pair (P_t, S_t), where P_t is the premium earned in the time interval $(0,t)$, and S_t is the sum of claim amounts incurred in $(0,t)$. Both of these can be random functions, also called stochastic processes, or functions not dependent upon chance. In practice one regards a definition of risk as being acceptable if it allows P_t and S_t to be expressed with reasonable exactness and particularly if it is simple to use and useful as a basis for predicting future experience.

In modern quantitative analyses of societal problems, in particular those which result from technical developments (see, e.g., Fritzsche, 1986), risk is defined as an expected damage: if there is an event E with outcome x, which will happen in some forthcoming time interval with probability p, then the risk R is defined as the product $x \cdot p$. If there are n events E_i, $i = 1...n$, with outcomes x_i, which will happen with probabilities p_i, then the risk R is defined as the sum of the products,

$$R = x_1 \cdot p_1 + x_2 \cdot p_2 + \ldots + x_n \cdot p_n \,.$$

As probabilities are dimensionless quantities, sometimes referring to a given time interval (e.g., one year), the risk has the dimension of the outcome: if the outcomes are measured in financial losses, then R is measured in financial terms, or if the events describe numbers of persons killed, then R is measured in these terms, both ultimately referring to some time interval.

Sometimes the outcomes of events are described by idealized quantities: if in a given situation somebody may be killed with probability p, and if the possibility of being killed is described with the outcome one, whereas that of not being killed is described with a zero, then the risk is

$$R = 1 \cdot p + 0 \cdot (1-p) = p \,,$$

which means that the risk is equal to the probability of being killed. In this sense the term "deadly risk" is sometimes used to denote the probability of being killed.

Risk Evaluation

In any case, whether one defines risk in a more qualitative or in a quantitative way, the evaluation of risks means the evaluation of outcomes of events on the one hand, and of probabilities of these events occurring, on the other.

Both problems are well known topics in Statistics, when dealing with risks of daily life (i.e., events and outcomes that occur at any time and anywhere). In these cases the outcomes are known, and the probabilities can be estimated with the help of the relative frequencies of the events under consideration.

The situation is different if risks are discussed that can be caused by potentially catastrophic events which, in the best case, have not yet occurred. Then, complex mathematical methods have to be used to determine the damages (i.e., the consequences of catastrophic events for men and materials), and the probabilities of such

events occurring have to be determined through the assessment of well-known or easier-to-determine elementary events.

Let us illustrate these abstract formulations with some examples. In one part of a country there are on average 50 car accidents a year in which 100 people are killed, namely, 20 accidents in which one person is killed, 15 with 2 killed, 10 with 3, and 5 with 4. Thus, the individual lethal risk, defined as the expected number of people killed in one car accident in which people are killed, is estimated as:

$$1 \cdot 0.4 + 2 \cdot 0.3 + 3 \cdot 0.2 + 4 \cdot 0.1 = 2\,,$$

or, more simply, as the ratio of the global quantities of people and accidents, namely, 100/50 = 2. Furthermore, if one million people live in this area, then the collective lethal risk due to car accidents is 100 per million and year.

Where catastrophic events occur with very small probabilities, as mentioned, estimation using relative frequencies does not help. For nuclear reactor failure, very complicated calculations (e.g., tree analysis and related techniques) have been performed (see, e.g., Rasmussen, 1975). Here, another problem arises. The multiplication of disastrous outcomes by very small probabilities is no longer intuitive. What does it mean, if we multiply a figure like one million people killed by a probability of one over a million to get just one? In such cases, it is more reasonable to keep the two kinds of figures—namely, outcomes of events and their probabilities—separate. This is achieved with the help of, for example, the so-called Farmer curves (Farmer, 1967).

In some contexts the formula *risk* = *probability* × *consequences* is actually used directly for practical risk assessment, for example, in medicine or when the health risks of new chemical products are evaluated (National Research Council, 1999). In the area of risk research, however, the traditional mathematical approach to risk assessment has been strongly criticized in recent years. Constructivist risk analysts deny that risks can be calculated objectively, as people or groups making a risk assessment are so strongly conditioned by their cultural background (Beck, 1992; Ellis and Thompson, 1997). In real-life situations the human mind is simply unable—or unwilling—to combine an estimation of probabilities with an evaluation of consequences. A person confronted with a risk problem tends to choose between a focus either on *probability* or on *consequences*; and when this choice is made, most people in most situations have a preference for consequences, particularly if the consequences are grave. For example, when estimating the prospect of a nuclear accident, most people chiefly consider what they know or have heard about actual nuclear accidents in the past, like those at Three-Mile Island and Chernobyl (Sjöberg, 2000). The enormous devastation caused by the burning reactors at Chernobyl strongly influenced risk assessments of domestic reactors in a country like Sweden which was affected by radioactive fallout from the Chernobyl nuclear accident. In many Swedish risk assessments, the image of the Chernobyl catastrophe has increased the risks people associate with Swedish reactors (Nilsson et al., 1997).

Different people, and different categories of individuals, tend to have a somewhat dissimilar perspective on probability and consequences in risk assessments. Often,

there are remarkable differences between scientists, on the one hand, and politicians (governments) and their representatives in international negotiation (diplomats), on the other, in terms of making risk assessments. A fundamental problem is that policymakers and their negotiators at the table, when thinking about or coping with risk assessments, ultimately have a different approach to uncertainty than scientists. Expressed in technical terms, politicians seem to prefer *unstructured certainty* to *structured uncertainty* when dealing with risks in decision making, whereas natural scientists have a preference for structured uncertainty.

Structuring uncertainty allows both the consequences and their probabilities to be considered simultaneously when a risky issue (e.g., climate warming) is addressed. Systematic analysis is undertaken to clarify what the effects of a certain event, say, climate warming, will be, and estimates are made of the likelihood that they will occur (Chapman and Ward, 2002). The climate models and the scenarios used by the Intergovernmental Panel on Climate Change (IPCC) to predict the consequences of climate warming were essentially based on the principle of structured uncertainty.

This scientific approach is completely different from that of the politician who will make a risk assessment on the basis of unstructured certainty regarding, say, whether a nuclear power plant is to be closed down or not (Paulson, 2001; Lemonss, 1996). When the "typical politician" argues for closure, he/she recalls the disastrous consequences of earlier nuclear accidents and further assumes that a new catastrophe will happen unless necessary precautionary measures are taken—that, ultimately, the reactor must be closed down. In politicians' statements, no evaluation of the probability of nuclear accidents is included: they will say, for example, that we must phase out nuclear power because a reactor accident will have disastrous and unbearable consequences. The main reason for politicians' preference for unstructured certainty appears to be that motives for unpopular, costly policy measures (e.g., energy taxes) cannot be appropriately explained to the public in probabilistic terms.

Behavioral Outlooks on Risk

It is well known that there is often a large difference between the size of risks as estimated or calculated and the size of risks as perceived by people; this is especially so in the case of imminent risks, on the one hand, and very remote and abstract risks, on the other.

One explanation is that people do not have a good comprehension of probabilities and expectations. The classical example is the so-called St. Petersburg Paradox: in this example, one player throws again and again a symmetrical coin and gives to the other player 2^n rubles if heads occurs the first time after the n-th throwing. How many rubles does the second player have to give to the first player for the game to be fair (i.e., for his expected gain to be equal to this amount?) The answer is that he has to give an infinite number of rubles, which of course is absolutely counter-intuitive.

Taking more realistic examples, one observes that, in the case of lethal risks, accidents causing death are considered as frequent as illnesses, whereas in fact the latter are 15 times more frequent. In addition, the ranges are perceived as being much more narrow than they actually are. The causes of death cover six orders of magnitude, whereas only two to three orders of magnitude are perceived.

In addition, risk researchers claim that people coping with risks have more trouble considering probabilities and consequences simultaneously. The literature indicates that actors tend to emphasize either probabilities or consequences when they are thinking about a particular risk. One actor may, for instance, propose that "the probability that the Earth will be hit by an asteroid is small, therefore the risk of such a collision can be disregarded in spite of the disastrous consequences it would have for the planet." Another actor may assert: "when decisions are to be taken about a new nuclear reactor, the enormous destruction and costs involved in a nuclear accident must be taken into consideration." It is not certain whether a risk perceived by the parties of a social encounter, such as a negotiation, corresponds to the objective assessment made by a scientist using an acknowledged measurement procedure. The two parties of a negotiation may likewise assess the risks associated with the same situation very differently.

One possible explanation for differing risk assessments may be variations in the skill of calculation. There are special training programs for risk assessments in, say, insurance companies or institutions dealing with financial risks. Under some conditions there are certainly ways in which a risk can be estimated in essentially the same way and with the same result by different individuals. Nevertheless, one important school of thought emphasizes that, ultimately, a risk is a *construction* of the party perceiving it, be that an individual or an organization. This construction is potentially influenced by various explanatory factors, one of which may be the calculation capability of the individual or organization. However, a host of other factors may also be significant, for example, knowledge and understanding of the issues representing risks for the party concerned. Other interacting determinants of a risk assessment may be *values, attitudes*, or *culture*, be these ethnic or professional.

The proposition that individuals and organizations construct risks rather than assess them objectively is of interest not only for academic analysts but also for the parties to an encounter involving risks. The background factors of risk constructions are usually not easily discernible; special scientific studies may even be required to detect them. Therefore, differing risk perceptions of the same issue in a negotiation may conceivably cause different kinds of difficulties for the participants. Differences as such may evidently be problematic. If one party considers that a risk is high and its opposite number believes that it is low, this difference is likely to hamper an agreement between the two sides. Another problem may be that the parties concerned are unaware of the extent of divergent risk perceptions or do not understand their causes. This may be an obstacle to communication and agreement between the parties which, in turn, also may lower the probability of a constructive agreement.

Negotiated Risks

The argument that risks should be regarded as actor constructions does not preclude a working definition of what *risk* essentially means in this study. Hence, for the purposes of this project, a risk represents *the expected negative consequences of current or potential future phenomena or events*. One example would be the environmental hazards following on from the pollution of a river: discharges or runoff from industrial production and agriculture that will probably reduce the quality of drinking water taken from the river and also contribute to reducing biodiversity. These environmental risks become *transboundary* in character if the threatened river, say, for instance, the Rhine, flows through more than one country on its way to the sea. One transboundary manifestation is simply that the same polluted water flow represents an environmental risk in more than one nation. The implication is that within a given river system the pollution coming from one particular country will have a negative effect on many other countries, or even on all of them. Another equally significant observation is that each country that is part of the river system will be affected by pollution coming from all—or at least most—countries belonging to this same system.

Policy measures—risk management—may also give issues a transboundary character. In one scenario most countries along the river (except perhaps the most upstream state) cannot deal effectively with the pollution problem by means of autonomous, domestic measures. Some of the sources of domestic water pollution are located in other countries. Therefore, an international, cooperative strategy of risk management is called for to cope with the environmental hazards of the river.

This book is concerned with *transboundary risks*. These may, in principle, occur in many issue areas (not just the environment), for example, arms reductions, business joint ventures, or confidence-building measures intended to prevent future conflicts between nations or between ethnic groups in the same state.

Risk management is thought of here as an umbrella term for the measures that an actor undertakes to cope with issue-conditioned risks. These actions may be different in nature and also serve different purposes. The definition used in this project implies that a risk becomes higher: 1) with the increasing negative consequences of an event; and 2) with the mounting probability of its occurrence. Accordingly, risk management may in principle address either an event causing a risk or its consequences, should it occur. For example, in the case of water pollution in a river, one approach of risk management may be to decrease, or eliminate, the discharges into the river that are causing water pollution. Another approach would be to invest in cleaning technology that can be used by the consumers of polluted water taken from the river.

This project is concerned with transboundary risk management requiring the collaboration of actors (e.g., governments or companies) from at least two different countries. The focus is particularly set on the negotiation processes by means of which two or more parties—states, business companies, and other organizations—agree to undertake joint risk management measures. The main research question is

how negotiations to reach such agreements are affected by the special character of the issues they deal with—*negotiated risks*.

A question addressed in this project is *to what extent* issues constructed and framed as risk problems will be treated in a special way in a negotiation, as compared to other types of issues regardless of their substance, for example, environmental problems or financial prospects. Although risks, framed as risks, dealt with in an international negotiation about, say, environmental destruction or joint business investments, are likely to lead to different kinds of responses than if the same parties were negotiating issues that are not framed as risks, they may still generate different problems—and perhaps also opportunities. A general interpretation of the leading hypothesis is that the risk dimension of an issue colors a negotiation process in certain ways and respects that remain to be specified by means of research. The aim of the book is to discuss if and how such coloring effects may manifest themselves.

This book is essentially an exploratory study. Little systematic and theory-oriented research has been carried out on how issues framed as risks are dealt with in international negotiation. In this sense, negotiated risks represent a dark area that needs to be elucidated at a fairly fundamental level of analysis. The task of the book is therefore, in principle, to pave the way for future studies designed to evaluate rather than to develop and clarify hypotheses. This level of ambition, however, does not preclude important observations being made with regard to how risks are treated in negotiations.

Earlier risk research gives some indications as to why negotiated risks might be treated in special ways in a negotiation process. A major reason is the special kind of uncertainty problems confronting parties negotiating risks, that may be referred to as "negative perceptions of the immediate outcome" (Faure and Rubin, 1993, p. 23). The negotiations on climate change offer a good illustration of this predicament facing negotiating parties. An important aim of these multilateral talks has been to work out a multilateral agreement (notably the Kyoto Protocol) on how to share the costs among governments of reducing the emissions of greenhouse gases into the atmosphere. These costs are certain to come in the short term, if negotiating parties live up to their commitments in international treaties. Parties are willing to accept these costly commitments because they are expected to enable them to avoid even larger *possible costs* in the coming decades due to *the expected disastrous effects* of a likely warmer atmosphere as a result of *probable*, growing concentrations of greenhouse gases in the atmosphere. Hence, the benefits that negotiating parties will accrue from the climate talks are not only uncertain and diffuse but also located in a time dimension that, for all practical purposes, is disconnected from the politically relevant time space: the present and a few years ahead.

These circumstances tend to generate a negotiation situation in which the costs and benefits have to be addressed in quite different ways by negotiation parties. The uncertain, diffuse benefits accruing in the distant future have to be constructed with the help of some sort of prediction model which, in the particular case of the climate talks, is highly formalized and very complex. The construction of the benefits will serve as a procedure for motivating the costs (e.g., represented by emission cuts) on

which the distributive element of the negotiation focuses. In other words, after the positive values representing avoided environmental hazards in the future have been established, the negotiation will essentially concern the sharing of negative values. In environmental negotiations like those on climate change, this distributive bargaining has typically concerned percentages of emission reductions and acceptable exceptions from such commitments. Each party's assessment of the expected positive values will condition what absolute and relative sacrifices it is ready to accept in an agreement.

The outcome of a successful negotiation on risks will typically be an agreement specifying the terms of a program of risk management. When the parties of the negotiation are states, the agreement will be spelled out in a treaty. This final agreement has to be preceded by a sequence of earlier accords between negotiating parties. Initially, the parties have to consent to start a negotiation. Then they will have to agree on what the issues on the agenda are and how they will be framed, how exactly the issues are to be approached and dealt with; sometimes terms of reference will be established for the exchange of concessions or any other form of bargaining in the end game.

The establishment of this sequence of agreements is associated with various problems and opportunities, which are discussed in the extensive literature (see, e.g., Hampson, 1994; Dupont and Faure, 2002; Sebenius, 2001) on international negotiation. This book addresses the issue of if, how, and to what extent party interaction in a negotiation is colored by the special characteristics of negotiated risks. The literature on risks indicates a number of broad inroads into an analysis that can be used to elucidate these queries, namely, risk perception, risk communication, risk assessment, and risk management.

Risk Perception

In general language *perception* refers to how an individual sees a phenomenon, be it concrete like a car or abstract like a risk. There is broad agreement among risk researchers that risk perception includes not only a purely descriptive element but also an evaluation. For example, the perception of the risk of smoking typically includes a positive or negative attitude reflecting how the consumption of tobacco can be expected to influence human health. Similarly, the perception of an environmental risk like that of climate warming contains an explicit or implicit evaluation pertaining to its effects on the quality of ecological systems or human health conditions (Minzer, 1992). In the case of climate warming, evaluation pertains particularly to the *risk of warming*, whereas the understanding of *emission risks* has been relatively strongly descriptive in character. In contrast to, for instance, an approaching hurricane, concentrations of greenhouse gases in the atmosphere do not in themselves constitute a direct threat.

When relating risk perceptions to societal or political processes, risk researchers have focused on large aggregates of individuals, whole populations, or different

categories of social groups (Eiser et al., 1991; Sjöberg and Drotts-Sjöberg, 1988). A major theme in the literature on risk perception has to do with how it is conditioned by knowledge, culture, and other background factors (Douglas and Wildavsky, 1982). Another topic is how the risk perception of a country's population, or specific population groups, constrains decision processes (Hansson, 1987). However, little has been written about the role of the perception of negotiated risks in international multilateral talks, although some inferences can be drawn from the literature.

If negotiated risks could be calculated with the help of acknowledged procedures, negotiating parties would have no difficulties in agreeing on what the issue is. All parties would make the same calculation and obtain the same result.

However, this situation is unlikely to occur when parties meet at the negotiation table to manage a negotiated risk concerning complex and sensitive matters like, say, a nuclear power plant, mad cow disease, gene-manipulated food, or military security. Individuals as well as organizations often perceive the same risk in quite different ways.

Risk perception may, for example, be related to party interests. Consider, for example, the public perceptions in Lithuania of the risks connected with the Ignalina power plant. In 1989 there were large public demonstrations in Lithuania demanding the closure of the Ignalina power plant because of the risks of a reactor accident. This unusual event in the Soviet Union was clearly conditioned by the Chernobyl disaster in 1986. Then, in the early 1990s the Soviet Union began to crumble. The three Baltic states, Estonia, Latvia, and Lithuania, made a bid for independence, a development that was opposed by Moscow. Lithuania was targeted with economic sanctions, with oil exports from Russia being cut. Without Ignalina, Lithuania would have been in a very difficult situation. However, the nuclear reactors in Ignalina had the capacity to supply some 80 percent of Lithuanian electricity consumption. In independent Lithuania Ignalina is not perceived as a serious risk. After the Soviet/Russian attempt to prevent Lithuanian independence, Ignalina was also seen as an effective instrument of defense against economic warfare, which seems to have widely modified the perceptions of the risk of a nuclear accident.

Risk perception may, but need not, be steered by deliberate actor choices. An individual's psychological profile may also influence if, and how, he/she may perceive a risk. For example, typical risk takers and very cautious people can be expected to perceive risks differently. Knowledge about a risk also constrains actors' perceptions. For example, studies in Sweden have demonstrated that engineers working in a nuclear power plant are considerably less concerned about the risks associated with this installation than the Swedish population in general. Several authors have stressed that risk perceptions are conditioned by the culture, or cultures, that a person belongs to. Cultures, in turn, may be of different kinds and origin, for instance, either ethnic or professional. Different cultures can foster dissimilar degrees of risk awareness and also diverging attitudes toward risks.

How a person perceives a risk may be detected with the help of scientific methods, for example, survey studies. However, in many situations a risk perception held

by a particular individual may be invisible to other people. Indeed, an individual may be unaware about all nuances in his/her own risk perceptions.

Because of their character and origins, risk perceptions may represent obstacles in party interactions concerning negotiated risks. For example, risk perceptions may hinder a negotiation simply because of their diversity. To construct a useful agreement on a negotiated risk, parties need to have a common understanding of it. The cultural background of an actor's risk perception may contribute to making it non-negotiable, a "given," and not easy to change.

Risk Communication

Research on risk communication has usually dealt with the problem of informing the public about risks in a correct and effective way. Part of the problem may be how to explain the risk so that the public will understand it properly; another part may be to highlight a risk without causing unnecessary alarm. Such issues of risk communication may also be relevant in studies about negotiated risks. In some issue areas and in some countries, at least, negotiators will need to consider how the general public or influential societal groups will understand negotiated risks that will require costly policy measures to manage.

Negotiation is a context in which special issues of risk communication need to be elucidated with the help of research. Given the likely diversity of risk perceptions, complex inter-party communication is required to establish a common understanding of a negotiated risk, particularly in a multilateral setting. To promote their interests, parties have to demonstrate to one another how they perceive the risk concerned. They have to clarify the similarities and dissimilarities between alternative and competing risk perceptions. They have to jointly describe and explain a negotiated risk in such a way that it becomes acceptable to all negotiating parties, or at least to a "critical mass" of them. Furthermore, they need to analyze and discuss effectively what measures can be taken to manage the negotiated risk on the agenda. And finally, as they construct an effective negotiation solution to find a way of actually managing a negotiated risk, they must also exchange views and concessions.

Actor risk perceptions condition or at least interfere in risk communication. For example, when the risk perception of a person is culture-driven, some elements of a perceived risk may be so self-evident that he/she does not see a need to express them in words. Circumstances that are not articulated cannot easily be communicated to other parties at the negotiation table. Hidden assumptions and conceptual frames, as well as underlying values, may cause misunderstanding among negotiating parties and thus contribute to impeding not only risk communication but also the negotiation as such. It is important to clarify what obstacles to effective risk communication may appear in a negotiation.

Risk Assessment

Risk assessment is a critical element in a negotiation on risks. The importance of a negotiated risk is the main reason why governments, organizations, and actors should involve themselves in a negotiation on costly policy measures for risk management. An actor's will to negotiate is likely to be driven by the risk assessment that it makes. The higher the risk the greater the motivation to negotiate.

A critical question is with what precision and in what detail negotiated risks have to be assessed jointly by the parties. What methods will be used for joint risk assessment? Will scientists have to become involved in the process? How exactly will the risk assessment that has been achieved be acknowledged in the negotiation process?

Risk Management

Here, *management* is given a broad meaning. It represents a selected approach to dealing with a risk. In this study, therefore, the management of risk may mean non-action, for example, accepting the risk and absorbing the costs, should the risk ever materialize.

Successful international negotiation will result in risk management representing joint action or joint arrangements amongst the parties involved. In this study a program of risk management is always the outcome of a bargaining process. Risks are negotiated because the parties involved wish to achieve joint risk management. However, risk management may also function as a conditioning factor in a negotiation. One contingency is that a particular approach to risk management (e.g., emission reductions in negotiations on air pollution) is introduced on to the agenda in conjunction with the construction of the negotiated risk itself at the negotiation table. Then, the planned or anticipated management approach will serve as a significant frame of reference for the clarification of the negotiated risk as well as for the development of the negotiation process. An important research issue is whether different management approaches will condition the negotiation process in different ways.

Analytical Framework for Negotiation Research

A negotiation on risks may possibly be described in terms of joint perception, communication, assessment, and management of risks. Initially, parties have to determine exactly what the issue—the negotiated risk—is. Parties have to communicate among themselves to make a joint risk assessment as the basis for an agreement on joint risk management. It is, however, obviously misleading to consider how parties

deal with negotiated risks as an autonomous process. Activities related to risks are nested in the overall negotiation game.

Such a model for the overall negotiation game, called *analytical framework for negotiation research*, is described, for example, in Kremenyuk (2002), see also Avenhaus et al. (2002). Its basic elements are *actors, strategies, process, structure, and outcome*. Negotiation is basically purposeful communication between two or more *actors*. Purposeful communication consists of *strategies* that actors develop and implement in order to pursue or defend their interests. The entire pattern of interaction constitutes a *process*, the form of which will vary depending on actors, strategies, and the influence of background factors. Background factors that change slowly and only in the long term form the *structure* within which party interaction takes place and the process unfolds. The *outcome* incorporates the results attained in a negotiation.

Actors: Sets of Participants

Parties to international negotiations are actors – states, business firms, international organizations, and other institutions – who are drawn into the process because they in one way or another are concerned with the positive or negative values represented by the issues placed on the agenda. Depending on the circumstances, such values may be related to business opportunities, for example, sales of reactors, the safety of nuclear plants, the development of a regime for trade of nuclear waste or, ultimately, the risk of nuclear war. The values manifested by the negotiated issues draw particular sets of participants to each negotiation.

Table 1 summarizes the basic frame of reference for the analysis of how risks are negotiated in an international setting. The analysis would be concerned with how the parties to a negotiation, individually or jointly, perceive, communicate, assess, and manage risks as issues in order to establish an agreement on joint—international—risk management. These roads into the study of negotiated risks need, however, to be considered in the context of an unfolding *negotiation process*. It should be mentioned that not all the boxes of Table 1 have to be filled in in all cases.

Table 1. A framework for the analysis of negotiated risks

	Actor–risk relationships			
Process stages	Perception	Communication	Assessment	Management
Pre-negotiation				
Agenda setting				
Formula				
Detail				
Agreement				
Post-negotiation				

First, however, some of the questions formulated by the matrix of Table 1 which pertain to the particular negotiation party—we will call them an actor perspective—will be raised.

- How do individual negotiation parties—organizations or states—perceive risks? Do they, for instance, use any special types of intelligence measures to note developments that may become negotiated risks? Another significant query concerns the role of the media and other opinion builders in influencing, perhaps conditioning, the organizational processes through which organizations and states perceive issues that will develop into negotiated risks.
- How do individual negotiation parties assess risks? For example, two issues are: the extent to which risk assessment is part of a regular political process; and the extent to which assessment requires the assistance of special risk experts. Is the involvement of scientists crucial? Is the use of computerized models helpful?
- What kind of strategies, or tactics, do individual negotiating parties develop to try to cope with transboundary negotiated issues? A special question is if negotiated risks influence an actor's risk performance in a negotiation.
- What technically acceptable methods can negotiating parties rely on to develop solutions for risk management that can be accepted by other negotiating parties?

These questions will function as a general framework for the book even though they will not be explicitly addressed in all chapters.

Strategies: Decision Dilemmas Confronting Negotiating Parties

The transboundary character of many risk issues on the international agenda implies a need to deal with them in international negotiation. The importance of these issues can be expected to strengthen the motivation of the countries affected by them to reach a viable international agreement. However, the importance of these issues may also impede negotiation if, as has often been the case, it takes place among parties who do not trust each other. However, trust may also be related to competence, for example, to a capacity to uphold a minimum security standard in nuclear reactors producing electricity. Suspicions emanating from a lack of trust may also cause difficulties in negotiations on non-military nuclear power. These complications may become further exacerbated by some extreme risks (e.g., associated with nuclear issues). If parties are confronted with extreme risks when they are developing or implementing negotiation strategies, the efforts to reach a binding agreement may be obstructed. High risk may force decision makers to take special precautions before they make binding commitments in a negotiation, and it may also make them feel that they have extraordinary responsibilities.

Process: Pattern of Party Interaction

Like other issues on the agenda of a negotiation issue-conditioned risks are likely to be processed in a similar pattern: *pre-negotiation, agenda setting, negotiation on formula, negotiation on detail* and, finally, *agreement*. In principle, all these stages are present in every negotiation. However, in some cases, one or more of the process stages may hardly be noticeable. In some complex multilateral negotiations, the decision to start a negotiation—pre-negotiation—has been a complex and protracted process lasting several years. In other cases, pre-negotiation has been an easily attained agreement on the issues to be negotiated. In other cases the agenda setting and clarification of issues requires a considerable amount of work at the table and therefore continues for a long time. Sometimes parties bring a formula for a bargaining approach from earlier negotiations, which is also acceptable to all parties in the upcoming talks. On other occasions the development of a formula may represent the most critical and difficult phase of a negotiation. However, in spite of all these possible variations across individual cases, the general process model should, in principle, be applicable to all negotiations.

Pre-negotiation typically has the character of a diplomatic power game between parties who are proposing negotiation on a particular set of issues and other parties who, in various ways, are opposing this bid. At this stage of the process issues are discussed in fairly general terms, mainly by political decision makers and professional diplomats. The outcome of successful pre-negotiations is an agreement among the parties to start negotiation on an agenda that is defined in fairly general terms.

When pre-negotiation transforms into *agenda setting*, party interaction is also changed. The process often opens up to let in technical and scientific expertise and also sometimes representatives of international organizations, including non-governmental organizations (NGOs). Sometimes, this stage of a negotiation resembles an international scientific conference. A knowledge base regarding the problem area is built up in such a way that the issues to be negotiated begin to be framed for problem solving or the exchange of concessions.

When parties turn to the construction of a *negotiation formula*, participation in the negotiation tends to become more restricted again. Party interaction now becomes more clearly dominated by professional diplomats, although some technical and scientific experts may remain important actors. A good understanding of the logic of the actual negotiation is a necessary prerequisite for the construction of a useful formula, as is qualified knowledge of the issues. In complex negotiations the parties at the table may need the support of technical experts to be able to work out a formula. The negotiations on long-range air pollution in Europe (e.g., causing acid rain) offers one interesting example (Tuinstra et al., 1999).

A formula may generate various utilities in a negotiation, but its most important function is to determine a specified approach to deal with the negotiation problems in such a way that an agreement can be attained. In some negotiations the formula has simply offered a method for the exchange of concessions in the game

of (re-)distribution of the main stakes put on the table. In other cases, the formula has been a highly complex construction including computerized scientific models.

Negotiation on detail is the domain of professional diplomats, although high-level decision makers may also appear at this process stage, when the negotiation formula is applied at the table. Detail does, however, not mean insignificance. Detail is seen as the contrast to formula, with its holistic or integrative perspective on the agenda. The main function of negotiation on detail is to solve specific negotiation problems.

Agreement is the final stage of a negotiation when the parties make a formal commitment to the results attained earlier in the process. Often, agreement conceived of as a process stage contains a ceremonial element that may be manifested by the presence of ministers or other top-level decision makers.

Like other issues, negotiated risks are channeled through the various stages of a negotiation. In each such phase, an issue is addressed somewhat dissimilarly and for somewhat different purposes. At the earlier stages of the negotiation, issues are essentially delimited, constructed, and framed for the purposes of the negotiation. In the later stages of the process, parties try to resolve their differences regarding the acknowledged issues and to integrate these settlements into a negotiation solution based on the joint or common interests of the negotiation parties.

Table 1 indicates a research strategy for distinguishing between different kinds of problems associated with negotiated risks. Essentially, it proposes that the nature, magnitude, or effects of a particular *actor–risk relationship* are influenced by the stage of an ongoing negotiation to which it pertains. For example, if problems of diverging risk perceptions emerge in agenda setting, they are likely to be less disruptive than if they occur during negotiation on detail. One of the functions of agenda setting is precisely to begin to harmonize issue perceptions held by the parties so as to attain a common understanding of them. In contrast, negotiation on detail typically presupposes that parties define and understand the issues on the agenda in more or less the same way. Similarly, although the assessment of negotiated risks is a problem that may seemingly appear any time in a negotiation process, risk evaluation is likely to become particularly highlighted in negotiation on formula and detail. These are the stages at which negotiation parties are making binding commitments and therefore need clear and consensual risk assessments as a substitute for common goals.

The distinction between the 20 problem situations depicted in Table 1 also has implications for practice, as it may help to facilitate the practitioner's handling of problems related to negotiated risks. Not a great deal is known about how the changing characteristics of an unfolding negotiation process influence the ways in which parties deal with issues characterized as risks. The 20 interfaces between an actor and a process perspective in Table 1 offer a perspective that should be useful for this kind of analysis.

In the following a few questions are raised, which focus on the interaction of negotiation parties: we will call this a *process perspective*.

- What are the principal problems with regard to differing risk perceptions in a particular negotiation? What measures do negotiating parties undertake in order to coordinate risk perceptions with other parties?
- What are the principal problems with regard to risk communication in a particular negotiation? What measures, if any, do negotiation parties undertake to facilitate risk communication?
- What are the principal problems with regard to risk assessment in a particular negotiation? How is a joint risk assessment carried out?
- What method of risk management is used in a particular negotiation? A special question is how different images of a negotiated risk (e.g. imminent catastrophe versus creeping development) influences the selected approach for risk management.

Finally, both the actor and the process outlook are subordinated to a *negotiation perspective*.

Structure: Links Between Issues and International Institutions

Many of the negotiations on transboundary risk issues, related to both security and safety, have developed as institution-building processes—some of them highly protracted and going on for decades. These institutions consist of various elements, including formal regime rules and commitments made by states to respect them, norms expressed as soft law, and also an institutionalized understanding and knowledge of the issues. Elements of international regimes, and especially institutionalized issue knowledge, are seemingly conditioned in some respects by widely perceived issue features, although these influences are difficult to verify by means of empirical study. It seems, however, that, for example, the likely impact of nuclear complexity on negotiation offers an example demonstrating how dimensional features may be coupled with the international structure in which a negotiation unfolds.

Outcome: Not Always Exactly What is Expected

A multilateral negotiation typically strives to produce an agreement between the parties in the form of an international treaty. The function of the treaty is to specify the commitments the parties have accepted in the negotiation. Hence, negotiated agreements represent the outcome of a negotiation, if by outcome we mean the end results of such international talks. However, a detailed treaty is not necessarily a comprehensive representation of the outcome. At a closer look, outcome is a highly problematic concept that may be interpreted in different ways, depending on the theoretical outlook. For example, an analyst who wants to evaluate how important a concluded negotiation has been may argue that an outcome assessment should not

only take stock of the text of the treaty but also consider how parties implement and comply with the obligations that they have accepted in it.

Negotiations may generate other forms of informal results that are not specified in the treaty. Part of this informal outcome may be captured with the help of the concept of regime building. According to a standard view, regimes include not only formal rules and procedures but also *norms and consensual knowledge*. Norms are not formalized as international law but give directions as to what is right and what is wrong. Knowledge clarifies the issues on the agenda, in particular by identifying causal relationships between key variables, for example by explaining the likely consequences of a nuclear accident.

If the negotiated commitments in the form of treaty rules are weak, the overall outcome of the negotiation may still be important because of the accepted norms and the shared knowledge that it has generated. This perspective on the outcome of negotiations is particularly significant when the issues on the table are both politically sensitive and technically complex. Negotiation on such issues has usually been recurrent, in the sense that state commitments have been built up stepwise over a longer period of time, covering not only years but decades. Earlier stages of the cycle of negotiations produce end results that condition regime-building accomplishments in ensuing phases of the talks. Regime rules may gradually become strengthened from one negotiation event to the next. However, in complex and politically sensitive areas, the gradual reinforcement of norms and consensual knowledge may be more important an outcome in a long-term perspective than the stepwise hardening of regime rules.

Organization of the Book

The book includes two main parts. The first part aims to highlight and elucidate the research area of risk and negotiation, as seen from a number of theoretical perspectives.

Christophe Dupont relates traditional risk theory with negotiation theory. The purpose of his contribution is to establish a theoretical overview of the kinds of risks with which negotiating parties are confronted. His ultimate aim is to evaluate how issues conceived of as risks fit into, or deviate from, this categorization.

Fen Osler Hampson looks at international mediation as a kind of risk control. From this perspective he identifies categories of risks that are different from those pertaining to the traditional theoretical analysis displayed by Christophe Dupont.

Sabine Koeszegi highlights the fact that trust and trust-building are important elements of international negotiations. In a theoretical analysis she clarifies what trust is and what the conditions and mechanisms for trust-building are.

Rose McDermott argues that Prospect Theory can explain, and ultimately predict, how negotiation parties will perceive and particularly evaluate risks in negotiation. Her chapter demonstrates and defends this argument.

William Zartman demonstrates how issue-related risks constitute an additional element of difficulty in the path to agreement in preventive diplomacy, beyond the usual element of actor-related risk that troubles any agreement on contingent outcomes.

While these chapters all look at risks, they mainly address international negotiation. Their function is to give an introduction to the main theme of the book, risks in negotiation. In this exploratory study, a comprehensive review of the large risk literature has not been necessary or even useful. The main topic of the book is the very specific question of how negotiated risks are looked at and handled in different kinds of international negotiation (bilateral, multilateral) taking place in different issue areas. This is a research theme that has attracted much attention in the many books and articles that discuss the general issue of risk. There are no established schools of thought addressing negotiated risks in theoretical terms. It is in this sense that this study is innovative. The task of the theoretical part of the book is to give some insight into how differently risks in negotiation can be approached in the frameworks of analysis linked to international negotiation theory.

The chapters of the second part of the book describe and analyze actual negotiations in which negotiated risks have been addressed in various issue areas.

Terrence Hopmann examines the perception, communication, assessment, and management of risk associated with negotiations on the control of biological weapons.

Victor Kremenyuk describes Soviet–American negotiations on security issues in the 1960s.

Helmut Böck and Dana Dabrova present Austrian–Czech negotiations on the Temelín reactor as being typical of similar bilateral problems of other states.

Keith Compton identifies actors, issues, and strategies in the negotiations on spent fuel import, storage, and reprocessing in the Russian Federation.

The search for joint risk management in the framework of international climate change negotiations is critically evaluated by Gunnar Sjöstedt.

The management of security and safety risks in the Baltic Sea Region is the subject of the contribution by Boris Porfiriev.

International negotiation of joint financial risk management is addressed by Bev Sauer.

Joint Ventures in China as examples for negotiating risks across cultures are analyzed by Guy Olivier Faure.

Although the chapters of the second main part of the book describe several cases where negotiated risks have been addressed in international negotiation, this book has not been designed as a comparative case study in the strict sense of the term. Comparative case studies are meant to look at the same, or very similar, phenomena appearing in the various cases. One example could be the extent to which scientists are participating in international talks on disarmament and the environment. However, in this exploratory study of negotiated risks, the cases reported have a function

that is different from specified, systematic comparison. The purpose is to capture both general similarities and variation across a relatively broad selection of cases. This approach expresses the principal function of an exploratory study which is to develop and formulate specified research questions rather than to test hypotheses.

In the concluding chapters, lessons are drawn for theory and practice: On the one hand, tentative conclusions are drawn from the individual contributions to this study, (e.g., the process stages at which the risk character of the issues really matter). On the other, further research needs are indicated. Finally, there is a discussion as to what measures could be taken to facilitate the handling of risks in negotiation.

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Negotiation Risk: Controlling Biological Weapons

P. Terrence Hopmann

Introduction

This chapter examines the perception, communication, assessment, and management of risk associated with negotiations on the control of biological weapons. After a brief introduction to the relevant theoretical issues concerning how risk affects negotiations, it presents a brief history of negotiations to limit biological agents as instruments of warfare and terrorism, and then focuses primarily on the negotiation of the 1972 Biological Weapons Convention.

The main argument is that the assessment of the potential for biological agents being used by armies or terrorist organizations has changed dramatically over the past century; similarly the perceived consequences of the use of these agents have also evolved. Finally, the degree to which a shared assessment of those risks has been diffused through the international system has altered, at times resulting in fundamental consensus and at other times producing significant disagreement. The result is that the process through which limitations on biological weapons have been negotiated has also varied over time in relation to these changing perceptions, assessments, and norms. A consequence of these changing and diverging assessments of risk has been that the content of the measures negotiated internationally to manage the risk emanating from biological agents has also been significantly altered to adapt to the changing environment.

I hypothesize that the willingness and eagerness of states to negotiate regulation and limitation of biological weapons will generally vary in relationship to the perceived risk associated with these weapons: as the perceived probability of their use and the severity of the consequences resulting from their use rises, so will interest grow in negotiating restraints that might reduce these risks. I find that this general relationship tended to prevail throughout the 20th century. However, in the

P. Terrence Hopmann
Conflict Management Program, Paul H. Nitze School of Advanced International Studies, John Hopkins University, Washington D.C., e-mail: pthopmann@jhu.edu

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first decade of the 21st century there has been a significant rise in the perceived risks associated with biological weapons, especially the dangers associated with possible use of these weapons by terrorists. This risk assessment has been widely diffused throughout the international community and has resulted in a broad consensus among national policymakers, officials in international organizations, as well as among the community of security experts and especially within the public at large in most developed countries. Paradoxically, however, interest in negotiated limitation on the risks associated with biological weapons has declined, especially in the United States, the country that would appear to be most affected by the perceived increased risks. The United States essentially pulled out of negotiations to create a verification and enforcement mechanism at the 5th Review Conference of the Biological Weapons Convention in 2001. In spite of some modest progress in the 6th Review Conference in 2006, unilateral national measures have generally taken precedence over internationally negotiated restraints on these potentially lethal weapons.

Biological warfare agents have been defined as "living organisms, whatever their nature, or infective material derived from them, that are intended to cause disease or death in man [sic], animals, or plants and whose effectiveness depends on their ability to multiply in the person, animal, or plant attacked" (Floweree, 1993, p. 999). In some instances, toxins that are produced by biological agents but which do not reproduce themselves may also be included in the basic definition. Biological agents include bacteria that cause disease such as anthrax or the plague, viruses such as smallpox and ebola, rickettsiae that cause typhus and other similar severe fevers, as well as pathogens that may kill livestock or crops. The risk associated with biological pathogens may be evaluated according to several different criteria: 1) toxicity, transmissibility, and lethality; and 2) suitability for weaponization and dispersal, which may include the ability to target the agent against a specific population, ease of dispersal, the ability to resist or overcome countermeasures, and the ability to mimic natural diseases so as to avoid early detection by the intended victims (Tucker, 2003). The suitability of toxins or pathogens for biological weapons depends on the "availability of virulent strains; ease of production; lethality; particle size and weight; ease of dissemination; and stability in storage and after release into the environment" (Cirincione et al., 2005, p. 58). Less lethal agents that can cause widespread panic and affect large populations may offer greater potential as biological weapons, especially in the hands of terrorists, than highly lethal pathogens that are likely to infect only limited numbers of people or that can be contained by rapid application of appropriate countermeasures.

Biological weapons have often been classified as "weapons of mass destruction" (WMD) along with nuclear and chemical weapons, although this usage remains controversial. It is possible, but unlikely, that a biological weapon attack could produce the same number of casualties as, or even more casualties than the explosion of a nuclear warhead; in both cases, however, only estimates can be made as historically only a few people have been killed in biological weapons attacks and none have been

killed in nuclear strikes since 1945.[1] The vast majority of killing in warfare results mainly from so-called "conventional" weapons, including rifles, artillery, bombs, and landmines; these are the weapons that have actually caused "mass destruction" in all previous wars. But we naturally place nuclear weapons in a special category, not because of the mass destruction that they have wrought (with the obvious exceptions of their use at Hiroshima and Nagasaki in 1945) but because of their potential to kill millions of people and destroy entire cities, perhaps even countries or the planet as a whole if unleashed in large numbers. By contrast biological weapons are unlikely to destroy infrastructure, though their dispersal through food or water systems, as well as through aerial delivery, could also cause large-scale suffering and even numerous deaths. They do share with many possible uses of nuclear weapons the characteristic that they are most likely to be directed against civilian populations, noncombatants who, on moral and legal grounds, should be spared the direct agony of conflict. For this reason, it might be preferable to place biological agents in a category of weapons that have become stigmatized, whose usage has generally been subject to a broad normative taboo because of their relatively modest military utility in contrast to their effects on victims who are primarily innocent noncombatants. Furthermore, the benefits to be obtained are seldom, if ever, proportional to the harm done if used against human beings.[2]

The primary "mass effect" of biological weapons, therefore, is a psychological one, namely, their ability to create widespread fear or even panic in entire populations largely because of the uncertain nature of their use or their likely consequences once unleashed. It is this feature that has made them sometimes a weapon "of choice" for terrorists who are typically more interested in creating mass

[1] According to data compiled by the Monterey Institute of International Studies, in the three-year period 2000–2002, there were 703 incidents involving biological agents, of which 692 turned out to be hoaxes. The large number of hoaxes was inflated by some 600 hoaxes reported in 2001, mostly in the United States in the aftermath of the anthrax-laced letters delivered in Washington and New York in September, with some 500 of those hoaxes linked to foes of abortion; in the 40 years between 1960 and 1999 there were 66 criminal events and 55 terrorist events, again mostly hoaxes. Throughout this entire time, criminal attacks accounted for only 29 deaths and 31 injuries, whereas prior to 2001 there were no deaths reported from biological weapons usage by terrorists anywhere in the world. Therefore, the five deaths in 2001 from the anthrax letters appear to be the only deaths since 1960 attributable to the use of biological agents (and it is still unknown whether this should be classified as a criminal or terrorist event) recorded in the Monterey Institute's extensive data set. See http://cns.miis.edu. At the same time, a 1993 study by the U.S. Office of Technology Assessment concluded that dropping a 100 kilogram aerosol device containing anthrax spores on the Washington, D.C., area on a clear, calm night could kill between one and three million people, which at least puts the potential lethality of a biological attack in the same order of magnitude as dropping a large nuclear bomb on the Washington area; indeed, the same study estimates that a 1 MT hydrogen bomb would kill between 570,000 and 1,900,000 (U.S. Congress, 1993).

[2] The stigmatization of weapons systems in the case of nuclear weapons is analyzed in Tannenwald (1999). Although their stigmatization has to do partly with their massive destructive effects, it is also the indiscriminate nature of nuclear weapons that has made their use taboo. On these grounds, at least, chemical and biological weapons, especially the latter, would seem to share the defining characteristic, along with anti-personnel "conventional weapons" such as landmines and cluster bombs, as stigmatized weapons whose use should create massive and broadly shared international revulsion against any party that employed them.

psychological effects than they are in actually killing large numbers of people. Furthermore, the ease with which biological weapons can be obtained, diffused, and actually utilized makes the subjective probability that they will be used appear greater than the likelihood that nuclear weapons will be unleashed, even by terrorists or so-called rogue states. It is for this reason that the psychology of "risk," and the resulting fear that is generated by the threat of biological weapons, provides a useful perspective from which to view negotiations on the control of biological weapons.

The Subjective Assessment of Risk—A Theoretical Analysis

There are many ways of looking at the impact of the risks associated with the use of biological weapons and international efforts to reduce or at least to manage those risks through negotiated agreements. Essentially, risk involves the subjective probability assigned by an individual or collective agent to the likelihood that a negative outcome believed to be costly or harmful will occur. Paul Slovic, one of the leading researchers on the psychology of risk, has emphasized that, "risk does not exist 'out there,' independent of our minds and cultures, waiting to be measured. Human beings have invented the concept of 'risk' to help them understand and cope with the dangers and uncertainties of life." Therefore, he concludes that subjective risk assessments are "influenced by a wide array of psychological, social, institutional, and cultural factors" (Slovic, 1992).

Formally, Bayesian statistics suggest that we should be able to calculate risk by assessing the probability that an expected negative outcome will occur, weighted according to the negative value assigned to the outcome. Probability alone is not sufficient, as we should consider an event with horrendous negative consequences but with a low probability to be riskier than a much higher-probability event that carries only modest costs. Prospect theory suggests, furthermore, that individuals will tend to evaluate losses more significantly than they value equivalent gains with an equal probability, and by extension we may also assume that events with very high negative consequences and a low probability of occurrence may be assigned greater significance than events of lesser consequence, even if they are more likely to occur (see chapter by Rose McDermott in this volume). In other words, the final expected value of an event cannot be calculated in a formal mathematical sense based solely on determining the product of the probability times the value of the event. Bayesian statistics also suggest that actors will continuously update their assessment of risks based on the frequency and severity of similar or identical events over time.

Obviously, assessments of risk are not the product of purely statistical reasoning, even of the Bayesian variety, which weights outcomes by the value assigned to the outcome multiplied by the probability of the event occurring, and which constantly updates expectations over time based on the past sequence of events. Using this reasoning, prior to September 11, 2001, the probability that a group of 19 men armed only with box cutters would hijack four large airliners and successfully crash three of them into large office buildings was zero; as it had never happened before, there

were no prior data on which to construct any kind of useful statistical assessment of the likelihood. And after 9/11, subjectively, political leaders, the mass media, and the general public (especially in the United States) have acted *as if* the probability of another occurrence of this event is close to certain. This too most likely represents an overestimate of the risk associated with this form of terrorism, as the recency and salience of the dramatic events of 9/11 overwhelmed any normal Bayesian updating of probabilities based on statistical reasoning alone. The risk of future similar events was likely exaggerated for several reasons.

First, the September 11 hijacking worked so well for the terrorists only because they were able to take advantage of the fact that few people, if any, had even considered such a scheme as plausible. The extremely low subjective probability of its occurrence allowed the hijackers to perpetrate their crime successfully, because those who might have prevented their operation at numerous stages were caught by surprise and were unprepared to take any action that might have derailed the hijackers' plans. The one notable exception was the United Airlines plane on which passengers, having heard by phone from family members of what had transpired in New York, sacrificed their own lives to prevent the hijackers from reaching their assigned targets in Washington, D.C., by causing the airliner to crash in Pennsylvania.

Second, the actions taken by authorities since 9/11 have made the probability of an exact repetition of the events of 9/11 very unlikely, even if any terrorist group held out any hope that such a scheme might work again in the absence of the element of surprise. Thus, the ironic conclusion is that the actual probability of events closely resembling the 9/11 attacks happening again is likely close to zero. However, the public, media, and especially policymakers have behaved as if they thought it was virtually certain, as evidenced by the intensive efforts to enhance airport security after 9/11 while leaving other vulnerable points of access for terrorists such as seaports largely unprotected. Thus, they have focused their attention almost exclusively on preventing the last attack rather than understanding the inherent logic of surprise in which determined but intelligent terrorists will likely seek to engage in actions that an unsuspecting public and policymakers perceive to be of extremely low probability. In short, public policy responses to risk have replaced complacency with an overvalued expectation of one form of risk to the exclusion of others, perhaps thereby resulting in failure to engage in actions to lower the risk of attacks that may be far more likely.

In order to understand how risk operates, and how it can be managed more effectively, we have to analyze how subjective assessments of risk are formed, how they change, and why they may so often diverge from a more formal or statistically based analysis of risk. The psychological literature on the formation of subjective assessments of risk argues that risk is inherent in situations where people are faced with considerable uncertainty, and it appears that individuals often develop certain heuristics to help them cope with that uncertainty. Specifically, the experimental research suggests three categories of cognitive biases that tend to affect the subjective assessment of risk (Tversky and Kahneman, 1982).[3]

[3] The analysis below is based on Amos Tversky and Daniel Kahneman, "Judgment under uncertainty: Heuristics and biases," in Kahneman et al. (1982).

First, there are "representative biases." Specifically, individuals may not attribute sufficient attention to the sample size or the frequency upon which a probability is based and thus draw conclusions that are not justified by the sample. They may assume that the law of large numbers will usually apply and that any event will therefore reflect the median expectation, so that outlier events are ignored altogether. They may draw false inferences from past events, such as the common assumption made by baseball announcers that a batter who has not had a hit in his last 20 times at bat is "due" to get a hit, that he is somehow more likely to get a hit in the current turn at bat than his overall "batting average" would suggest.[4] These incorrect inferences may produce an inaccurate assessment of the probability of negative outcomes or risk.

Second, there are "availability biases." These generally suggest that perceptions of risk are influenced by factors such as the salience or recency of an event, or other factors that make a particular event stand out prominently or easily retrievable from memory. In addition, estimations of risk involving events that have never taken place previously may be influenced by the extent to which an outcome can be "imagined" as plausible. Thus, prior to 9/11, an attack of this nature was hardly imaginable and there was no similar prominent or salient event on which to develop any assessment of its likelihood. Afterwards, the recency and salience of this traumatic event made a repeat seem almost certain. As time passes in which no similar event occurs, the subjective assessment of the probability of its occurrence no doubt declines rapidly. In other words, there are fairly rapid changes in the subjective assessment of risk, even though a more "objective" assessment might suggest that the actual probability remains more or less constant over time. Thus certain events may be perceived as being excessively likely even if the underlying distribution has not changed significantly.

Third, there are biases associated with "anchoring." That is, parties may have an initial or known value that forms a baseline, and they may be overly cautious in their openness to variations around that baseline; in some ways, this may introduce a reverse bias from the one just described. Sometimes these assessments may be useful and economical, but they may also be misleading. For example, it may be easy to assume that tomorrow's weather will be more or less the same as today's, and in the absence of any better information, this basis for judgment may be better than any other; on the other hand, in a certain percentage of cases it may turn out to be utterly incorrect, which may sometimes entail serious costs.

When we apply an analysis of risk to the issue of biological weapons, several factors may affect our assessment of risk. This is a case where the statistical

[4] If an individual is batting 0.300 throughout a baseball season, and each trip to the plate is considered a statistically independent event, then the probability of getting a hit at any single at bat is 30 percent, regardless of the batter's recent performance. However, these may not be strictly independent events, as a "slump" may reflect distraction, illness, or injury, or perhaps self-imposed pressure to succeed; however, in any of these cases, the slump would lead to the prediction that the probability of getting a hit should be below 30 percent, contrary to the assumption that the batter is "due" to get a hit following a lengthy batting slump. In such cases, the probability of getting a hit should be weighted so as to assign greater importance to recent performance rather than the long-term average.

probabilities based on the past use of biological weapons often diverge radically from subjective assessments by policymakers, the media, and the general public. Statistically speaking, the probability of being the victim of a biological weapons attack is extremely low; in fact, it approaches zero. Every time one enters a car or ventures outside during a thunderstorm, one is far more likely to be killed in an automobile accident or by a lightning strike than by a biological weapons attack. In any given year, far more people are likely to be infected by and die from common influenza than any bacteria or virus delivered by a biological weapon.[5] Yet for most people the dread associated with the risk of being attacked with biological weapons far exceeds the fear associated with the much greater danger of getting into an automobile or an airplane, or walking outside in a rain storm, or venturing out in crowds during flu season. Five people died tragically in the series of anthrax incidents in the fall of 2001, perhaps the only fatalities attributable to a form of bio-terrorism in recent decades. But over the same period of time that these five deaths occurred, far more people were murdered in gun violence or killed in automobile accidents.[6] Policymakers have responded by taking dramatic measures to reduce the risk of additional infection from biological terrorism, while doing essentially nothing to reduce the availability of guns or of alcohol to motorists.

Thus, both the assessment of risk and the public policy consequences of biological warfare or terrorism appear to be based more on a subjective dread than on an assessment of the statistical risk associated with the actual historical experience of biological agents. Similarly, the cumulative effect of gun violence and automobile-inflicted deaths in the United States, and for that matter in the world at large, is far greater than the consequences of any previous usage of all weapons of mass destruction combined. Nonetheless, more public policy attention is devoted to managing the risk resulting from the low probability of a catastrophic event such as a WMD attack rather than managing the high probability of an event that most people have taken to be a routine occurrence for the world's population as a whole, namely, automobile accidents or violence inflicted by handguns and other so-called light weapons. What factors might account for this differential risk assessment and diverging public policy response?

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[5] In 2001 about 62,000 deaths in the United States were attributed to influenza and pneumonia, based on statistics compiled by the U.S. Center for Disease Control, National Center for Health Statistics. See www.nhtsa.gov/people/Crash/LCOD/Rnote-LeadingCausesDeath2001/pages/page2.html (last accessed 19 October 2004). As noted above, in most years the number of people killed in biological weapons attacks is zero.

[6] *Ibid*. In 2001 an average of about 3,500 per month were killed in automobile accidents in the United States, roughly equal to the number of people killed in New York and Washington during the terrorist attacks on September 11, 2001. Traffic accidents are the leading cause of death in the United States for persons between the ages of 4 and 34 years old. The difference in the emotional response to these statistics may be traced primarily to the horror associated with the fact that the September 11 attack was a deliberate act carried out by individuals who expressed hatred for the United States in general and for the "Wall Street–Pentagon" clique specifically, and who therefore might strike again. However, the public policy response in terms of attention and resources, including the creation of an entire cabinet-level Department of Homeland Security, far outdistanced the effort to reduce the number of people driving while intoxicated, the major cause of the far more frequent automobile fatalities in the United States.

Jessica Stern has suggested that the prospect of being attacked with biological weapons causes a stronger emotional reaction than many other risks that people accept on a daily basis, especially because they generate feelings of dread, disgust, and horror. Fear of disease, contagion, and especially of epidemic is ingrained in our belief systems, and the possibility that disease might be spread deliberately to achieve political ends creates even greater horror than the "natural" spread of disease. The fear of "exotic" diseases, which are unfamiliar and thought to be "alien" or "foreign" to people in developed countries, but that might be spread by rogue states or terrorists, generates particular alarm. In short, risk tends to produce an intense emotional reaction most often when certain characteristics are present: "involuntary exposure, unfamiliarity and invisibility, as well as instances in which victims may not realize that they were exposed or the effects are delayed, when the mechanism of harm is poorly understood, or when long-term effects or the number of people likely to be affected is difficult to predict" (Stern, 2002/03). The fears associated with the potential use of biological weapons, especially by terrorist organizations, appear to meet all of these characteristics.

Furthermore, policymakers may be rather casual about assuring an adequate supply of influenza vaccine, as happened in the United States in 2004, even though the appearance of influenza is virtually certain and the annual death toll in the United States alone typically amounts to over 60,000 persons. By contrast, they are far more likely to fear the public wrath of being caught unprepared in the face of a biological weapons attack, even if it kills as few as five people. This is a particular consequence generated by the use of biological weapons by terrorist organizations. What seems to create a strong emotional reaction is not literally the statistical probability of being directly affected, but the random element that terrorists employ to make everyone believe that they are potentially vulnerable to attack, as well as the fear that any incident may be the beginning of a much larger attack, which in the case of biological agents could signal the onset of a widespread epidemic. And policymakers thus inherently include in their own risk assessment not only the probability that some harmful event will occur, but also the political consequences for them of making the wrong prediction and failing to prepare adequately for the unforeseen or low-probability events that do occasionally occur. They may thus devote inordinate attention and resources to low-probability occurrences if they perceive that the public dread of these occurrences is so great that the failure to act could be politically risky.[7]

Negotiations to manage the risk of biological weapons are often complicated by the different assessments of risk by the various parties to the negotiation. These different assessments of risk, however, are not the same as those faced in traditional bargaining situations where parties typically have more or less inversely related preferences; this is not a type of negotiation where one party seeks to "win" at the expense of another, as the goal of negotiations designed to manage the risks of biological warfare is one of developing a shared "regime" to manage the risks

[7] See the chapter in this volume by Rose McDermott (p. 94), which notes regarding Prospect Theory that "people tend to overweight low-probability events, while simultaneously underweighting medium- and high-probability events."

jointly. Negotiators have to try to work not only with representatives of other countries who may have very different assessments of the risks associated with particular outcomes, but also with different political consequences for miscalculating or failing to prepare for the unforeseen, politically charged risks that may be present in an uncertain international environment. As Zartman notes in this volume, therefore, negotiations aim not only to "prevent the danger" of the use of biological weapons but also aim at "the prevention of the negative effects," including political side effects. The parties may thus share a similar perception of the risk of an arms race in biological weapons, while also perceiving different risks associated with the political consequences of incorrectly assessing that risk. It is precisely this difficult task of: 1) balancing unknown risks; 2) facing trade-offs between competing risks associated with different negotiated outcomes, 3) the political consequences of reaching agreements that may later prove risky in an emotionally charged but highly uncertain realm such as biological warfare and terrorism, that together have made the negotiation process intended to manage these risks so complex and difficult over the course of the 80 years since the issue first entered the international agenda in 1925.

Biological Weapons Negotiations—Perceptions of Risk and the Negotiation Process

Biological warfare has been with us for some time; for example, in 1767 in the French and Indian wars, British troops used blankets contaminated with smallpox to spread the disease among Native American populations. However, it was only after medical advances in the 19th century uncovered the microbial basis of infectious diseases that biological weapons in their modern sense became readily available (BASIC, 2001). Early efforts at controlling these weapons generally saw them lumped together in the same category as chemical weapons, that is, with inert (nonliving) toxins that could be used on people, animals, or plants. Indeed, the use of "gas warfare" during World War I meant that primary attention was focused in the early years of the 20th century on chemical rather than biological weapons. However, both categories of weapons were covered under the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous, or Other Gases and of Bacteriological Methods of Warfare, signed in Geneva on 17 June 1925, which prohibited the use, but not the possession, of all weapons falling under this rubric.

In spite of this prohibition, many states stockpiled these weapons during World War II, but they were generally not used in combat (with the exception of some Japanese usage of chemical weapons in China beginning in the late 1930s) nor even integrated into military plans largely because of "doubts about their effectiveness, fear of retaliation, and aversion to gas warfare by military and political leaders" (Floweree, 1993, p. 999) on all sides, despite the horrible levels of violence employed in the conduct of that global conflict. Interest in negotiating agreements covering these weapons was based less on the risk that they might be used than on a normative taboo that grew up over their use in combat. The protocol focused on the

principle that the use of such weapons in warfare "has been justly condemned by the general opinion of the civilized world," and, therefore, focused less on verification and sanctions for violation than it did on the normative taboo and the general opprobrium that would accompany their use by any state.

The United States demonstrated its apparent lack of concern about the risks associated with the use of such weapons by allowing the Geneva Protocol to languish in the Senate for over 25 years, after which President Truman withdrew it from consideration because of the hostility of the Army Chemical Corps (Floweree, 1993, p. 1000). In the years immediately after World War II the United States, along with the Soviet Union and the United Kingdom, had embarked on large-scale programs to add these weapons to their arsenals, and the fact that each of the Cold War antagonists noted that its opponents possessed similar weapons in large numbers continued to provide the primary justification for their continued production and stockpiling. As long as one's enemies possessed such weapons, it was possible to imagine that they might be used. Why else, one might ask, would they produce and stockpile these weapons in their arsenals? At the same time, arms control negotiations during this period focused on the risks associated with thermonuclear war, following the use of these weapons by the United States against Japan in 1945 and the entry of the Soviet Union and the United Kingdom into the atomic weapons "club" in 1949.

Therefore, with a few minor exceptions, chemical and biological weapons were treated as "weapons of mass destruction" which were of considerably less interest and concern than nuclear weapons. North Korea accused the United States of using biological weapons during the Korean War, which the United States vehemently denied, and the Soviet Union tried to pressure the United States into ratifying the Geneva Protocol, but no new negotiations were initiated. Similarly, in 1966 the Hungarian delegation to the United Nations charged the United States with violating the Geneva Protocol through its use of herbicides such as Agent Orange in Vietnam, and they proposed making any use of herbicides and riot control chemicals an international crime. The United States and most Western nations insisted that the Geneva Protocol did not apply to non-toxic agents, although the interpretation concerning the range of weapons prohibited under the 1925 Protocol remained subject to debate. Clearly the United States government perceived the risk of the use of lethal biological weapons agents in warfare to be low, and these small risks were significantly outweighed by the U.S. interest in avoiding any constraints on the use of non-lethal agents, mostly chemical weapons such as Agent Orange and tear gas. The main focus of arms control negotiations was thus directed at nuclear weapons, at least until after the Partial Nuclear Test Ban Treaty was signed in 1963 and the Nuclear Non-Proliferation Treaty was signed in 1968.

During this hiatus, the foundations for a new approach to biological weapons disarmament came from a report prepared for the British Foreign Office by the well-known international relations scholar, Hedley Bull, serving at that time as Head of the Arms Control and Disarmament Research Unit. Bull noted that there was little risk that biological weapons would be used by a major power: the delay that would be required before they had an impact, the difficulty of targeting them directly against enemy forces, their susceptibility to changing climatic conditions,

their potential to spread out of control together led to the conclusion that they were of negligible military utility to any country with a sophisticated military force structure. The real risk instead was seen to emanate from the potential acquisition of these weapons by "underdeveloped" countries. As the report concluded:

> every success in exorcising the nuclear threat must revive interest in other means of mass destruction, and every advance in biological knowledge in the under-developed countries will hasten their ability to make them; neither development is one that we would, or could, obstruct, so we must forestall their likely side-effects (FCO, 1968).

The Bull report further recognized that the issues involved in verification of a ban on biological and chemical weapons were exceedingly complex and provided a potential stumbling block for any negotiated agreement. The report acknowledged the desirability of inspecting potential sites for the development of these weapons in the "under-developed" countries, but noted at least three obstacles to this: 1) these countries would certainly insist on reciprocal rights of inspection in the more developed countries with many potential sites that would have to be opened for inspection; 2) any such inspections would be opposed by most countries of the West, especially the United States, both to protect existing bio-defense programs and the proprietary rights of chemical and pharmaceutical companies; and 3) the Soviet Union would likewise oppose any regime of on-site inspections as a matter of general principle, as at that time it consistently opposed intrusive verification for all other measures of arms control.

Therefore, Bull's report proposed separating the issues of chemical and biological weapons: in the former case, an unverified ban was unthinkable and a ban entailing intrusive inspections was non-negotiable, but in the latter case the low risk that biological weapons would be used by states possessing them made an intrusive verification regime unnecessary. Although Bull's report gained fairly broad acceptance within the British government after 1968, it was not presented right away in the Eighteen Nation Disarmament Conference (ENDC) in Geneva largely because of opposition from the United States. U.S. officials were very much opposed to opening chemical or biological weapons facilities to international verification, fearing that the risk of losing vital secrets clearly outweighed any limited benefits from such a ban. William Foster, Director of the U.S. Arms Control and Disarmament Agency, emphasized the risk that an uninspected ban would set a bad precedent for all future negotiations on arms control and disarmament (Wright, 2002, p. 328). If nothing else, the Bull report clarified the difficulty of balancing competing risks that would bedevil negotiations on biological weapons thereafter.

Only after the negotiations on the Nuclear Non-Proliferation Treaty reached a successful conclusion in 1968 did the Geneva-based Conference of the Committee on Disarmament (CCD, previously the ENDC) turn its attention to serious consideration of a ban on chemical and biological weapons, separated from nuclear weapons for the first time in the post–World War II period. A major public impetus at that time was provided by a special report issued by the UN Secretary-General and written by a panel of leading experts: Chemical and Bacteriological (Biological) Weapons and the Effect of Their Possible Use. The main thrust of this report was that the consequence of the use of these weapons was highly unpredictable,

and this uncertainty itself constituted the major risk associated with this category of weapons. This was followed by a resolution presented to the UN General Assembly by 12 non-aligned nations participating in the Geneva Conference of the Committee on Disarmament, which condemned any use of chemical and biological weapons as contrary to international law; the resolution passed by a vote 80 to 3, with 36 abstentions; opposition came only from Australia, Portugal, and the United States (Floweree, 1993, p. 1001). Clearly international attention began to focus on the issue and pressure grew on the United States, coming not only from non-aligned countries but also from many Western allies, to embark upon serious negotiations.

Domestically, 1969 also marked a significant departure in U.S. policy with regard to biological weapons. President Nixon announced on 25 November that he would submit the 1925 Geneva Protocol to the Senate for ratification, with the understanding stated subsequently by Secretary of State William Rogers that the United States did not consider that the treaty applied to the use of non-lethal herbicides and riot-control agents. The U.S. Senate, however, delayed ratification until a compromise was worked out, allowing the U.S. ratification to take place on the eve of the 50th anniversary of the treaty in 1975 (Floweree, 1993, pp. 1001–1002). President Nixon's announcement in 1969 was accompanied by a unilateral and unconditional renunciation of biological weapons, as the President ordered all biological weapons research facilities to be shut down and all stockpiles destroyed, with the exception of small amounts that could be retained for "defensive" purposes, especially for research on anti-toxins that might be needed if biological agents were ever used against the United States or its allies. The primary rationale for Nixon's unilateral renunciation of these weapons seems to be that they were of negligible military value and that the risk of infectious disease spreading out of control could never justify the use of weapons that were likely to be of so little use in combat.

The Nixon administration's assessment of the risks associated with biological weapons seemed to contain several components: although epidemics in civilian populations would not serve any demonstrable military value, they would risk spreading beyond the borders of the country under attack, perhaps even infecting the country employing the weapons as severely as their intended victim (Reed and Shulman, 2002). Furthermore, the threat to retaliate with biological weapons would not deter their use as effectively as a threat to retaliate with nuclear weapons.[8] The administration believed that the greatest risk of biological weapons proliferation was not that other major powers would obtain them or use them against the United States, but that continued production and stockpiling of these weapons would stimulate their proliferation in the less developed regions of the world so that they would become a "poor country's weapon of choice" (Wright 2002, p. 7). Thus biological weapons were no longer needed to deter the risk of their use by other major powers such as the Soviet Union, which would be unlikely to unleash them in any case and which could be deterred from doing so by the threat of nuclear retaliation. Rather, the greater risks now emanated from the proliferation of these weapons to less developed states that

[8] Nixon's speech writer, William Safire (1998), contends that Nixon told him, "We'll never use the damn germs. So what good is biological warfare as a deterrent? If someone uses germs on us, we'll nuke 'em" (cited in Wright, 2002, p. 334).

had limited conventional military capabilities with which to confront the powerful states and which were perceived as having less to lose from initiation of a biological weapons attack directed against a major power. Thus, arms control measures that might prevent these weapons from getting into the hands of more states, especially poorer countries, received a new impetus.

This assessment obviously moved the United States closer to the position that the British government had advocated on the basis of the 1969 Bull report. The United States was still concerned about an unverified ban, but the view prevailed that an agreement could be effectively self-enforcing, as no rational great power would want these weapons in the first place and sufficient pressure could be brought to bear on the poorer countries by an internationally negotiated agreement to make it extremely difficult and costly for them to acquire such weapons. Furthermore, the risks of a violation of the agreement were not perceived to be as great as the risks resulting from a verification mechanism that might be used as a cover for either commercial or military espionage. As Susan Wright (2002, pp. 334–335) notes, the most serious risk at the time was increasingly perceived to be the proliferation of biological weapons to the world's poorest countries:

> the basic problem . . . was defined not as that of the large BW [biological weapons] stockpiles of the superpowers but rather as the future acquisition of biological weapons as force equalizers by developing countries. The move to biological disarmament was justified by the British government to the United States as a way to protect military advantage rather than as a step toward general and complete disarmament.

As a result of this changed risk assessment, the United States joined the United Kingdom in support of the proposition that a ban on biological weapons was more practicable than a limitation on chemical weapons, so that the two categories of weapons should be separated. An agreement only on biological agents would be negotiated first and a chemical weapons ban would be put off until issues of verification could be resolved. This position was initially opposed by the Soviet Union until 30 March 1971, when it abruptly changed its position and introduced a draft agreement in Geneva dealing only with biological weapons and toxins. After several months of joint work, the U.S. and Soviet co-chairs of the Conference of the Committee on Disarmament (CCD) submitted separate but identical drafts on 5 August 1971, which were endorsed by the UN General Assembly in December of that year. President Nixon submitted the joint agreement to the Senate on August 10, 1972, calling it "the first international agreement since World War II to provide for the actual elimination of an entire class of weapons from the arsenals of nations" (Floweree, 1993, p. 1005).

The 1972 "Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction" (known as the Biological Weapons Convention [BWC]) prohibited the development, production, stockpiling, and acquiring in any way of microbial or other biological agents or toxins "of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes" as well as the possession of any weaponized equipment or means to deliver such agents for hostile purposes. The parties agreed to destroy all stockpiles of these agents in their possession, retaining

only those portions that might be required for research for possible defensive measures, and they agreed not to transfer any elements of these stockpiles to any other party. Any suspicion concerning possible violations of the Convention was first to be negotiated among the states parties to the Convention themselves. If that procedure failed to resolve the dispute, the ultimate recourse was to submit the complaint to the UN Security Council, where the five permanent members would be able to exercise their veto power if any punitive action would be directed against them or their close allies. Each state party would be responsible for reporting its own actions to comply with the agreement and to adopt domestic legislation to enforce the terms of the agreement. Provisions were included that would permit states to come to the aid of other parties that might be threatened by a violator of the treaty. Finally, the agreement called for holding review conferences every five years to consider ways in which the agreement might be modified and/or strengthened in light of new developments, and it also called on the parties to pursue agreement on a similar ban on chemical weapons.

The debate over ratification of the BWC in the U.S. Senate was intense. The administration of President Gerald Ford, who had recently assumed the presidency following the resignation of President Nixon, focused on three issues:

1. The military utility of biological weapons is dubious at best: the effects are unpredictable and potentially uncontrollable, and there exists no military experience concerning them. Hence the prohibitions of the Convention do not deny the United States a militarily viable option and verifiability is therefore less important.
2. Biological weapons are particularly repugnant from a moral point of view.
3. Widespread adherence to the convention can help discourage some misguided competition in biological weapons, especially among third-world countries (SIPRI, 1975, p. 501).

Therefore, U.S. ratification of the BWC, as with many other signatories, was based on a risk assessment that the likelihood of a militarily significant violation of the treaty was substantially less serious than the possibility of unfettered competition in the development of this morally "repugnant" weapon system. The Convention was ratified by the Soviet Union and the United States in early 1975, and it entered into force on 26 March 1975. As of 2006, 169 countries were parties to the convention and 16 others had signed, but not ratified it.

The provisions of the 1972 BWC were premised on the belief that the Convention would be largely self-enforcing, as no state would have an incentive to violate it given the low probability of using biological agents as weapons of war. The "anchoring effect" of a baseline of zero usage became the basis for assessing that the probability of future use also approached zero. Not long after the entry into force, however, this presupposition began to be questioned. Concerns about compliance with the agreement increased substantially following reports of an anthrax outbreak causing at least 64 civilian deaths in the Soviet town of Sverdlovsk, previously known as a center of weapons research, including biological agents. The report became a central issue for discussion at the first review conference of the

BWC in Geneva in March 1980. At that time the Soviet government insisted that an outbreak of gastric anthrax had been caused by contaminated meat, vehemently denying that it represented a violation of the BWC. This view was challenged by the United States, which insisted that the anthrax outbreak in Sverdlovsk was due to inhalation of anthrax spores into the lungs of the victims rather than ingestion of contaminated food and was linked to an explosion at a military site previously known to be a research center for biological weapons (Floweree, 1993, pp. 1006–1007). Although the United States accused the Soviets explicitly of violating the BWC, it did not use any of the consultation and complaint procedures laid out in the accord, preferring to rely on private efforts to clarify the issue bilaterally with Soviet authorities.[9]

As a consequence of these concerns about possible violations of the BWC in the first five years after its entry into force, doubts began to arise in the international community about the effectiveness of the Convention. These concerns were reinforced as well by scientific developments, especially by advances in genetic engineering through the use of recombinant DNA, which might open up new avenues for creating more effective biological weapons. Littlewood (2004) has argued that the Geneva negotiating parties tended to fall into three groups in response to these new developments: 1) *status quo* states, led by the Soviet Union, tended to argue that the BWC was working just fine and needed no major overhaul; 2) *minimalists*, including the United Kingdom and the United States, tended to express concerns about possible violations of the BWC but still felt that risks of militarily significant violations were minimal; and 3) *reformers*, including Australia, Canada, Sweden, Switzerland, and many "third world" countries, began to lose confidence in the BWC and argued that the risks of violation required significant changes to close existing loopholes in the agreement. These three factions more or less shaped debate at the five-year review conferences that began with the first REVCON in Geneva in March 1980. At this conference Sweden, as a leader of the reformist group, argued that the BWC should establish a permanent consultative committee to conduct fact-finding investigations of alleged violations, with the involvement of the Security Council only coming into play if this procedure had not adequately resolved the issue. The Swedish intent apparently was to prevent the five permanent members of the Security Council from blocking action in the face of allegations about violations, especially, Sweden insisted, because such a review would constitute a purely procedural matter on which a veto would not be applicable (Floweree, 1993, p. 1008). The Soviet Union opposed this proposal, and the final communiqué contained language that would interpret Article V on implementation as including the

[9] Although the true nature of this incident was never fully resolved during the lifetime of the Soviet Union, in 1992 Russian President Boris Yeltsin revealed that the anthrax outbreak was in fact caused by an accidental release of anthrax spores from a Soviet microbiology research facility. This was further confirmed by U.S. scientists who were allowed to visit the region and perform autopsies on the bodies of the victims later in 1992. Subsequent evidence further suggests that, at its highpoint, as many as 60,000 people were employed by the Soviet biological weapons program (see BASIC, 2001).

possibility that an expert meeting might be called at the request of any single state party to evaluate allegations of violations of the treaty.

In the decade of the 1980s concerns began to mount that the Soviet Union was perhaps not the only potential violator of the BWC. In 1982 U.S. officials admitted for the first time, contrary to the impression that all U.S. biological weapons programs had been shut down in 1969, that the United States had maintained a "defensive" program at its biological weapons research facility at Fort Detrick, Maryland. The Army's spokesperson, Colonel Richard Barquist, argued that U.S. efforts were solely focused on discovering antidotes to any possible biological weapons that might be used against U.S. troops. But he acknowledged that there was little practical difference between research on offensive and defensive weapons (*Arms Control Reporter* 1982, p. 701, B.3).[10] Shortly afterwards the UN General Assembly passed a resolution by a vote of 106–14–2 calling upon all state parties to the BWC to discuss ways of ensuring greater compliance with it. On 6 December 1984, these concerns were enlarged when the U.S. army announced plans to spend US$8.4 million to expand biological warfare testing facilities at Dugway, Utah. The Department of Defense indicated that this was intended to test detection equipment and protective gear alone, although critics contended that the same facility could readily be used to test potentially "offensive" weapons because of the high level of containment built into the new structure (*Arms Control Reporter* 1982, p. 701, B.12).[11] The United States was also accused by opposition political figures in South Africa of assisting their government in setting up a chemical and biological weapons research lab; although this in itself was not technically a violation of the BWC, it is hard to imagine what purpose such a laboratory might serve other than to produce such weapons eventually, which would thereby constitute a violation of the BWC (*Arms Control Reporter* 1982, p. 701, B.1). A similar charge that a U.S. biological research facility in Lahore, Pakistan, administered by the University of Maryland, was being used for research on biological weapons was vehemently denied by the United States.

Additional sources of concern also emerged in 1982 with charges being made by the United States that Laotian and Vietnamese forces were using lethal trichothecene toxins in Cambodia (Kampuchea), often referred to as Yellow Rain. Furthermore, the U.S. State Department alleged that Soviet forces in Afghanistan had used lethal chemical weapons on the *mujahideen* resistance forces in Afghanistan following the

[10] A subsequent environmental impact statement issued by the Army covering all U.S. biological weapons research programs indicated that as many as 50 packages containing viral materials had been sent as insecure "express mail" through the U.S. Postal Service from Fort Detrick, Maryland (*Arms Control Reporter* 1988, p. 701.B.42).

[11] These plans, however, later came under political attack, initially from environmental groups in the United States, and eventually opposition was led by conservative Utah Senator Orrin Hatch (Republican), who described the program as constituting "reckless endangerment" (*Arms Control Reporter* 1988, p. 701.B.37). Representative Wayne Owens (Democrat from Utah) accused the administration of building an unnecessarily large facility that could be used for developing offensive biological weapons, regardless of the current proclaimed intent to only develop defensive measures (*Arms Control Reporter*, p. 701.B.41). As a result of these complaints by members of congress from Utah, plans for the Dugway research site were scaled back but not totally cancelled.

Soviet invasion beginning in December 1979, and that toxins and chemical weapons had been developed in the Soviet Union and supplied to forces of Laos and Vietnam (U.S. Department of State, 1982, p. 394). Concern continued to mount in 1984 with allegations that Iraq had used anthrax in addition to chemical weapons in its ongoing war with neighboring Iran, and in 1988 the government of Israel charged that Iraq had embarked upon a large-scale biological weapons program.[12] In early 1989 Israel announced that it had responded by developing its own "military biological capacity," but had not yet manufactured or stockpiled quantities of agents, nor had they yet developed the means of delivery (*Arms Control Reporter* 1989, p. 701. B.47). On numerous occasions over the next several years U.S. Senator John McCain (Republican, Arizona) repeated increasingly alarming charges about biological weapons programs in Iraq, and his charges were largely confirmed by reports from the U.S. State Department. By 1988 Thomas Welch, U.S. Deputy Assistant Secretary of Defense, announced that the number of countries suspected of having biological weapons programs had risen to ten, from a low of four in 1972 at the time that the BWC was signed.

Against this background, the Second Review Conference (REVCON) opened in Geneva in September 1986. Sweden took the lead in the months prior to the Conference to advance its reformist agenda and argued for amendments to the BWC, a move that was resisted at first by other states in favor of confidence-building measures that would be politically rather than legally binding. U.S. officials were skeptical regarding the BWC in general, arguing that attempts to make the treaty verifiable were a delusion; another official reportedly observed that the "treaty is irrelevant because of the problems posed by today's advances in biotechnology and genetic engineering" (*Arms Control Reporter* 1986, p. 701. B. 47). Douglas Feith, at the time Deputy Assistant Secretary of State for Negotiation Policy, argued that new technological developments had made biological weapons "highly militarily significant" (*Arms Control Reporter* 1986, p. 701. B. 47). Some analysts close to the Reagan administration even argued that the Soviets might utilize biological and chemical weapons as a response to the Strategic Defense Initiative, providing them with an alternative to strategic missiles to strike the United States. Rather than causing the U.S. government to emphasize strengthening the BWC, however, these alarmist views reinforced the argument within the U.S. government that arms control could do little or nothing to reduce the risks associated with biological weapons development and would hinder the United States from taking counter-measures to reduce these risks unilaterally.

[12] We know from information that has subsequently come to light that Iraq had been supplied with anthrax spores, West Nile Fever virus, dengue virus, and numerous other pathogens by the U.S. government's Center for Disease Control in Atlanta, Georgia and by private U.S. companies under export licenses issued by the U.S. Department of Commerce, as well as by other countries including Japan, West Germany, and France, mostly between 1985 and 1989 during the war between Iraq and Iran. See Center for Nonproliferation Studies, Monterey Institute of International Studies, 1998 at http://cns.miis.edu/research/wmdme/flow/Iraq/seed.htm. At the same time the United States accused the Soviet Union of supplying Iraq with biological agents in violation of the BWC, at best a hypocritical charge in the light of ongoing U.S. programs to aid Iraq's biological weapons program during their ongoing war with Iran.

Reflecting the initiative of the new Soviet General-Secretary Mikhail Gorbachev, the Soviet Union moved away from a status quo position to one favoring modest reform of the BWC in 1986. Specifically, they proposed adding a legally binding verification protocol to the BWC. This proposal was not very well received in Geneva, however. Here, a consensus developed among the minimalist states in favor of granting priority to the eventual development of a verification regime that would be applied equally to biological and chemical weapons, especially as negotiations for a chemical weapons ban, largely moribund since 1972, seemed to be gaining momentum in the Conference on Disarmament. The United States and other minimalists managed to use this new initiative in the Committee on Disarmament to justify their effort to turn the second BWC REVCON away from developing a specific biological weapons verification regime toward negotiating a new regime of confidence-building measures instead. Thus, the primary measures that were adopted in Geneva in the communiqué included provisions for the exchange of data on research laboratories certified to handle infectious material that was permitted under the BWC as well as information on the outbreak of all infectious diseases that seemed to deviate from normal patterns and that might be due to unauthorized use of biological agents. The Conference also encouraged more active contact among scientists working on biological weapons activities in order to promote greater transparency within the scientific research community. In short, the U.S. proposals were oriented primarily toward reducing the uncertainties surrounding the threat of biological warfare rather than with managing the threat itself (see chapter by Zartman in this volume).

In spite of these new measures, concern continued to mount about the possible proliferation of biological weapons, especially in Iraq during and after the 1991 Persian Gulf War. At the outbreak of the war, the United States bombed a plant that it claimed produced biological weapons. Iraq contended that, in fact, this was a factory for baby formula owned by the Nestlé company of Switzerland, though Nestlé indicated that the factory had never begun milk production. Subsequent reports left the situation very much in doubt, and there was never any hard evidence regarding the real uses of this facility. Nonetheless, U.S. soldiers participating in Operation Desert Storm were inoculated against anthrax, indicating that U.S. Defense Department officials were concerned that the Iraqi army might use biological weapons against U.S. troops. At the conclusion of the fighting, UN resolution #687 called on Iraq to destroy all of its biological weapons capability. On 8 April 1991, Iraq ratified the BWC, thus putting itself formally under the restrictions of the treaty. In August the UN sent in the first inspection teams to search for biological weapons programs, and they concluded that Iraq was capable of producing biological weapons, although they presented no definitive evidence that such weapons had actually been produced, stockpiled, or used. More extensive investigations were called for, however, and the UN Special Commission (UNSCOM) was created to evaluate Iraq's chemical and biological weapons programs. In spite of its broad mandate and the conditions created by the defeat of Iraqi forces in the Gulf War, UNSCOM consistently encountered difficulties in either positively confirming or disconfirming that Iraq had produced, stockpiled, and used biological weapons. An UNSCOM team reported on 3 October 1991 that, although it was clear that Iraq had an intent to develop

a biological weapons program and had an ongoing research program, the team had not found any actual biological weapons or facilities for filling weapons (*Arms Control Reporter* 1991, p. 701.B.83). On 18 November UNSCOM head Rolf Ekeus of Sweden further confirmed that Iraq had an advanced BW research program but his mission had so far "not found a real production plant" (*Arms Control Reporter* 1991, p. 701.B.84). On the other hand, a senior, but unnamed U.S. official insisted that the United States knew that "Saddam Hussein has a weaponized biological warfare program and that he has produced agents" (*Arms Control Reporter* 1991, p. 701.B.84) although no specific evidence was produced. The obstacles encountered by an intensive, on-site verification activity such as that conducted by UNSCOM simply underscored for many the tremendous difficulty of verifying compliance with the BWC, as even the most stringent verification procedures would inevitably be far less intrusive than those applied in Iraq by UNSCOM.

At the same time, the increasing frequency and salience of reported violations in many regions of the world put greater pressure on negotiators to strengthen the BWC, and non-governmental organizations increasingly began to lobby on behalf of a more enforceable agreement as the date of the 3rd REVCON approached in 1991. The "availability" heuristic suggests that extensive BW research and development programs indicated that it was, indeed, possible to imagine that these weapons might be used, even though they had rarely or never been used before. The scientific community especially became concerned about new possibilities to produce and deploy various lethal toxins, and new technological developments also made it increasingly difficult to distinguish between activities permitted and prohibited under the BWC. Littlewood (2004, p. 15) summarizes the increased sense of risk:

> In 1991 key States Parties knew that non-compliance with the BWC had occurred, that proliferation of biological weapons was an increasing problem and that the scientific developments pointed towards a situation that would deteriorate over time.

The central question thus posed to REVCON III was whether the ever-increasing risks of biological weapons would provide new impetus for negotiations to strengthen the BWC. This was an opportunity that was largely missed. Part of the difficulty of the conference was that the East–West split in previous meetings had largely disappeared only to be replaced by a growing North–South divergence. Another interesting conflict developed between a U.S.-based non-governmental organization (NGO), the American Federation of Scientists (AFS), and the official U.S. delegation in Geneva. The AFS submitted to the REVCON a proposal calling for a two-step process to produce a verification protocol. The first step involved a meeting of experts to draft a proposal, which would then be submitted to states for negotiation in a second stage. This was opposed by the administration of President George H.W. Bush, which cited traditional U.S. arguments against the reliability of verification, especially the concern that it might compromise proprietary information belonging to pharmaceutical manufacturers that was essential for U.S. private firms to maintain a competitive lead in this field (Littlewood, 2004, p. 16).

In short, the risks associated with an extensive verification program outweighed the expected benefits given the low perceived risk of any large-scale use of biological weapons. A study by the U.S. Office of Technology Assessment emphasized that

political considerations outweighed technical ones in arriving at this assessment, noting that there was "a political debate about whether the burden of uncertainty associated with BWC verification would hamper more severely the verifier or the violator" (Robinson et al., 1993, p. 715). The compromise reached in REVCON III, therefore, was to create an expert commission that became known as VEREX, which held four meetings in 1992 and 1993. The final report of this commission identified 21 measures, none of which alone could provide adequate verification for the BWC, but which in combination could "contribute to strengthening the effectiveness and improve the implementation of the [BW] Convention."[13] These 21 measures loosely fell into seven categories: 1) information monitoring; 2) data exchange; 3) remote sensing; 4) off-site inspections; 5) exchange visits; 6) on-site inspections; and 7) continuous monitoring (*Arms Control Reporter* 1992, p.701. B.105).

As this process evolved, however, new reports of possible usage of biological warfare agents began to pop up. In 1992 the CIA indicated that Libya was actively seeking a biological weapons capability but probably had not yet achieved it. The Ministry of Defense of Azerbaijan accused Armenia of dropping packages containing bacteriological materials on Azeri territory in the conflict over Nagorno-Karabakh. Again in 1992 the U.S. Defense Department repeated charges that Iraq had four biological weapons production facilities near Baghdad and had the capacity to deliver deadly botulism toxins by aerial bombs or by Scud missiles. However, shortly thereafter, UNSCOM inspectors reported that they were unable to confirm that an active biological weapons program was under way at one of those sites that they visited in April south of Baghdad. On the opposite side of the coin, Russia and the United States reported considerable progress in the fall of 1992 in bringing the former Soviet biological weapons program under control and beginning to dismantle the facilities associated with it. By 1993 CIA Director James Woolsey had raised the count of states suspected of possessing biological warfare agents to 25, noting particular U.S. concern regarding Egypt, Iran, Iraq, and Taiwan. Nonetheless, at the 4th VEREX session in Geneva the U.S. representative, Edward Lacey, praised the goals of VEREX but refused to endorse any of the proposed measures, arguing instead that the best way "to enhance the effectiveness of the BWC is to work toward universal adherence" (*Arms Control Reporter* 1993, p. 701.B.118).

This position was soon reversed by the Clinton administration, and the newly elected president declared his intention "to strengthen the biological weapons convention by making every nation's biological activities and facilities open to more international [scrutiny]" (*Arms Control Reporter* 1993, p. 701.B.118). This change reinforced the perception that risk assessments were at least partly based on political rather than technical criteria, but officials in the Clinton administration also articulated changes to some of the most salient features associated with the risk emanating from biological weapons. One administration official spoke of a "growing threat" from biological weapons, while another characterized their proliferation as more threatening to U.S. security than either chemical or nuclear weapons proliferation.

[13] United Nations, Ad Hoc Group of Government Experts to Identify and Examine Potential Verification Measures from a Scientific and Technical Standpoint, Document BWC/CONF.III/VEREX/9.

Donald Mahley, a chemical and biological weapons specialist with the U.S. Arms Control and Disarmament Agency, indicated that the United States was committed to a "new approach" that would "visibly strengthen the regime" (*Arms Control Reporter* 1994, p. 701.B.127). President Clinton himself told reporters from the *New York Times* near the end of his term in office that he was more frightened by the prospect of germ warfare than by either nuclear or chemical weapons. Unlike a chemical attack whose effects would be limited, biological agents that started an epidemic would, in his words, be "the gift that keeps on giving" (Miller et al., 2002, p. 247). Although the Clinton administration remained cautious about the feasibility of an effective verification mechanism, it did support the opening of the Special Conference in Geneva in September 1994, which was to complete its work prior to the 1996 REVCON. The change in the U.S. position further isolated the remaining minimalists like China, India, and Iran and set the groundwork for organizing a "Special Conference" in 1994 (Littlewood, 2004, p. 19). This conference created an Ad Hoc Group to negotiate a new protocol to the 1972 BWC to include strengthened measures of verification and enforcement.

As this process was in operation, further evidence of biological weapons proliferation appeared as British and Canadian sources reported that Myanmar (Burma) had dropped balloons on rebel Karen villages, followed by widespread outbreak of cholera. Australia initiated a "defensive" biological weapons program, allegedly in response to their perceived proliferation in Asia, now allegedly including China, Laos, Myanmar, North Korea, and Taiwan. In August 1995 in response to tips received from Iraqi defectors, UNSCOM head Rolf Ekeus of Sweden revealed that Iraq did indeed have a significant biological weapons program, which had included putting biological agents into 191 bombs and missiles. The UNSCOM report of 11 October 1995 revealed that Iraq had a "remarkable" biological weapons program reflecting "a high level of management and planning" (*Arms Control Reporter* 1995, p. 701.B.147–150). A report by the CIA to the U.S. Senate's Select Committee on Intelligence indicated that Iran also "possessed weaponized biological agents that could be dispersed by artillery and aerial bombs" (*Arms Control Reporter* 1996, p. 701.B.154).

March 1995 also witnessed an attack by a Japanese religious cult, Aum Shinrikyo, releasing a chemical agent, sarin nerve gas, in the Tokyo subway. As predicted by the "availability" hypothesis, this single event raised fears that both chemical and biological weapons might prove to be more useful for non-state actors than for state governments, for several reasons: 1) many agents were relatively easy to produce by individuals with only modest levels of scientific training; 2) these weapons were also relatively inexpensive to produce, putting them within reach of actors with far fewer resources than those available to most governments; 3) non-state actors were interested in propagating widespread fear among the civilian population rather than attacking specific military targets; 4) most such groups pursued what they believed to be morally sacrosanct causes, thereby exempting themselves from moral constraints that otherwise might cause governments to refrain from using these "morally repugnant" weapons against civilian populations; and 5) these organizations generally had no known location or assets that would make them vulnerable to rapid retaliation. In

short, there grew up a sudden perception that the risks of biological weapons proliferation lay not only with states, especially developing countries and so-called rogue states, but even more seriously with non-state actors that were not participants in the control regime that had been created under the BWC.

Against this backdrop the 4th BWC Review Conference took place in Geneva in early winter of 1996. As the Ad Hoc Group was still in the midst of its work, the REVCON largely proceeded on a parallel track, offering little to resolve the disputes that had occurred in the Ad Hoc Group and instead spending much of its time debating whether to issue a condemnation of the Iraqi biological weapons program. By late July 1997, however, the Ad Hoc Group released its first "rolling text" for a new protocol to the BWC covering compliance issues, with brackets identifying different proposed language throughout. Initial provisions called for annual declarations of facilities and weapons stockpiles, and these measures received widespread support. However, differences remained over just what needed to be declared, especially over whether or not bio-defense facilities were to be declared; the tentative resolution in this area, like the Nuclear Non-Proliferation Treaty of 1968, gave a special status to the two countries with large bio-defense programs, Russia and the United States, which ironically would be subject to less intrusive declaration requirements than all other states. Needless to say, this tentative resolution was hotly contested. Provisions for non-challenge or routine inspections of declared sites were also discussed, although there was considerable dispute about whether "random" inspections were necessary and desirable. Four types of visits were identified: random visits, clarification visits, request visits, and voluntary invitations. Differences emerged, however, over whether such visits should take place only at declared sites or whether sites that "should have been declared" should also be subject to random or clarification visits. Further differences entailed whether the number of "random" visits should be based on the number of declared sites or on some measure of territorial size. Special confidence-building measures were proposed, covering transparency in the sale and shipment of biological agents across national borders.

In September 1997 the issue of challenge inspections in cases of suspicion of specific treaty violations was added to the running text, supported in principle by all states but with various opinions regarding the concrete modalities. However, some states preferred that stringent measures would be applied only to known violators of the BWC such as Iraq, whereas other states would be subject only to minimal on-site verification. Within the Ad Hoc Group tensions developed largely along North–South lines. As negotiations continued in the Ad Hoc Group, however, these differences began to narrow and became more political rather than technical. However, the trend toward greater convergence was reversed in the summer of 2000 when the United States, shortly prior to the 2000 elections, reversed its position on random visits, fearing that the loss of proprietary information from such random visits would outweigh the risks associated with a verification system that did not include random and "surprise" visits.

The critical moment for the BWC protocol came, however, on 30 March 2001, when the chairman provided a comprehensive draft text. Reactions varied, with many countries insisting that it provided a useful guide for further negotiations but

stressing that it was not yet ready for finalizing. Many delegations expressed specific reservations, but, with one exception, all recognized that the text showed considerable collective progress toward an agreed protocol. However, the United States delegation dropped a bombshell in the Ad Hoc Group by rejecting the draft protocol altogether. The United States argued that " the chairman's proposals would not be sufficient to prevent cheating on treaty obligations, but instead would be burdensome to universities and private industry, and might leave U.S. companies vulnerable to theft of commercial secrets" (*Arms Control Reporter* 2001, p. 701.B.7–8). This outcome reflected a review by the incoming administration of President George W. Bush that the protocol would be of little use in detecting violations of the BWC. At about the same time, the European Parliament declared its overall support for the chairman's draft. On 25 July, shortly after the 24th meeting of the Ad Hoc Group opened in Geneva, the United States announced officially its rejection of the chairman's composite text and furthermore rejected the idea of a "legally binding protocol to the BWC altogether." The U.S. delegation concluded:

> After extensive analysis, we were forced to conclude that the mechanisms envisioned for the Protocol would not achieve their objectives, that no modification of them would allow them to achieve their objectives, and that trying to do so would simply raise the risks of [sic] legitimate US activities .... Defense against BW is of great concern to the US (*Arms Control Reporter* 2001, p. 701.B.13–15).

This latter comment opens an interesting set of questions. The most frequently cited explanation for the Bush administration's decision has been that pharmaceutical companies, politically powerful in the United States and frequent purveyors of large contributions to political campaigns (including those of President Bush), had argued that the risks of losing trade secrets through intrusive verification outweighed the purported benefits of enhanced verification for the BWC. Although this may well have played an important role, it does not seem that it was decisive. At first sight, the verification measures proposed for the BWC protocol paralleled fairly closely similar provisions that had been included in the Chemical Weapons Treaty, signed in 1996. Although the chemical industry in the United States and other developed countries had also opposed these provisions initially, those concerns had largely been met in the final treaty text and the treaty had taken effect and had been implemented with few serious objections arising from the industry. There seems to be no solid reason to explain why similar measures to manage the risk of commercial espionage could not have been worked out for the BWC protocol as well. Therefore, the contention that the BWC protocol was rejected by the United States solely to protect U.S. commercial interests, though having some merit, does not seem to be a sufficient explanation for the sudden reversal of negotiating positions taken by the Bush administration.

A more likely explanation, therefore, was hinted at publicly in the rationale provided by the U.S. delegation in Geneva, namely that the United States has an ongoing "bio-security" program that might be disrupted by an intrusive verification regime. Especially as U.S. officials have frequently pointed to the difficulty of distinguishing between "defensive" and "offensive" bio-security programs, it is likely that at least some of the U.S. secret programs might be thought to be in violation

of the BWC if subjected to thorough verification and international review. *The New York Times* reported on 4 September 2001 that a major biological weapons program had been initiated under the administration of President Clinton. A Central Intelligence Agency (CIA) project named Clear Vision sought to learn from the disbanded Soviet biological weapons program how to develop a missile that could carry and deliver biological agents over long distances, as well as a "bomblet" that would protect the germs inside from an explosion, allowing them to be dispersed upon their arrival at their target. Indeed, the CIA wanted to produce and test a fully developed bomblet, although there were opponents within the Clinton administration who argued that proceeding along these lines risked crossing the limitations imposed by the 1972 Biological Weapons Convention. Additional work within the CIA was directed towards gene-splicing, attaching genes to pathogens that would make them more deadly (Miller et al., 2002, pp. 290–296). Another project launched within the Department of Defense, code-named BACUS, sought to develop a germ factory that could manufacture harmless bacteria to simulate the production of anthrax, and by 2000 they had a laboratory up and running. Although this program also tried to stay within the limits of the BWC, for whatever reason it was kept secret even from senior officials in the Clinton administration, apparently including the president himself (Miller et al., 2002, pp. 297–299). In spite of these ongoing efforts to develop new biological agents, the primary thrust of policy during the Clinton years was on improving the capacity of the U.S. public health system to respond to a dreaded attack with a contagious agent, while also pursuing with some reservations the negotiations in the Ad Hoc Group to strengthen the BWC.

After entering the White House in 2001, the George W. Bush administration ordered the development of a genetically engineered new strain of anthrax, purportedly to test the effectiveness of vaccines administered to U.S. forces (Miller et al., 2001, p. A1). At about the same time, a laboratory in Australia produced a virus that was spliced with a gene that destroyed the immune system of mice in which it was tested, making them susceptible to the virus and effectively countering the influence of any vaccinations. The United States briefly considered producing a smallpox virus that would overcome any vaccination program, nominally to assess the threat; publicly, at least, it asserts that this project has been dropped (Miller et al., 2002, pp. 310–312). But the theoretical possibility had been created of developing a "supergerm" that would be resistant to all known measures to prevent it from killing its victim. In addition, the administration of George W. Bush proposed as an alternative a series of measures that could be adopted unilaterally by any country to reduce the risk of bio-terrorism, especially by criminalizing activities that were in violation of the BWC and unilateral adoption of regulations to restrict access to potential biological agents (Cirincione et al., 2005, pp. 65–66).

Following the attacks on New York and Washington on September 11, 2001, a round of attacks using anthrax were directed against leading figures in the U.S. media and Congress, causing in particular the evacuation for several weeks of congressional office buildings in Washington. Although the perpetrator of this attack has not been identified at the time of writing, it appears that the strain of anthrax came from U.S. government research laboratories. At least one former employee of

a private contractor working for the CIA as well as the major bio-security research center at Fort Detrick, Steven Hatfill, was identified by the Federal Bureau of Investigation (FBI) as a "person of interest" in the investigation of this crime, though formal charges have never been filed against him. *The New York Times* further revealed on 2 July 2003, that Hatfill, a medical doctor and an expert on anthrax, had been involved in (and in some reports was the originator and leader of) the development of a "mobile germ plant." Although this unit had all the facilities necessary for the manufacture and preparation of anthrax spores for delivery in a militarily useful form, the administration contended that it was developed solely to train soldiers on how to disarm similar units that were suspected at the time to be found in Iraq. There was apparently some suspicion that the unit had been used to produce anthrax spores and perhaps even that it had been the source of the deadly anthrax that appeared in letters processed in Washington and delivered to members of Congress and television news announcers. Indeed, the FBI tried unsuccessfully to seize the mobile lab to check on this possibility as it was being shipped from the production site at Fort Detrick in Maryland to Fort Bragg in North Carolina, where it apparently was put into use for training purposes (Broad et al., 2003, p. 1, p. 4). Although there is no direct evidence publicly available to demonstrate that this or other similar devices formally violate the 1972 BWC, the often-cited difficulty of distinguishing between "offensive" and "defensive" research would at a minimum cause suspicion that a thorough verification mechanism might reveal additional clandestine activities, reported to have expanded rapidly after September 11, 2001 (Broad et al., 2003, p. 1, p. 4).

President Bush stated the U.S. position starkly: "This (biological weapons) threat is real and extremely dangerous. Rogue states and terrorists possess these weapons and are willing to use them."[14] The response of the United States to the new risks associated with the potential for biological warfare, therefore, was not to rely on a strengthened multilateral convention to halt the proliferation of these weapons. Rather the United States embarked upon a unilateral program of research and development to produce biological agents, either to develop antidotes in event of their use or perhaps to threaten, at least implicitly, retaliation "in kind" in the event that biological agents are ever employed against U.S. troops, civilian targets within the country, or perhaps even against U.S. allies such as Israel. In 2002 the Bush administration attempted to withdraw from circulation over 6,000 technical documents relating to the production of biological and chemical weapons, and pressured scientific societies and journals not to publish research or release data that might be useful to terrorists seeking to obtain biological agents. The administration proposed increased funding for bio-defense research of US$4.6 billion for fiscal years 2002 and 2003. The administration's Nuclear Posture Review released in spring 2002 appeared to authorize retaliation with nuclear weapons not only in response to a nuclear attack on the United States and its allies, as had been the case previously, but also in response to an attack with biological weapons and other "surprising military developments" (Richter, 2002, p. A1).

[14] Statement on 1 November 2001.

The effect of this on the negotiations in the Ad Hoc Group and in the BWC Review Conferences was devastating. Of course, as Jez Littlewood points out, it would be incorrect to argue that the Protocol was essentially completed at the time of the U.S. rejection, as at least six major issues remained to be resolved before an agreement could have been consummated, and at least some of these would have required changes in positions by several powerful states engaged in the process (Littlewood, 2004, p. 29). At the same time, prior to the U.S. rejection, negotiations had been moving forward, and the momentum generated by the change in the U.S. position in 1996 from a "minimalist" to a supporter of the "reformers" was completely lost when the United States returned to the "minimalist" camp in 2001. When the 5th REVCON opened in Geneva on 19 November 2001, John Bolton, at the time the U.S. Under Secretary of State for Arms Control and International Security, shifted the conference away from negotiations to overcome the remaining differences to an effort to hold al-Qaeda and Iraq accountable for their alleged biological weapons program. He concluded:

> The draft protocol that was under negotiation for the past 7 years is dead in our view. Dead [sic], and it is not going to be resurrected. It has proven to be a blind alley (*Arms Control Reporter* 2001, p. 701.B.21).

When the conference concluded on 7 December 2001, the United States called for a termination of the mandate for the Ad Hoc Group, and no final communiqué could be agreed upon. As the conference adjourned until 11 November 2002, the chairman concluded that the remaining differences appeared to be "irreconcilable." Ironically, precisely at the moment in recent history when the risk of the use of biological agents seemed greatest, negotiations to strengthen multilateral efforts to prevent such an occurrence reached their nadir, ending in stalemate.

In spite of the U.S. walkout, negotiations continued through the 2006 Review Conference, focusing mostly on confidence building and other measures to enhance the transparency of ongoing biological weapons research programs (Isla and Hunger, 2006). At that time, some states, especially members of the European Union, signaled their continuing commitment to a viable verification mechanism for the Convention, while other measures to enhance the transparency of bio-defense and other related scientific research that might be relevant for offensive purposes were largely disregarded (Littlewood, 2007). Nonetheless, the Convention still appeared to function, albeit without the verification and enforcement mechanisms that would seem to be proportionate to the enhanced risk widely perceived to be associated with biological weapons in the first decade of the 21st century.

Conclusions: The Biological Weapons Convention—Does It Increase or Decrease the Risk from Biological Weapons?

This account of the history of negotiations to manage the risks associated with the development, testing, stockpiling, and possible use of biological agents for military

purposes or by terrorists concluded with an apparent paradox. From the time that the first efforts were made internationally to create a biological weapons control regime in the 1925 Geneva Convention, through the Biological Weapons Convention of 1972, to the series of review conferences that followed every five years, there has been a tendency to seek more stringent measures of international control in relation to the perceived risk of the proliferation, both horizontal and vertical, of biological weapons. Throughout much of this period, the risk that biological agents would actually be used as an instrument of warfare was generally perceived to be low, so that the primary risk that needed to be managed was to prevent these relatively inexpensive and readily available biological agents from becoming a weapon of choice for poor countries and more recently for rogue states and terrorists as well.

These assumptions, however, came under increasing scrutiny during the decade of the 1980s. At that time, evidence emerged that the Soviet Union, one of the Cold War superpowers, had engaged in a massive biological weapons development program in violation of the BWC, and there were even some suspicions that its Cold War rival, the United States, might have crossed the grey line between "defensive" and "offensive" bio-defense programs. The use of chemical weapons by Iran and Iraq in their war against one another, combined with suspicions that both countries, especially Iraq, had embarked upon major biological weapons programs, also increased concern that these weapons might be utilized by "middle powers" in conflicts in volatile regions such as the Middle East. These events provided the impetus for the creation of the Ad Hoc Group to try to negotiate a new protocol to strengthen the BWC, primarily by adding measures for verification and enforcement that had been largely absent in the 1972 treaty. Both the likelihood and potentially harmful consequences of violations of the BWC became clearly apparent to most observers.

However, it was in 2001 that the specter of major new risks from biological weapons rose to new heights throughout the international community. The daring attacks in New York and Washington initiated by the terrorist organization al-Qaeda indicated a whole new range of threats to international security from non-state actors harboring deep resentment against the developed states of North America, Europe, Russia, and Japan. Furthermore, the 9/11 attacks demonstrated that these groups were prepared to use unconventional weapons against primarily civilian targets. The fact that this attack was followed almost immediately by letters laced with anthrax mailed to major figures in the U.S. Congress and in the American news media further raised fears that terrorist organizations might be more likely than any state to employ biological weapons in their struggle against their far more powerful opponents.

Even though the anthrax attacks in the United States were evidently not perpetrated by international terrorists, and even though al-Qaeda has, as far as we know at the time of writing, not yet utilized biological agents, there is a widespread assessment that it, or similar terrorist organizations, might find biological weapons to be especially well suited for achieving their objectives. For terrorist organizations, precise targeting of military assets, immediate results on the battlefield, and discriminating between military and civilian targets are of little, if any significance. Furthermore, their modest resources combined with the value that they place on

surprise and on generating fear that extends far beyond their immediate target, make biological weapons obvious instruments in their struggle, in clear contrast to their limited value to traditional, state-controlled military forces. In short, many analysts in and outside of governments have concluded that the risks associated with biological weapons have increased substantially in the first decade of the 21st century.

Logically, it would seem that this new risk assessment should have provided the necessary impetus for the negotiators in the Ad Hoc Group to overcome their remaining, though modest differences and to reach agreement on a new protocol to strengthen the international regime to manage the risks of biological weapons. In fact, the exact opposite has occurred. The United States withdrew from discussion of proposed measures to strengthen the BWC, and it remains largely isolated in its opposition to more comprehensive verification and enforcement measures in the meetings that have continued to take place in Geneva since 2001, which have focused on voluntary confidence-building measures rather than on strict verification. This raises the fundamental question about why pressure to strengthen the regime has disappeared at precisely the moment when the risks associated with the uncontrolled development of biological agents would seem to be most urgent.

Viewed from the perspective of risk analysis, it appears that the broadly diffused assessment that an internationally negotiated, verified, and enforced regime was the best way to manage the risks of biological weapons was not shared by senior officials in the administration of George W. Bush. Although work on bio-defense that began to blur the boundaries between "offensive" and "defensive" programs had begun previously, through the end of 2000 the United States still seemed to share the belief that risks could be managed best by an international regime and that unilateral U.S. research and development was intended primarily as a hedge in case an enforceable BWC regime did not emerge.

This view shifted dramatically with the arrival of the administration of George W. Bush in Washington. Its risk assessment was quite different from the one that had been broadly diffused throughout much of the international diplomatic community in the course of lengthy negotiations on biological weapons over many decades in Geneva. For the Bush administration, the likelihood that a multilateral regime could adequately manage the risks of biological weapons proliferation was largely illusory. And if the risks could not be managed through a multilateral regime, then it follows that the only way to reduce the risk of biological agents being used was to take unilateral action, first and foremost to build national bio-defense capacity as rapidly as possible and secondarily (and somewhat more speculatively) to build a capability to retaliate "in kind" as a deterrent against the use of biological agents. The administration interpreted both Soviet and Iraqi violations of the BWC as evidence of the fragility of the regime in terms of preventing proliferation. Rather than developing enhanced verification and enforcement measures to make such violations less likely in the future, the administration followed the opposite course of developing U.S. national capabilities for biological warfare.

Whether or not the United States is in direct violation of the Convention or simply pushing at the margins, it is clear that many aspects of the U.S. programs might raise questions about U.S. compliance. Under these circumstances, a strengthened

treaty would almost certainly require some form of inspections of U.S. bio-defense facilities. It is these installations, far more than pharmaceutical companies or university research laboratories, that the United States is interested in protecting from intrusive inspections. Even if multinational verification did not reveal direct violations of the BWC, it might provide a cover under which others could learn about the extent of U.S. programs and perhaps even gain access to sensitive information about the production of new biological agents, especially genetically engineered agents that are likely being researched in U.S. laboratories. In addition, the possibility that questions might be raised about some of those activities would likely constrain U.S. research and development programs in an effort to avoid even the appearance of non-compliance.

In summary, as the leading nation in many aspects of biological research, including research that might have implications for weapons programs, the United States did not share in the global consensus that an international regime was the most effective means to manage the risks of biological warfare. Instead, the Bush administration concluded that only a national bio-defense program, unfettered by internationally imposed constraints and verification mechanisms, could reduce the risk to the United States that terrorist organizations or rogue states might gain access to these lethal, but relatively inexpensive instruments and use them against the United States and/or its close allies. In this light, the logical move for the administration was to reject an intrusive regime and return to a minimalist approach. Given the importance of the United States to the maintenance of this regime, the U.S. opposition to strengthening the regime at a time of increased threat has actually served to undermine the regime. All other states in the international community that depend on the regime for security from biological weapons risks, but which do not have equivalent resources to the United States to develop national programs of their own, are thus effectively left without the security provided by this international risk-management regime. As with all regimes, "free riding" behavior by smaller participants may have little or no effect on the regime's survival, but when a major actor like the United States defects from an international security regime like the one on biological weapons, the consequence is that the regime is weakened and most, if not all, states are left to live with a higher level of risk and greater levels of insecurity in a dangerous international environment.

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Negotiations on National Security Risks: The Case of U.S.–Soviet Relations

Victor Kremenyuk

Introduction

The more sophisticated and destructive the weaponry that was introduced into the arsenals of United States of America (USA) and the Union of Soviet Socialist Republics (USSR) during the Cold War years, the closer both sides came—advertently or inadvertently—to the brink of hot war. Too many arms meant too high the risk of a showdown, even one that was unwanted. Both superpowers began subscribing to this maxim somewhere around the time of the Cuban Missile Crisis in October 1962. Since then it has been an important component of their strategic relationship and of the theory and practice of deterrence (George and Smoke, 1974). It was also an integral part of the negotiations agenda when strategic dialog finally opened between the superpowers in the early 1970s.

In the public memory of that period, and in the expert memory too, there is a vast U.S.–Soviet network of negotiations on different aspects of arms control: strategic, intermediary, tactical, conventional. These "subsystems" played a decisive role in achieving two major goals: avoiding an accidental war between the two superpowers and building some kind of mutual confidence between them with a view to winding down the confrontation altogether. Indeed, the negotiations between the USA and USSR on risk management that developed as the first step in this dialog was a visible catalyst for the negotiations on strategic weapons control that finally led to the end of the Cold War.

Of particular importance in this respect is the fact that, individually and together, both sides singled out the problem of "risk" in their mutual relations during the Cold War and, what is more, agreed to undertake a joint effort to control it. Irrespective of the ideological struggle and political rivalry, mutual survival was one of the first things on which they agreed (Center for Strategic and International Studies, 1985). Apparently, both agreed that risk control was much more important and achievable

Victor Kremenyuk
Russian Academy of Sciences, Moscow, Russia, e-mail: vkremenyuk@yahoo.com

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in these circumstances than even a short-time advantage in nuclear or missile technology. The episode involving the neutron bomb can be mentioned as an example: the whole idea of developing a new and smart weapon was dismissed in the early 1980s because it threatened the evolution of the mainstream negotiations on risk reduction.

In a way, this provides an additional insight into the specifics of risk negotiations. In risk negotiations, if the solution to a problem under negotiation is part of the wider picture or a bigger strategy, then something resembling a shift in values occurs. Risk, because of its importance, overshadows other elements of the policy, just as being diagnosed with a serious disease overshadows one's long-term life plans. And this—the importance of risk—influences pre-negotiations, the process of negotiations itself, and the outcome of the negotiations.

This last statement needs some explanation. Risk management can be regarded, on the one hand, as simply another case of negotiation: nothing better, nothing worse. People negotiate on many different subjects; it is not surprising that risk, being inherent in human activity, is actually negotiated with other interested parties. On the other hand, as the negotiation of risk is a collective concern and has highly unpredictable and/or highly predictable outcomes for all the actors, it does not fit neatly and sequentially into other human activities and their consequences. It is for this reason that particular attention needs to be paid to risk, and a special attitude has to be taken to it.

Negotiating a Security Risk: Where Is the Problem?

In the two crucial notions that determine our sense of security, "threat" and "risk," there is something of a game of semantics. As sane human beings, we want to avoid both threat and risk. To do so, we are ready either to spend an enormous amount of resources to achieve a sense of security (if possible) or to negotiate with anyone who may be instrumental in helping us achieve that goal: allies, enemies, third parties, even God. We are ready to do anything—unilaterally, bilaterally, or multilaterally—to avoid threat and risk. But when we discuss the possibility of negotiating risk control, we need to be precise. In what ways is negotiating a risk specific? How do risk negotiations differ from other negotiations on threat reduction? This is something that the editors of this book, in their introductory chapter, indicate as their main goal.

Another element of the rationale behind this study is to associate risk control with negotiation, to establish a link between the two, and to see how they work together. In this respect, the following proviso should be noted. Several crucial conditions need to be in place before a negotiation can take place: in their absence, a negotiation is simply impossible. One of the most important is the identification of interests shared by the parties, including an interest in finding a negotiated solution to any dispute through joint action. The identification of such shared interests often

depends on a prior understanding of the nature of the negotiated issue, and this is particularly true of negotiation on risk.

To begin with, what is the difference between "threat" and "risk"? The majority of those engaged in the business of negotiations and arms control agree that these categories, though very similar, are not identical: every risk is a threat, but not every threat is a risk. The greatest difference between the two lies in their origins and the way they "behave": whereas a "threat" comes from an identifiable source and may be traced to its final conclusion, a "risk" can be imagined and may exist only in the heads of those who believe in it (Moore, 1983).

Another major difference between negotiation on "threat" and "risk" lies in the purpose of each. While negotiations on threat control deal with matters that are easily identified and controlled—intentions, purposes, capabilities—the same cannot really be said about risk control negotiations. When a successful negotiation on threat control is the goal, at least two things must be borne in mind: first, there must be a certain amount of trust as a precondition for further steps; second, there must be procedures and mechanisms in place to achieve threat reduction, such as arms control, arms reduction, verification procedures, monitoring, etc. In negotiations on risk control and reduction, the goal is different: it is mainly to reduce the uncontrollable or difficult-to-control element of mutual deterrence, to make it manageable, and thus exclude any possibility of an unexpected threat to security (Frei, 1983).

The difference can also be explained in practical terms with a real-world example. During the Cold War both the USSR and the USA knew perfectly well the threat that each posed to the other. They were able to conceptualize that threat through knowledge of the other's capabilities, of the structure and deployment of their forces, and of their operational doctrine—under what conditions, in what form, and to what extent the other side could and would use its military capabilities to attack (or counterattack) the other. Each side wanted the other to know the real status quo. Although "strategic bluff" was also a part of the equation, each side preferred to send verifiable signals to the other to make it believe that the threat of attack or counterattack was real. This assessment of threat in no way indicated risk; in reality, however, there was rather a high level of risk attached to it in terms of the possibility of 1) human or technical error; or 2) wrong or false signals that could trigger a "launch on warning" response by the other side.

Thus, first of all, as a subject for negotiation, "risk" should have been distinguished from other threats as something that 1) reduces the ability of each side to unilaterally control its own actions; and 2) threatens the stability of the military confrontation process (controlling the actions of the other side through the use of threat). Because of its origin and the way it behaves, "risk" is not simply different from other "threats"; it is a situation that challenges the capacity of each player to keep an entire "state of affairs" under control and to manage it. Unlike other "threats," risk cannot lead to either retaliation or reciprocation. An attempt to retaliate against a risk through the threat of reciprocity only escalates the risk rather than reducing it. Risk is a challenge to an orderly sequence of events, to predictability, and to stability; as such, it must be negotiated by those who feel their legitimate interests to be threatened by it.

As a rule, when two or more actors start a negotiation on risk management, they are already in agreement that: 1) the risk can and should be negotiated; and 2) it is in their best interests and within their powers to find a solution to the problem. This knowledge comes from risk assessment by individual experts and government officials, from existing literature, and from media reports. These elements usually provide a detailed judgment regarding the existence of the risk and its possible consequences. Very often, public concern plays a major role at the start of negotiations, although there have been situations where a negotiation was started and concluded in the absence of any public outcry (Wriston, 1986).

Nevertheless, as risk has certain special features, a significant part of the first stage of the negotiation is devoted to identifying the risk and to jointly assessing its qualities. Given that risk often exists only as a probability, it can be quite difficult for negotiators to find common approaches to it. While risk may unite negotiating parties, at the same time it may put them at odds in the sense that they may make different assessments of the size and nature of the threat, its mode of development, and so on.

To highlight this statement, the following example from recent events can be cited. In 2001 both Russia and the USA were engaged in pre-negotiation over the fate of the 1972 Anti-Ballistic Missile (ABM) Treaty. The subject of the negotiations was either complete withdrawal from the Treaty (U.S. position) or its modification (Russian position). Both sides, especially at the initial stage, actively used "risk" as the main justification of their positions: the USA wanted either to scrap or change the Treaty because it could not cope with risk from third parties ("rogue states," "terrorists," etc.). Russia, meanwhile, wanted to preserve it as a "corner-stone of the strategic balance" between the two powers and to leave it largely as it had been signed 30 years previously, with perhaps minor changes. This critical difference in positions was significantly due to the failure of the negotiations to identify what the "risk" was that needed to be negotiated.

The "risk" perceived by the USA was the threat of a possible attack by a rogue state. U.S. military and security planners had to take into account a possible future situation where terrorist states or groups might acquire nuclear weapons or other weapons of mass destruction and try to use them against U.S. territory, troops, or allies. Although these scenarios do not reflect what happened in New York and Washington on September 11, 2001, they nevertheless had a profound impact on the perception of the security risk in the USA and prompted President George W. Bush to pledge to deploy a nationwide anti-missile defense system. This was why the ABM Treaty of 1972 was scrapped.

The Russian side, while in general agreement that there might be a "threat" to U.S. security from rogue states (but insisting that there should be other means, both military and political, of countering that threat), perceived the mere fact of abandoning the ABM Treaty as a risk, as this could, in Russian eyes, destroy the whole system of agreements on arms reduction and confidence building in the 1980s that had helped to achieve what the Russians call "strategic stability." As many of the agreements in that area were connected to the ABM Treaty or took it as a sine qua non of any future agreement, Moscow insisted that instead of some distant and still

unclear security "risk" that might be posed by "terrorists," both sides could run a real risk of strategic instability, which itself could lead to proliferation of weapons of mass destruction (already under way) and the means of delivering them, as well as other consequences that would overshadow any perceived threat from the "terrorists."

Thus, the identification of the risk is an unavoidable part of the negotiation and naturally extends into risk assessment and risk evaluation. This is because for a proper negotiation to take place, there needs to be not only a general agreement that a "risk" exists, but also an estimation of its magnitude, of its possible development, and of the conditions under which it could become either activated or reduced. These do not guarantee that the negotiation process will be less difficult or less desirable. But, bearing in mind the differences between potential actors in terms of capabilities, ways of thinking, positions, and traditions, it is easy to imagine just how difficult negotiating a "risk" actually is. What makes negotiating a "risk" especially difficult is that the sides involved are mainly concerned with the practical aspects of risk: first and foremost, the extent to which a risk may challenge their individual or collective ability to foresee a given development and to plan for a given contingency. Neither side wishes to negotiate the theoretical magnitude of a risk, and this makes it difficult to identify the potential threat that a risk may present.

No less difficult is the other part of negotiation on risk control: its purpose. The ideal solution is to eliminate the risk completely. However, the negotiator is not always able to do this, nor is it completely in his/her interest if some asymmetry exists in risk identification and risk assessment. Therefore, as the first step at this stage of the negotiation, it is both logical and perceptive to hold an exchange of views regarding a program of action (what to do once the risk is identified, evaluated, and agreed upon). The negotiators, without necessarily revealing all their fears and hidden agendas, establish the extent of their differences, the purpose being to eliminate the risk, to limit it, or to establish a procedure that would permit the parties to start consultations once a risk occurs. The last of these options is similar to U.S.–Soviet agreements on the prevention of inadvertent nuclear war, of incidents on and over the high seas, and of authorized missile launches. Initially, none of these cases led to the establishment of standing mechanisms to deal with the risks. Instead, procedures were established that would be implemented once a risk of that type appeared.

Study of international negotiations has permitted researchers to conclude that there is a certain link between the type of the issues negotiated and the type of solutions suggested (Kremenyuk, 2002). In the case of risk negotiation, especially given the complexity of the subject and the difficulties associated with risk identification, there also seem to be some typical solutions: bilateral and multilateral actions and mechanisms: commitments that may help either to reduce the probability of risk or bring it under control if it occurs.

One possible area of negotiation on risk management is risk reduction: that is, taking measures to reduce either the scale or the probability of a risk. In this case the negotiation is about measures that may be helpful; however, the threat—being perceived as something that cannot be changed but must just be lived with—is not

discussed as such. This is like people living close to a volcano who know it may erupt one day, yet cannot do anything about it.

Another possible aim of negotiation on risk management is risk avoidance or risk prevention. Not all experts agree that these concepts are identical; however, they are in reality very close in meaning and may be regarded, especially by practitioners, as identical. Moreover, both come into the category of management and thus depend heavily on human decisions.

In dealing with risk negotiations, particularly their goals, it is important to distinguish between risks originating from natural disasters (floods, droughts, etc.) and risks deriving from human activities (war, terrorism, attacks, industrial accidents, and so forth). This is important because the entire approach to the negotiation, as well as the negotiation process itself, depends on the type of the risk involved. When it comes to natural disasters, negotiators always feel some sort of human solidarity, which almost automatically increases their common sphere of interest. When risks deriving from human activities are at stake, the situation changes drastically: the probability of cooperation is immediately limited. What matters in this case is what kind of source the risk comes from—friendly, unfriendly, or neutral.

Security Risks in U.S.–Soviet Relations

Historians of the Kennedy administration, which was in power in 1961–1963 (Sidey, 1964; Schlesinger, 1965; Sorensen, 1965), used to mention the fairly well-known fact that President Kennedy, after having seen an early cut of the Stanley Kubrick film *Doctor Strangelove* (1964), inquired whether he could call his Soviet counterpart directly in a crisis. The answer was no. Until the period of direct confrontation during the Cuban Missile Crisis, when the risk of war was imminent, the superpowers had no direct and reliable communication mechanisms (except for diplomatic channels); there was no way either side could reassure itself that, should a threat of nuclear war become realistic, it would be capable of acting with the other side to avert the crisis. This discovery by the U.S. President, together with the poor communication experienced during the missile crisis in October 1962, enhanced understanding of the importance of communication for risk management: this awareness later developed into the first official agreement on risk control between the Soviet Union and the USA (see also I.W. Zartman's chapter in this volume on the theoretical aspects of this issue).

However, before plunging into matters of specific negotiations on risk management, one should try to identify where risk or the probability of risk existed in U.S.–Soviet strategic relations and what mechanisms could have triggered it in a crisis. Without such an exercise, it would be almost impossible to understand the essence of a security risk negotiation between the superpowers during the Cold War. More than that, it would be difficult to comprehend the origin of the notion of "stability" in the strategic relationship that became so important later on.

The Cold War, by which we understand the period of hostility between the Soviet Union and USA as a result of ideological, military and political rivalries that began in the late 1940s—presumably after the Berlin Crisis of 1947, although some historians have good grounds for pointing out that the Berlin Crisis was *already* a result of the Cold War. This hostile relationship developed in almost all areas of relations between the two powers, with military confrontation at strategic regional and local levels, diplomatic competition for control of important areas (Europe, Far East, Middle East), a propaganda war, and covert operations. The purposes of both sides were clear: through the process of confrontation to exhaust the power of the other side and, at the same time, to prepare for a military assault under two specific conditions: absolute military superiority and the chance of avoiding a devastating retaliation.

Until sometime in the Eisenhower administration (1953–1960) the "risk" in this confrontation was regarded as an appropriate, relevant, and even useful part of the strategic relationship. Because of the asymmetry in the technical capabilities of each side—Soviet territory was encircled by U.S. air bases, which demonstrated a possible threat to the Soviets in terms of the strategic doctrine of "massive retaliation"—there was also a striking asymmetry in security relations. The Soviet Union could retaliate against a possible U.S. attack only by attacking U.S. allies in Europe and Asia (Japan), while the USA had the technical and political capability to attack Soviet territory (or the territories of its allies). This was regarded essentially as a stabilizing relationship in which "risk" was reduced only to some unexpected and provocative actions, for example, the Soviet ultimatum to France and Britain during the Suez Crisis of 1956.

Even at that time the U.S. administration wanted to reduce the risk through its Open Sky Doctrine (the idea of opening the air space of each side for regular inspections to prevent a surprise attack by the other party). This was turned down by the Soviets. The need for the USA to find a solution to the growing security risk became much more acute with the development and test of intercontinental ballistic carriers in the Soviet Union around 1955–1956. That development was, at least at the time, regarded as destabilizing (until the period of strategic parity, any attempt by the Soviets to restore strategic balance was regarded as "destabilizing") and thus as an essential item on the negotiations agenda of the two superpowers. It gave a major impetus to the idea of establishing the United Nations Disarmament Committee in Geneva, Switzerland, in the late 1950s.

The situation with regard to security risks and their assessment started changing in the 1960s during the Kennedy era. First, the security risk was a result of the military confrontation between the Soviet Union and the USA; it permeated the entire armaments sphere and almost every geographical area with a few exceptions (i.e., Antarctica). The combination of mistrust and suspicion, together with the somewhat elevated state of military alert, was so intense that it produced a high level of uncertainty as to the real intentions of the other side and its actual capabilities. Even the most sophisticated military systems (including monitoring and early-warning satellites) could fail at any moment. Even the most disciplined and trained personnel could take actions that, under certain conditions, would provoke a crisis. The

global confrontation, in the sense of its geographical and technological dimensions, produced enough pockets of uncertainty for the situation to be fraught with the possibilities of unforeseen risk.

Second, this security risk appeared as part of the deterrence concept at the very moment when, for different reasons, both superpowers had come to accept the irrelevance of an all-out nuclear war and its mortal danger for both the attacker and the attacked. If, in the 1950s, the irrational principle of "massive retaliation" governed the security planning in Washington (mirrored by similar thinking in Moscow), then the lessons of the Cuban Missile Crisis demonstrated the extent to which the initial intentions of the superpowers could be overreached.

Interestingly enough, President Kennedy was greatly influenced by Barbara Tuchman's work on the origins of World War I, *The Guns of August* (Tuchman, 1962). Among other details of the book, he was impressed by the description of the evolution of the crisis in Sarajevo in June–July 1914, caused by the assassination of the Austrian Archduke Franz Ferdinand, into full-scale world war, even without the direct and firm will of the major actors. In Kennedy's view, this was a perfect example of a case where risk of a major conflict was embedded in the situation itself and where one incident could easily set off an unforeseen sequence of events and thereby trigger a larger conflict.

The third element of risk in U.S.–Soviet relations were poor communications and lack of trust. Burton (1969), in his work on conflict and communication, focuses on the role of reliable communications under conditions of confrontation, specifically mentioning the direct relation between availability and reliability of communications on the one hand and the probability of risk on the other. The problem of poor communications and lack of trust was directly related to the lack of confidence in the relations between the superpowers. They had come to understand the importance of at least limited trust and "rules of conduct" somewhere in the late 1950s (culminating in the McCloy–Zorin Accords, concluded on 20 September 1961). Two big questions still remained, however: Would or would they not manage to work out a "code of conduct"? And would both sides be sincere in following that code's prescriptions?

As a result, the first attempts to reduce the risk in the strategic relations between Moscow and Washington were undertaken in the days of the Kennedy administration. The process, as is well known, started with the establishment of reliable direct communication between the two capitals, following the 1963 "Hotline Agreement" signed shortly after the Cuban Missile Crisis was over in 1963 (see below). After that, it developed along two tracks: the creation of a trust of sorts (and the 1970 Non-Proliferation Treaty was highly instrumental in that respect) and the elaboration of joint risk-limitation procedures.

Risk negotiations between the USSR and USA acquired two interrelated values. One value was risk reduction itself. Each side was at odds with the other and planning for a nuclear war. Both had worked hard to develop new types of weapons and the means to deploy them. Both continued to emphasize their psychological and ideological preparedness for such a contingency. At the same time, both understood the high risk of such a strategy in terms of risking "letting the genie out of the bottle"

every time they introduced a new type of military technology. Thus, in parallel with what was sought officially (a strategy of containment), there was growing unofficial concern about the rising probability of risk.

A second value was that once a negotiation on risk reduction had started (with, first of all, negotiations on risk identification), it could not but lead toward a deeper and greater appreciation that the policy as a whole needed to be changed if risks were to be reduced to any great extent. The somewhat naive expectations of the first years after the Cuban Missile Crisis, namely, that the policy of confrontation could have continued in tandem with attempts to reduce the risk of unwanted developments soon changed when it was understood that, without a profound transformation in the policy itself, all efforts to contain risk or to manage it in some other way would be pointless.

It is thus legitimate to say that, at the beginning, the whole U.S.–Soviet risk reduction exercise was seen as a means both of making the process of military confrontation much more manageable and of freeing it from unforeseen or unexpected intrusions by risk from different sources. At that time, at least, it seemed that not only national security but also the process of confrontation had to be defended from risks. Only with time has it become evident that risks in U.S.–Soviet relations were not simply the result of neglect or human error but inherent in the type of relationship that existed between them, with its military confrontation, ideological hostility, and political rivalry. To reduce the risk in these relations, an effort to change their very substance was needed. But this understanding came much later, in the late 1980s.

This double side to risk management negotiation in U.S.–Soviet relations has added an unexpected and unusual dimension to the negotiations process. Instead of marginalizing risks and turning them into a less visible part of the strategic relationship, it has focused the attention of the public and of governments on the risk issue and brought it to the very heart of a heated debate. For example, the motion picture, *The Day After* (1983), played a tremendous role in mobilizing public opinion against various early plans of the Reagan administration ("Star Wars," the neutron bomb, and the like).

As part of the process of understanding the U.S.–Soviet negotiations on security risk reduction, it is important to remember that there was no sensible theoretical scheme or blueprint for solving this problem, at least at the very beginning. Although the attitude of both sides toward the issues of military confrontation was extremely responsible and, as a rule, was given top priority by the policymakers, there was almost no (or very little) attempt to work out a sensible strategy on risk control and reduction. The usual approach was of an ad hoc nature: deal with the problem considered urgent at the time, then forget about it once an agreement is reached.

Thus, the first sensible attempt to reduce the risk of a crisis through reliable communication was born of the Cuban Missile Crisis. The Agreement on the Prevention of Incidents on and over the High Seas followed in 1971 and the Agreement on the Prevention of the Risk of Nuclear War, covering arrangements on confidence-building measures, accidental or unauthorized launches, and so on, was concluded

in 1973. There is a strong impression given that subjects for negotiation were occasionally (or even accidentally) picked out of the host of problems existing between the two nations and then, depending on the situation, negotiated and solved fairly quickly. The more comprehensive or sophisticated approach to the problem of risk reduction and risk aversion between the two superpowers appeared only in the 1980s as a result of progress in their mutual relations and the introduction of unilateral and bilateral management procedures that allowed security risks to be reduced to an acceptable and tolerable level.

It is important to mention these developments in order to explain the processes through which issues for U.S.–Soviet negotiations on risk reduction and management were identified. In other cases studied in this volume, risk identification is/was a regular part of the management process; in U.S.–Soviet security relations, the problem of risk reduction arose only when there was the possibility of a human or technical error (which the military and security establishments were reluctant to admit) or when there was a realistic prospect of the confrontation being mismanaged. Through such instances, the need to reduce risks and to find ways to manage them became a solid ground for mutual relations in general and for prompt negotiations in particular.

Cases of U.S.–Soviet Negotiations on Risk

From among dozens of negotiations and agreements concluded between the Soviet Union and the USA in the years of the Cold War on the subject of security and arms control, it is sufficient, for the purposes of this study, to select the following cases: 1) the negotiations on the Hotline Agreement (1963) and the follow-up Agreement to Improve Direct Communication (1971); 2) the negotiations on the Agreement between the USA and USSR to Reduce the Risk of Nuclear War (1971); 3) negotiations on the Agreement on Prevention of Incidents on and over the High Seas (1972); 4) negotiations and conclusion of the Agreement between the Soviet Union and the USA on the Prevention of Nuclear War (1973).

Chronologically, the period during which these negotiations were carried out can be described as the one when the relations between the superpowers were moving from the total and absolute confrontation of the 1950s, crowned by the Cuban Missile Crisis in 1962, to the period of the 1980s, when the most meaningful achievements took place that finally led to the end of the Cold War. The thing to be reckoned with is the essence of these negotiations and agreements: establishment and improvement of communications; joint identification of sources of risk; discussion of measures and procedures to contain risk and to reduce it to acceptable levels; growth of trust; and, finally, transition to threat-reduction measures (arms control and establishment of direct military and security cooperation).

The literature on the subject of the U.S.–Soviet security negotiations is not that large. Among the names known in the area on the U.S. side are those of a group of people who were half-academics/half-practitioners and came to the field either

because of their professional experience (A. Dean, P. Nitze, E. Rowine, C. Vance, and others) or because their specific interests coincided with their academic occupation (J. Nye, G. Allison, A. Carnevale, B. Blechman, J. Steinbruner). Their main area of interest was not so much the process of negotiation, but its substance. Only some of them, especially former negotiators, paid attention to process (i.e., the organization and conduct of the negotiation). On the Soviet side there are works by retired diplomats (the former ambassador to the USA, A. Dobrynin; the former negotiator in Geneva, A. Kvitsinski); among the works by academics are those by G. Trofimenko, A. Arbatov, M. Millstein, and S. Rogov. In this group, too, only a few authors paid attention to the negotiation process (e.g., V. Israelian).

In that group of literature was a unique study undertaken by A. George at Stanford University that inspired many new ideas among researchers both in the USA and the Soviet Union. George's first monograph, published in 1983, was entitled *Managing US–Soviet Rivalry: Problems of Crisis Prevention* (George, 1983). This was the period when, at the height of the Reagan administration (which was very inclined toward power games), a policy needed to be formulated that was oriented toward containment of crises and control of risk. The author suggests that specific issues of crisis management should be studied (including risk assessment and risk management) and that the whole problem of risk control should be regarded as an important part of crisis management.

Another important publication was *U.S.–Soviet Security Cooperation: Achievements, Failures, Lessons*, published in 1988 and edited by George et al. (1988). This book deserves the highest praise for several reasons. It was written on an appropriate subject and at an appropriate time, when there was an urgent need to draw lessons from the experience of the early 1980s on security cooperation between the superpowers. The period of a "new world order" (pronounced a year later by the then U.S. President George Bush Sr) was fast approaching, and it was understandable that for the stability of the future order to be realized, it would have to be built upon security cooperation between the two military giants. George et al. (1988) also studied in depth the various issues of security cooperation between the superpowers: arms control and arms reduction, resolution of regional and local conflicts, non-proliferation, and the mechanisms of joint decision making, such as negotiation, consultations, and parallel unilateral steps.

George et al. (1988) pay much more attention to the security cooperation mechanisms of U.S.–Soviet joint decision making than previous authors. As the book was written at a time when there was a certain cooling-off in general U.S.–Soviet relations, it was important to try to identify, first, the extent to which negotiation on a problem of common concern (shared risks) differed from publicly stated policies. Second, the book also aimed to identify risk-management issues as the starting points for further negotiations on more general issues of threat reduction. And, third, the book treated issues of risk negotiations as inalienable, albeit autonomous, parts of the general field of the security cooperation, something which is fairly typical of all negotiations on risk management.

George et al. (1988) also shed light on some of the least-known concerns of negotiation. Overall, the contributors to the book had sound sources of information

and the book was something that even Soviet researchers could learn a great deal from (in the Soviet Union at that time it was hard to get first-rate and reliable information: this has not changed much to this day). But this was not the only advantage. The authors demonstrated the editorial concept that security cooperation did not include "more" and "less" important subjects: indeed, they interpreted security cooperation as an interconnected process every part of which—and, as a result, every negotiation—plays a cross-cutting role that cannot be divorced in any way from the whole process of turning competition (conflict) into cooperation. And this was the case in all the risk-management agreements mentioned above.

The agreement on the establishment of direct communication between Moscow and Washington (the Hotline Agreement) was negotiated at ambassadorial level in early 1963 and signed in the form of a Memorandum of Understanding on 30 June in the same year. As already mentioned, the idea of negotiation and agreement regarding direct communication was already in the air, prompted by the common understanding that the process of confrontation contained too many risks. There needed to be a mechanism whereby the leaders of both superpowers could communicate at times of crisis or when they needed prompt, first-hand information (Blechman, 1985).

It is legitimate to suggest that the whole hotline idea came directly out of talks between the leaders, was found relevant, and approved—only later to be relegated to the working level for formalization as an intergovernmental agreement. Because of the specificity of security risk management, this is not an infrequent occurrence. Very often, in the past and present, the most confidential and urgent issues—and risk control can be included in this category—are negotiated directly between decision makers, or in the media, or in both; only subsequently do they then become the subject of official negotiations. Alternatively, an issue may be solved without any negotiation at all, simply via an exchange of unilateral commitments. As an example may be cited the destruction of tactical nuclear weapons in the late 1980s, when the Soviet President Mikhail Gorbachev and his American counterpart, George Bush Sr exchanged unilateral commitments after agreeing in the course of an informal negotiation process to destroy their weapons.

Thus, although the negotiation on the hotline was of a visibly technical nature, its major political significance was evident and widely recognized. At the same time—and this needs particular mention—this negotiation was regarded by both sides as a corollary of the Cuban Missile Crisis and an ongoing part of the negotiation on the Partial Test Ban Treaty (prohibition of nuclear tests in the atmosphere, in space, and under water), which was signed on 10 October 1963.

The Partial Test Ban Treaty is mentioned simply as a reminder that the end of the Cuban Missile Crisis created a window of opportunity in the relations between the superpowers that helped start a series of negotiations between them leading to: 1) recognition of risk and measures to reduce it; b) recognition of common interests, including a slowing of the arms race, the non-proliferation of nuclear weapons, and the introduction of rules of conduct for the superpowers. Thus, the negotiation on risk reduction, though important, was only one of several items on the agenda between the Soviet Union and the USA (Ury and Smoke, 1984).

Once negotiated and agreed upon, the risk-reduction agreement, namely, the Hotline Agreement, took on a life and momentum of its own. The need to improve and further implement the Agreement prompted the next negotiation in 1970–1971. It was considered necessary to continue the negotiations because of the developments in communications technology at the time, and in mid-1971 this was fulfilled at the ambassadorial level. On 30 September 1971 a new agreement was signed which added two channels of direct satellite communication between the two capitals (telex and voice communication) in order to increase the reliability of the channels established by the 1963 Agreement.

In parallel with the 1971 negotiations to improve direct communication, there was another negotiation that ended in agreement on 30 September of that year; this was devoted to measures to reduce the risk of inadvertent nuclear war (Agreement on Measures to Reduce the Risk of Outbreak of Nuclear War). As is typical of such negotiations, there were almost no political issues or overtones, with the two sides negotiating both organizational and technical measures to prevent the accidental or unauthorized use of their respective nuclear weapons. The following items were agreed:

- A pledge by each party to take measures each considers necessary to maintain and improve its organizational and technical safeguards against accidental or unauthorized use of nuclear weapons;
- Arrangements for immediate notification should a risk of nuclear war arise from such incidents, from detection of unidentified objects on early warning systems, or from any accidental, unauthorized, or other unexplained incident involving a possible detonation of a nuclear weapon; and
- Advance notification of any planned missile launches beyond the territory of the launching party and in the direction of the other party (Nuclearfiles.org, 2008).

What typified this negotiation was the unusual combination of two aspects. The first aspect was the attention given to the negotiation by the top echelons of power who exercised almost daily control over the negotiation process. This close control made the process both easier and more difficult at the same time. It facilitated the process because the second aspect—the participation in the negotiations of large groups of military and technical experts—caused a major problem of coordination on each side of the table (Dobrynin, 1995). However, this did provide an opportunity for negotiators to meet leaders of the governments on a regular basis and opened the way to a smoother handling of the differences between the individuals and agencies involved in the negotiation.

At the same time, however, the interference of policymakers made the negotiation more difficult in the sense of creating problems regarding the final text of the agreement. It is always hard to explain all the aspects of an agreement before agreeing the final wording; the balance of gains and losses is not particularly evident. This is why untimely interference by a decision maker causes problems, in the same way that a hungry diner, by poking his nose into the kitchen, holds up the cooking process.

In any negotiation on such delicate issues as risk management there is always a certain formality in the way it is conducted. The process has to be carried out almost in private, without unnecessary interference either by the media or by legislators (who as public figures will unavoidably draw publicity to the process). This does not mean that the executive arm of government will allow the process to develop uncontrolled. But being able to discuss issues that are sensitive (from the security point of view) in an atmosphere of growing trust and cohesion creates close and even friendly relations among the negotiators. And it is in this context that interference by the executive can become destructive for the process.

The Agreement on the Prevention of Incidents on and over the High Seas was negotiated during two sessions: one in October 1971 and the other in May 1972, at the time of U.S. President Nixon's (1969–1974) visit to Moscow. By that time, the problem of incidents on and over the high seas had acquired importance because of two developments. The first, the advancement of the "Blue Water Strategy" by the U.S. navy to expand its operations across the world's oceans, made addressing the possibility of incidents at sea more urgent. Equally, the introduction of "Gorshkov's Strategy" into the activities of the Soviet navy brought the same result. Named after the then commander-in-chief of the Soviet navy, Admiral S. Gorshkov, the strategy significantly stepped up Soviet naval activities with the aim of shadowing the U.S. navy and protecting Soviet supply lines.

Another aspect of the same problem was the desire to codify in some way the acts of each side in relation to their ships and aircraft (the detention of the U.S.S. "Pueblo" by North Korea in 1968 shows the significance of this). A totally new development, however, was President Nixon's strategy of negotiating with both the USSR and China to channel their rivalry in a much more constructive direction. In this sense, the negotiation on incidents at and over the high seas seemed both highly relevant and quite easy to achieve.

The negotiation was completed and the agreement signed on 25 May 1972. Among the major discussions at the negotiation were security provisions covering the movement of: 1) the ships and naval units of both sides on the high seas, and 2) any craft in flight over the high seas, according to the standards and norms of international law. The sides also discussed mutual obligations to prevent actions by their ships and aircraft that could lead to a danger to the ships and aircraft of the other side. Within this format they also negotiated consultation procedures and mechanisms for use in case of accidents. This negotiation had a dual purpose: to oblige the military on both sides to work together in the event of accidents (following reports that some Soviet submarines had not received adequate U.S. assistance following an incident) and to avoid an escalation of these incidents into larger clashes.

At the beginning, there was a danger that the negotiation could become difficult because of the composition of the teams, on which the military, especially naval personnel, were overrepresented. Concerns about secrecy, professional rivalry, lack of coordination with the diplomats, and the inexperience of the negotiators had also been expressed. But, as it happened, in the long run, almost none of these fears came to fruition. On the contrary, the negotiation appeared to be quite professional, transparent, and businesslike. What worked particularly well was the pre-negotiation,

which was based on a solid record of the incidents addressed on both sides, all with an analysis of possible alternative ways the incidents could have been dealt with. This avoided protracted and even pointless discussions. And, of course, the timetables of the leaders were also pressing, as the agenda for discussions was vast.

Finally, on 22 June 1973 a treaty was negotiated and signed in Washington on the prevention of a nuclear war between the Soviet Union and the USA. The negotiation was based on the assumption that both sides were equally interested in preventing nuclear war and any other use of nuclear weapons. From that starting point, they pledged not to take any action that might lead to a dangerous aggravation of tensions; they also promised to avoid military confrontations and not to let anyone, including their own side, unleash a nuclear war.

In the event of the possibility of nuclear war threatening relations between the superpowers, both sides agreed to issue commitments to start mutual consultations with a view to avoiding a conflict. The process of negotiation was quite smooth and even-handed. It touched on issues that were of mutual concern, given that both sides were almost equally interested in keeping their own arsenals and the activities of their military under control. In this sense the negotiated agreement was regarded by both sides as an additional means of using national and non-national observation facilities to control what was happening inside the strategic arsenals. From this point of view, negotiations on strategic risk management had a definite function in terms of being an auxiliary means of improving national management capacities through international cooperation. As a result, there was always an opposition, sometimes open, sometimes hidden, in all these talks.

To some extent, the negotiation on the reduction of the threat of inadvertent nuclear war had a declaratory, almost propagandistic, nature. This was emphasized by the fact that the Soviets wanted to sign it during the visit of the Communist Party Secretary, General Leonid Brezhnev, to the USA in June 1973, when it was expected to have a great impact on American public opinion. This set certain time constraints which helped negotiators skip over unimportant details. Also highly important in this negotiation were: 1) the adherence of both sides jointly to the goal of prevention of nuclear war; 2) their readiness to declare that position for the knowledge of other nuclear powers (particularly China); and 3) agreement by both that the achievement of this goal was within their capabilities. Even more importantly, behind these aspects there was a shared understanding of the nature of crisis escalation and of ways of controlling it. Overall, this made the problem of negotiation easier and non-confrontational.

As all these negotiations were classified as "national security," complete information on them is still unavailable. There are memoirs in which different episodes of these negotiations are described (Kissinger, 1979; Dobrynin, 1995). There is literature which uses some of the declassified materials (see George, 1983; George et al., 1988). But there is still not enough information available to build a detailed reliable picture of the whole process of negotiations. What follows is a legitimate attempt to reconstruct some of the important features of these talks as they were conducted. Almost all the talks were carried out in close communication with other negotiations aimed at threat reduction. Though negotiations on risk reduction were,

as a rule, an independent undertaking, they were still—by their very nature—part of a larger process. While trying to reduce the overall threat from the other side, both superpowers were interested in reducing the "risk" part of that threat.

As soon as both superpowers agreed that they had a common interest in avoiding nuclear war, their thinking underwent a two-way split: there was a focus on how to avoid a nuclear war through a sustained long-term effort to reduce arms ceilings, ensure much greater transparency of military doctrines, and fulfill mutual obligations; on the other hand, there were efforts to take immediate urgent measures that could significantly reduce the probability of risk prior to dismissing it completely at some later stage. That is why negotiation on risk reduction was always a part of a larger security effort—albeit a rather independent part with its own raison d'être.

The second feature of these negotiations was, of course, their closed nature and the almost complete media blackout surrounding them. It was not that the participants had ideological reasons for not wishing to demonstrate the actual degree of their cooperation. Quite the opposite: once the agreement was signed, the negotiations were a propaganda showcase for each side. But during the negotiation, as long as an agreement was not signed, both sides preferred not to make public any information about it; they considered that a failure to find a compromise could become a political risk itself—in other words, failure could easily provoke a crisis.

Third, each time a negotiation on risk reduction took place, it was conducted within a short and fruitful period. There are several hypotheses regarding this: the parallel and highly similar way of thinking on both sides; the fact that the type of tools and mechanisms put forward by each side were logical and thus easily predictable; that the decision makers quite sensibly placed the negotiators under pressure; and the visible role of the professional culture (both sides were usually represented by professionals who had very similar views on the subject).

Fourth, each negotiation may be regarded as a highly technical, almost non-political undertaking. While at other similar security negotiations a political element was dominant and had a visible imprint on the whole process and outcome of the negotiation, the talks on risk reduction were intentionally stripped of any political and ideological component and made purely technical: the best possible outcome was identification of risk, finding an effective method of communication and, as the ultimate goal—as the very minimum of any conflict—avoidance of a larger conflict.

Fifth, almost all the agreements that followed had no time limits. They were not linked to any broader conditions; they were regarded as values in themselves.

Lessons and Conclusions

On the surface it may seem that the negotiations on the establishment of some kind of control over the risks to national security in U.S.–Soviet relations were quite simple exercises. If one compares these cases with negotiations on arms control, a striking difference in time span can be detected. Usually, negotiations on arms control took years to bring any success. If one compares the cases of risk negotiations

with other areas, for example, economic relations, again there is a striking difference. It is thus understandable that risk negotiations, because of the high speed of the process, because of their seemingly "technical" nature, because they were usually conducted at the most senior ambassadorial level, looked like simple events which required little effort.

In reality, the picture is completely different. It is important to remember that the idea of a risk negotiation in U.S.–Soviet relations emerged, or was "ripe" when a certain set of conditions appeared. First, evolution of military technology on both sides proved that hopes for unilateral advantages were pointless and that any attempt to rely on the introduction of new systems of weapons (ICBMs, MIRVs, ABMs, SS-20s) not only threatened to destabilize the strategic balance but to increase the probability of risk in mutual relations. Second, if a crisis occurred, both sides were almost equally exposed to its possible effects, which turned out to be a good foundation for the development of the ideas pertaining to "equal damage" in a conflict in the nuclear era. Third, neither side, to an almost equal extent, wished to make its position vis-à-vis the other in a confrontation dependent on risks, preferring instead to negotiate the risks rather than to base their calculations on shaky ground.

All these issues pushed to the fore what was probably the central issue of security risk negotiations—the problem of risk identification. Both sides had to work hard to agree on the sources of risks and identify them. But here certain special features of the area of security risks became of crucial importance: risk identification takes place not within a negotiation on risk (as one might logically expect) but outside it, in the area of security relations, along with issues related to control of the area of security, to building trust or confidence in the adversary, and to the need to stabilize the relationship in conditions of confrontation.

If all these cases of negotiations had started with risk identification, then the whole process might have taken much longer and had only a limited hope of success. But in actuality, it was the decision makers who tackled the issue of risk identification and the need to negotiate it; only after a common agreement on this issue would they pass on the problem to the working echelons to complete the details. Thus, it can be said that the issue of risk identification—important though it undoubtedly is—did not formally exist in the negotiation cases quoted. In effect, the whole process of negotiations was split into two parts: first, identification of the subject at the top level (sometimes together with an agreement in principle on the means of solution) and second, technical negotiation at the lower level which led to an agreement (though sometimes, as one may see, the final touches to the agreement were also provided at the top level).

A negotiation on security risk control may happen for one of two main reasons. One reason may be that risk, by its very nature and because it cannot be fully controlled, presents a challenge to both (or more) actors. In this case, irrespective of the general state of relations (good, bad, extremely bad, etc.), the superpowers had a definite interest in making their relationship more stable and predictable by conducting some sort of risk-control negotiation. Among the cases of negotiations mentioned above, the best example would be the agreement on the prevention of incidents at and over the high seas: this helped to institute a regime within which the naval

rivalry between the superpowers could be regulated at the lowest possible risk of a confrontation that might evolve into a major crisis.

The second reason is the complete opposite. It may be that there are signs of fatigue with the confrontation and that the idea of some sort of accommodation becomes popular; this forces both sides to begin a joint action to initiate control over expected (and unexpected) risks. This occurs because such risks would challenge their ability to keep the situation under control. Among the cases mentioned above, the negotiation on the agreement on prevention of nuclear war of 1973 may be mentioned.

However, both sources indicate that there is quite a high level of proximity or cohesion between the superpowers in terms of their basic security interests. Although there was in the 1950s a period when the idea of using strategic "uncertainty" to intimidate the other side (the "strategic bluff") was popular, in reality neither of the superpowers was prepared to act under conditions of ambiguity, as such actions would be fraught with serious risks to their national security. Sober analysis has brought a firm conviction that the interests of a "controlled" confrontation—not to mention the interests of international stability—are best served by a successful negotiation on risk control.

The second major conclusion that may be drawn as a result of an analysis of negotiations on risk control is that the actual subject of these negotiations is very limited. Unlike threat-reduction negotiations, which are concentrated on such matters as arms control and reduction, confidence building, security cooperation and so forth, negotiations on risk reduction are usually limited to two things: 1) communication, including the exchange of verifiable data on sources of possible risk; and 2) procedures prescribing the mode of action of each side should a risk appear that might develop into a security crisis. When limited only to such tasks, therefore, negotiations on risk control never take too long to complete. However, such negotiations do not relate to risk-prevention issues because the goal of preventing a risk usually comes at some stage during the development of mutual trust and confidence.

The third important feature of negotiations on risk is that they are usually treated as highly "technical" because of the inherent nature of their tasks. Political issues, the most sensitive and controversial aspects of the relationship, are not touched upon at all, or are approached in a very delicate manner. Negotiators assigned to such delicate missions are not usually instructed, or even supposed, to raise controversial issues (it is not part of their mandate to do so). Instead, they concentrate on highly specific, technical questions that are quite easy to negotiate. Extremely important, however, is that the results of such negotiations and even the fact that such negotiations take place, have a high political significance.

Finally, negotiations on risk control have a significantly broader importance and value than ordinary, more concrete negotiations because they stabilize the relationship in a certain direction, namely, toward higher predictability and toward the shared value of avoiding unwanted confrontation. A negotiation on risk control either accompanies negotiations on broader issues of threat reduction or precedes them as an overture toward some more fruitful stage. There is no doubt that risk-control negotiations in the area of security area may, and do, have a value of their

own in the sense that they form part of the policy of smoothing out any rivalry and making a situation more risk-free.

It is also important, however, to see that the real significance of risk negotiations in the security area lies in the fact that they frequently achieved far more than they were originally intended to.

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Transboundary Risks: The Case of Temelín

Helmut Böck and Dana Drábová

Austria's Path to Nuclear Isolation

After the First Geneva Conference in 1955 and the Atoms for Peace Movement, Austria was one of the countries to become enthusiastically involved in worldwide nuclear development; it built one industrial 10 MW reactor in Seibersdorf (commissioned in September 1960), one university training reactor in Vienna (commissioned in March 1962), and another 1 KW training reactor in Graz (commissioned in May 1965). The Seibersdorf reactor was also to be the research center for planning future nuclear power plants (NPPs) in Austria by the end of the 1960s. At the time there were also plans for a small 10–20 MWe prototype reactor, a project that was dropped in favor of a full-scale nuclear power plant. The plans for the first NPP took shape in the second half of the 1960 through an organization that was specially established to take charge of the project.

The Zwentendorf Case

The Austrian government realized that at the end of the 1970s an additional source of energy would be necessary to cover the needs of industry and consumers. A possible solution was the building of several nuclear power plants (NPP), and two companies were founded, the *Kernkraftwerks-Planungsgesellschaft* (KKWP) in 1968 as the main coordinator of nuclear planning and the *Gemeinschaftskernkraftwerk Tullnerfeld* GmbH GKT in 1970 for the NPP Zwentendorf project. After a call for tenders and a selection process, Siemens Austria was contracted to supply a 700

Helmut Böck
Atominstitut Vienna, Austria, e-mail: boeck@ati.ac.at

Dana Drábová
State Office for Nuclear Safety, Prague, Czech Republic, e-mail: dana.drabova@sujb.cz

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MWe boiling water reactor at the Zwentendorf site, about 40 km west of Vienna. The first construction permit was issued in February 1972 and construction started immediately. The contract stipulated that more than 70 percent of the civil, mechanical, and electrical components should be supplied by the then very capable Austrian nuclear industry.

In the mid-1970s a worldwide anti-nuclear movement started, and this also reached Austria. Many anti-nuclear groups started to question the necessity of NPPs and the media supported the movement. Various groups such as mothers against nuclear, medical doctors against nuclear, biologists against nuclear, and many others were established; this resulted in Austria's population becoming more and more uncertain about nuclear issues. The government thus decided to set up an expert group to carry out a nuclear information campaign; this failed completely as the information meetings were mainly attended by anti-nuclear activists and no serious discussion was possible.

As a result, the Kreisky government decided in 1978 to hold a public referendum on the future of nuclear power in Austria. Until this moment the discussions were based mainly on the technical arguments for and against nuclear power, but the referendum set for 5 November 1978 introduced a new political aspect to the situation.

When the decision to build Zwentendorf NPP was taken in the 1960s, Austria's government was led by the Christian Democrats (OeVP) and this party was the driving force behind the NPP at the time. Meanwhile Austria had voted in the Social Democrats (SPOe), and the Chancellor was Kreisky. As Kreisky also supported Zwentendorf and even stated that in the event of a no vote in the referendum he would resign, many pro-nuclear OeVP party members saw a chance to remove Kreisky from government, even though they were pro-nuclear. They therefore voted anti-nuclear for political reasons.

In addition OeVP supporters in the energy industry were afraid that the continuous development of hydropower in Austria might be negatively influenced if nuclear power were introduced; there was little support for a pro-nuclear movement in the power industry. The referendum was conducted amid great emotion and the result was as follows:

31.6% against Zwentendorf
31.0% in favor of Zwentendorf
35.9% did not participate
15% invalid

The difference in votes for and against was about 30,000 out of a total electorate of 5 million. Thus, on 1 December 1978 the government issued a law forbidding "the use of nuclear fission for energy production in Austria." This law could only be amended by the parliament with a two-thirds majority.

In the following years some efforts were made by the Austrian electricity boards to restart discussions on Zwentendorf NPP, but the accidents at Three Mile Island in March 1979 and Chernobyl in April 1986 finally closed the chapter on Zwentendorf and lent significant credence in the eyes of the public, the media and the Austrian

government to the 1978 decision. A few components have been sold to other power stations, but it is still interesting to visit Zwentendorf NPP as a historical technical monument.

The Mochovce Case

Since this period, all Austrian political parties and all major newspapers and media have followed a strict anti-nuclear policy which not only focuses on Austria but is also exported to neighboring countries. Toward the end of the 1980s the former eastern bloc disintegrated, the borders opened, and Austria realized that a number of Soviet-designed NPPs were operating near its borders. As a result, Austria's anti-nuclear activities now expanded cross-border.

In October 1978 the Austrian government decided to establish a Reactor Safety Commission (RSC), composed of a number of national and international senior specialists in the nuclear field, to provide the government with highly qualified expertise on nuclear issues. However, in April 1990 the RSC was dissolved for dubious legal reasons by Austrian Chancellor Vranitzky and replaced by another group, *Forum für Atomfragen* (FAF), a group composed mainly of people known for their anti-nuclear background and well supported financially by the Austrian government. This group was designed to support the government with technical expertise in its anti-nuclear strategy in neighboring countries.

The first major test case was the decision of Slovakia to continue work on its WWER 440/213 NPP at the Mochovce site. During the separation of the Czech and Slovak Republics, four WWER 440/213 units were at various stages of the construction process. After a careful review process Slovakia decided to complete at least two of the four NPPs, and this immediately caused a storm of protest in Austria, even though the NPPs were about 120 km away from the Austrian border. At the request of the Austrian government and with the ready cooperation of Slovakia, FAF was supplied with all necessary documents on the design, safety issues, and licensing documents regarding Mochovce; technical specialist meetings were held and visits to the facility arranged. The time-consuming and expensive review process by FAF resulted in a report several hundred pages long, which concluded that the NPP at Mochovce was basically unsafe, did not fulfill internationally accepted safety standards, and posed a high risk to the Austrian population. This is in contradiction to a number of international safety review teams of the International Atomic Energy Agency (IAEA) certifying that additional safety requirements to upgrade the NPP at Mochovce to Western standards had been carried out.

Slovakia was trying to obtain financing from the European Bank for Reconstruction and Development (EBRD) to complete Mochovce Unit 1, and the Austrian government succeeded in blocking this credit. This was in fact a step in the wrong direction for Austrian's safety concerns, as Slovakia was now no longer bound by the strict EBRD conditions and control regarding upgrading the safety of the NPP. Austria even appealed to both the Commission and the Parliament of

the European Union (EU), and Austria's politicians fought with quasi-religious zeal for a nuclear-free Central Europe[1] supported by an almost paranoid attitude on the part of the Austrian population and media against nuclear power.

The situation escalated as anti-nuclear activist groups such as Greenpeace and Global 2000 went so far as to occupy the Slovakian Embassy in Vienna on 22 May 1998 demanding "all technical documents on Mochovce" from the Slovakian government[2] which, however, referred them to the supplying companies. Members of the government-created FAF even warned at this stage of a "Super GAU" (i.e., a worst-case scenario nuclear accident) in Mochovce.[3] The closer the initial criticality of the NPP Mochovce came, the more irrational the actions of anti-nuclear activists and even of Austrian government representatives became.

For example, Slovakia was warned by the then Austrian Chancellor Klima that the safety of Mochovce could play an important role in terms of Austria's support for Slovakia's accession to the EU.[4] By requesting further discussions and additional documents, Austria wanted to delay commissioning; this Slovakia countered by saying that all the relevant documents had been handed over and any further discussion must be coordinated by the IAEA, the highest nuclear authority. Finally on 9 June 1998 the headline in the newspaper *Kronen Zeitung*[5] announced: "The deadly reactor has been switched on; the danger grows from day to day". On 11 June, strongly supported by *Kronen Zeitung*, one of the largest demonstrations ever against Mochovce took place in Vienna with about 100,000 protesters taking part.

During the initial startup of any NPP a large number of tests are carried out, some of them resulting in a reactor shutdown; these procedures were classified as serious reactor accidents in Austria's media, for example, "The deadly reactor already found defective during startup".[6] Such media reports found appropriate resonance with the public. Ironically, a few weeks later it was found that Austrian companies had supplied several components and systems to the NPP at Mochovce.

About a year later on 25 October 1999 the Austrian Ambassador to Bratislava, Gabriele Matzner, heavily criticized the Austrian anti-nuclear policy against Slovakia[7]:

- The contradictory remarks of Austrian government officials weakened the Austrian position;
- Austria was not able to prove internationally that the NPPs at Bohunice and Mochovce constituted a danger;
- Austria's anti-nuclear policy seemed to be mainly politically and media-orientated;

[1] *Die Presse*, 29 May 1998
[2] *Der Standard*, 23 May 1998
[3] *Der Kurier*, 25 May 1998
[4] *Der Kurier*, 27 May 1998
[5] *Die Krone*, 9 June 1998
[6] *Die Krone*, 10 June 1998
[7] *Der Standard*, 16 November 1999

- The Slovakian impression is that Austria will only be satisfied with the closure of all NPPs.

The final part of the NPP Mochovce story is summed up well by a headline[8] stating: "Austria's anti-nuclear policy lies in ruins." Unit 2 was successfully commissioned on 1 December 1999 without any major Austrian anti-nuclear activities taking place.

The Temelín Case

Background

While most of the facts presented here concerning the long-standing Czech–Austrian debate over the Temelín nuclear power plant have been compiled from open sources (e.g., daily press archives), the authors have also discussed some points with direct participants in various events. Since fall 1999 the Czech co-author was a member of the technical team supporting top Czech politicians in the debate. The Austrian author did not participate actively in the negotiations but has had many first-hand personal discussions with a high-level participant in the negotiations.[9] However, the chapter does not contain (with a small exception under "Present Situation") any personal comments or any information that is not available from open sources.

The controversy over the Temelín nuclear power plant in the Czech Republic was transformed from a domestic issue into an international one at the beginning of 1990s. Temelín represented a test for nuclear power interests across Europe. During the Communist era, Czechoslovakia experienced a high energy intensity, low energy prices, and inefficient energy production and electricity distribution, all of which distorted the economy. As Czech heavy industry and chemical production required a reliable supply of electricity, nuclear power seemed to be a viable source that was consistent with the Communist model of building large projects.

Temelín is located in the southern part of the Czech Republic, near the city of Ceske Budejovice, approximately 60 km north of the Austrian border. The decision to construct it was approved in 1978, based on a deal in which the Soviet Union agreed to support Czechoslovakia in the building of a nuclear power plant with a 41000 MWe output. The project began in 1981, the design phase was finished in 1984, and construction works began in 1986. After the political changes in the Eastern bloc in 1989, the decision was taken to stop construction of units 3 and 4. In the years that followed, completion and startup of units 1 and 2 were the subject of intensive political conflict involving many players.

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[8] *Der Kurier*, 2 December 1999

[9] Schmidt, F. W., Personal communications

The Early Years, 1978–1988

First contacts and the preparation of the first treaty between Czechoslovakia and Austria were established in the late 1970s. Before signature of the treaty, two Czech officials were sent to the Soviet Union for consultations. A bilateral contract was signed on 18 November 1982, which came into force on 1 June 1984. It was really a pioneering treaty in Europe, given that it was between countries with different political systems and with a different attitude to nuclear power. After it, similar treaties between Hungary and Austria, German Democratic Republic (GDR) and Denmark, Union of Soviet Socialist Republics (USSR) and Finland, and others followed.

This bilateral treaty was first applied to all four units at Dukovany. The original basis of this treaty was a bilateral information exchange between the two partners. As Zwentendorf failed, the only information flow was from the Czech to the Austrian side. This period was nicknamed the "Schmidt–Beranek" era, as these two government officials played an important role in the smooth application of the treaty with a minimum of conflicts. However, this period ended for two reasons:

- Political changes in the former Czechoslovakia created a more open and transparent environment which was misused by various anti-nuclear organizations;
- The above-mentioned officials were excluded from the bilateral negotiations;
- There was a new bilateral treaty, resulting from the Chernobyl accident and a more aggressive attitude on the Austrian side. To this time belong the Bohunice V-1, Mochovce, and the Temelín case;
- Discussions on Bohunice began with a meeting between Czech Prime Minister Calfa and Vranitzky in 1990.

The Years 1988 to 1990

Before the fall of the Communist regime politically relevant critical voices had already been raised against the plant, mainly from nearby Austria; the attitude of various Austrian political forces remained critical during the 1990s. The Austrian position toward Temelín was influenced by the country's proximity to the plant and the fact that Austria is a non-nuclear state. In 1988 the Czech Press Agency (CTK) covered the visit of Chancellor Vranitzky to Czechoslovakia. It ran articles citing the Austrian media while, at the same time, trying to contain domestic criticism of Austria by pointing out the difficulty if not impossibility of implementing their claims: "Visions that Austria could prompt a neighboring state to abandon nuclear energy or ultimately request that construction of the nuclear power plant at Temelín be suspended, is fine in propaganda terms but not politically realistic. Moreover, it is impossible according to international law."

A campaign against Temelín began in Austria in spring 1989. Chancellor Vranitzky issued a memorandum aimed at supporting the Czech Republic's economy if it stopped construction of Temelín. As a result the Temelín case was already

attracting media attention at the end of the 1980s. At that time Czechoslovakia usually responded to Austrian criticism by challenging the correctness of information on which it was based. At the same time Czechoslovakia was ready to provide documents to allow Austrian experts to participate in the assessment of the plant.

The fall of the Communist regime in November 1989 gave both Austrian NGOs and politicians opportunities to further their anti-Temelín policy. In December 1989 Austrian Greenpeace visited Czechoslovakia to discuss the Temelín case. The main points arising from the Greenpeace press conference held in Prague were the perception of the negative consequences of constructing the plant, the fact that the plant was unnecessary, and the predicted rise in its construction cost in the future. Next day the Austrian minister of the environment, speaking to the press, said that the fall of the Communist regime was an opportunity to get rid of all the leftovers of Communist, including Temelín and nuclear energy in general. By the end of the year the Austrian press was informed several times of the negative attitudes of various Austrian politicians toward Temelín; it hailed the visit of Greenpeace as a success, saying that the campaign would have abiding effects.

The Austrian pressure continued in the following months and years. The Czech side on the other hand tried to explain and justify the construction of units 1 and 2. The negative impact of coal power plants in northern Bohemia served as the main argument in favor of Temelín. The Czech side constantly declared its willingness to keep Austrian partners informed, to negotiate, and to open the doors for an international assessment of the plant. On 25 October 1989 a bilateral agreement between the Czechoslovak and Austrian governments dealing with the issues of mutual interest in the field of nuclear safety and radiation protection was signed.

Temelín, as the biggest constructed nuclear power plant in Central Europe, became the symbol of anti-nuclear protest, and a broad anti-Temelín coalition formed step by step in Austria. At the end of 1990, for example, the Governor (*Landeshauptmann*) of Upper Austria announced the foundation of a new anti-nuclear organization and supported the publication of 40,000 brochures describing the danger of nuclear energy. The Provincial Assembly (*Landtag*) of Upper Austria recommended that the Austrian government propose to the EU the conversion of Temelín into a gas-powered plant and offer an Austrian loan to pay for it. It also established a fund to finance activities to stop the Temelín construction. Austrians claimed that it would be too expensive to bring Temelín into compliance with EU nuclear standards, rendering the plant unprofitable. Upper Austria stationed a permanent representative in Prague to channel information about the safety and the cost to the Czech and Austrian governments.

The Years 1991 to 1995

A 1990 analysis by the IAEA found design flaws in the VVER 1000/320 and recommended changes, for example, the replacement of the instrumentation and control system and the core. The decision was taken by the investor (ČEZ utility) to organize

a new, comprehensive reassessment of the design (safety and operational aspects), the availability of equipment and the system supplier (mainly from former USSR contracts), and the economic viability in order to obtain inputs for the final consideration of the whole project. A quite extensive "third party review" component brought considerably more transparency into the decision process (by the IAEA, Halliburton, NUSS, etc.).

In March 1993 ČEZ awarded the contract in question to Westinghouse. Before the U.S credit from the Exim bank to Westinghouse for upgrading Temelín was considered, Austrian officials began lobbying against Temelín in the United States Congress.

By early 1994 an Austrian delegation, coordinated by the Director of the Austrian Energy Agency (*Energieverwertungsagentur EVA*) Manfred Heindler, traveled to Washington to urge the U.S. government to block a multi-billion dollar credit granted by Exim bank to Westinghouse to upgrade the Temelín NPP. The letter from Heindler to the Director of the Nuclear Regulatory Commission (NRC) of the United States, Ivan Selin, was answered by the NRC on 18 March 1994: in that letter, Selin answered bluntly that the Temelín question could only be solved directly between Austria and the Czech Republic and that Austria should not try to turn it into a problem between the USA and Czech Republic. Selin further accused Heindler of misstatements in letters sent to U.S. Vice President Al Gore, members of Congress, and other high-level U.S. government officials. Selin further confirmed that the Temelín NPP, together with the Westinghouse refurbishment, would become the most modern and safest NPP of all the WWER 1000 plants. The whole mission was disgraced, but this was not published in Austria's media for understandable reasons, as the costs of this mission were about US$170,000 and the FAF representatives received a chilly reception from their U.S. counterparts.[10]

Austria asked that an Environmental Impact Assessment (EIA) open to public comment be made. The Czech government was of the opinion that the EIA, published in 1980, was still valid.

It was near the climax of the Mochovce discussions that the Austrian public started to realize that preparations were being made at another NPP site at Temelín in the Czech Republic (licensed for four 1000 MWe NPP type WWER 1000/320) to finalize at least two of the originally planned four Soviet-designed NPPs. Now that the battle against Mochovce was practically lost, Temelín entered in the focus of the media and immediately all political parties, all newspapers, and all anti-nuclear groups activated all their capabilities to prevent the NPP Temelín going into operation.

In the first half of the 1990s, most discussions on Temelín were held only at the technical and economic levels; it never became a major issue of domestic politics or an election theme. In contrast, since the late 1980s a broad anti-Temelín coalition has gradually been forming in Austria—one of the precursors of the later dispute was identifiable even at this stage. The nature of the discussions was totally different on each side of the border.

[10] *Die Umwelt*, May 1994

Some of the arguments on the Czech side were:

- Additional 2000 MWe will allow the closure of coal plants in order to meet the criteria of the Clean Air Act from 1992;
- In the mid- and long-term perspective power consumption will increase in the Czech Republic;
- The level of safety is significantly (visibly) increased by design changes;
- A diversification of energy supplies and an improved energy mix (at that time gas and oil were exclusively imported from the former Soviet Union territory) is necessary for the Czech Republic.

Some arguments on the Austrian side were:

- Application of EU safety standards would increase the cost; the project would never pay off;
- The plant design safety should be reviewed based on German safety standards;
- Electricity from Temelín was not needed; any future increase in demand for electricity supplies could easily be compensated for by energy savings;
- This project had never gone through a standard EIA process with free public access;
- The plant could be easily converted to a gas-fired plant and Austria would offer credits for financing.

Both sides concentrated mainly on the domestic scene. In regular bilateral discussions held under the Agreement on Exchange of Information in the nuclear area the issue of Temelín was never escalated; both sides operated on this working level, repeatedly explaining their opposing positions. Almost the same procedure was applied at the political level, as the Czech Republic continued to implement its original communication strategy.

The Years 1996 to 2000

Throughout 1998 and 1999 there was the threat that Austrian opposition to Temelín would be linked to the Czech accession to the EU. The pressure from the province of Upper Austria on the Austrian government increased as Temelín neared completion and Upper Austria asked the federal government to reopen intensive talks with the Czechs. The basis of the Austrian position was that states bordering a country with nuclear power plants have a right to be concerned about safety. The Austrians also wanted to use German standards as a measure, as the EU did not have nuclear standards except for radiation protection and transport of nuclear materials.

It is also important to note that the accession of the new EU member states (including the Czech Republic) was now much closer than during the Mochovce case, and the Austrian government's plan was to veto the Czech Republic's accession if Temelín were put into operation. Temelín was thus elevated to the status of an international problem affecting the whole EU.

Furthermore this was also the boom period of the Internet and the Temelín public information center placed all the day-to-day events of the pre-startup and startup progress on the Web, including a chat room. But instead of using and interpreting the expert technical information on the Web site in a responsible way, the Austrian media completely misused the information, inflating any minor problem posted there to a major incident. This is a typical example of too much information being impossible for the media to handle properly, especially if the media's attitude is predominantly negative.

In addition during this period major internal changes took place in Austria as the SPOe lost the federal elections in November 2000 and a new coalition government of the OeVP and the right-wing Austrian Freedom Party (FPOe) took over in February 2001. This created another international uproar and triggered the well-known EU sanctions against Austria which lasted approximately one year.

By 2000 the Austrian position had become complicated because of the nature of its coalition government. The far-right Austrian Freedom Party (FPOe), headed by Jörg Haider, was vehemently opposed to Temelín, as was the Austrian Vice-Chancellor Susanne Riess-Passer (FPOe), who compared Temelín to Chernobyl because of the unpredictable risks associated with nuclear power plants. If Haider pulled out of the coalition shared by his party with Chancellor Wolfgang Schüssel's centre-right People's Party (OeVP), the government could fall. All four political parties opposed Temelín, but it was the populist and xenophobic stance of the FPOe that threatened to prevent Czech accession to the EU. Moreover, Austria is a federal state whose provinces have their own governments and legislatures. Both the provinces of Upper and Lower Austria worked independently to influence the federal government and worked with Austrian and international environmental NGOs opposed to Temelín. Members of the Upper Austrian Green Party wanted direct contact with Czech officials and argued that Temelín should be closed pending a new environmental impact assessment (EIA). These two facts are very important in terms of understanding Austria's reactions to the Czech intention to begin operating Temelín NPP.

The SPOe being strictly anti-nuclear now used its new opposition role, together with the growing Green Party, to urge the OeVP–FPOe government to use all possible EU instruments against Temelín. The FPOe expected an increase in supporters as a result of its very strong anti-Temelín policy. The OeVP, although anti-nuclear, tried not to follow a strict confrontational path against the Czech Republic and to continue the long-standing good relations with its Czech neighbor. Bilateral negotiations on technical and political matters were begun with the above-mentioned FAF as Austrian technical counterparts and representatives from the Federal Chancellery as political counterparts.

Since early 2000, under the pressure of the imminent first fuel loading to Temelín unit 1, political discussions had a high profile: the aim of these hectic political consultations was to calm down the situation and aim for a normal dialog, but without any visible result.

To give some examples of the negotiators involved during this period a list of some major meetings follows:

- 11–12 July 2000: visit of Erhard Busek, Austrian representative for EU enlargement, to Prague, for a meeting with Pavel Telička, Secretary of State for foreign affairs and responsible for EU accession negotiations;
- 28 July 2000: meeting of Czech Prime Minister Miloš Zeman and Chairman of Austrian Parliament Heinz Fischer (SPOe);
- 30 August 2000: at the conference in Alpbach, Austria, Pavel Telička discusses the topic with Benita Ferrero-Waldner, Austrian Foreign Minister;
- 2 September 2000: extraordinary bilateral meeting under the governmental information exchange agreement, requested by the Austrian side; list of more than 100 detailed questions sent by Austria only a week in advance;
- September 2000: official visit of a group of Czech members of parliament (MPs) in Vienna; arrangements made for visit of Austrian MPs to Temelín power plant;
- 23 September 2000: meeting of environment ministers Miloš Kužvart and Wilhelm Molterer (Minister of Labor and Commerce) in Mikulov, Czech Republic; environmental impact assessment for Temelín and some of the Austrian safety concerns discussed;
- 27 September 2000: talks between Pavel Telička and Secretary General of Austrian Foreign Ministry, Albert Rohan, in Vienna;
- 4 October 2000: visit of the group of Austrian MPs to Temelín power plant (less than a week before Unit 1 startup), detailed discussion and a visit to the plant, including inspection of the reactor containment;
- 16 October 2000: visit of the Chairman of the Czech Parliament, Václav Klaus, to Vienna and discussions with Heinz Fischer, the Chairman of the Austrian Parliament, and Austrian Chancellor, Wolfang Schüssel;
- 24 October 2000: discussions between Jan Kavan, Wolfgang Schüssel, and Heinz Fischer on the occasion of signature of the governmental accord concerning compensation of Czech citizens forced to work on Austrian territory during World War II.

During the numerous meetings and talks in fall 2000—a complete list is impossible to compile as there were many meetings on various other occasions and at various levels—there were sincere attempts on both sides to bring the situation to a normal dialog between two neighboring countries, but without any visible result. It was thus necessary to ask the EU to intervene and to organize high-level meetings in Melk, Austria, and Brussels.

Austria's strategy for opposing Temelín was to involve other European states and international NGOs and to provide information to various audiences. This strategy also involved launching a campaign against nuclear power in Eastern and Western Europe—making the issue bigger than just Temelín—a position of the Social Democrats. Austrian politicians agreed, stating that "Europeanizing" Temelín was the only way to achieve EU standards for nuclear power stations. In September 2000 the Austrian parliament approved a resolution asking their government to block Czech entry into the EU because of Temelín. There was a demand that Temelín comply with safety standards valid in EU states. However, there is no EU competency for nuclear power plant regulation in existence, probably because a number of

the nuclear states, including France and the United Kingdom, are cautious of opening a Pandora's box of regulatory debates. In fact, EU member states (and publics) remain quite divided on nuclear power issues. Seven of the 15 old member states have nuclear power plants, and eight of the 12 new members and candidate states are nuclear. On the other hand, countries such as Austria have totally banned nuclear power, while Germany and Sweden are officially engaged in phasing out their nuclear power facilities. As a result, there is a lack of agreement among the member states about both the future of nuclear power in the EU and safety standards. Austria wanted criteria to be developed and applied to all EU nuclear power plants (Axelrod, 2004).

In October 2000, when Temelín became critical, Austria moved to widen the controversy to Brussels. Austrian officials argued that states should have a role in protecting their citizens from an environmental disaster originating in another state. It was a position the EU could take seriously. To date, Austria had had no legitimate political say in the launching of Temelín nor had it received any assurances that it would be safe. Although there is another Czech nuclear power plant at Dukovany, it was easier to oppose Temelín than to advocate the closing of an existing nuclear plant. In fall 2000 anti-Temelín forces set up blockades on the borders between Austria and the Czech Republic to increase public attention to the issue. The Czech reaction was that the blockades impinged on trade and free movement of persons: the protests themselves were not the problem. The FPOe lobbied hard to get the government to withhold approval of the Czech energy chapter which formed part of the Czech–EU negotiations for the Czech Republic's accession to the EU. The SPOe disagreed, arguing that neighbors should not be held hostage over nuclear power safety issues and suggested that Austria find allies in the EU interested in seeking unified safety standards for the entire EU. Austria soon changed its strategy from demanding the closure of Temelín to blocking the closing of the Czech energy chapter in the accession negotiations: the FPOe position. This move could have jeopardized the entire accession process, as a veto of any of the 31 chapters by even a single EU member state would prevent accession to the EU. When Czech officials decided to go ahead with the completion of Temelín, they never thought the issue would rise to the level of potentially blocking Czech accession to the EU. Yet the veto of one state could do so, which is what Austrian officials were threatening.

In the Czech Republic media and the public closely followed the escalation of the dispute in the cross-border communication with Austria and in the various steps being taken toward the commissioning of Temelín Unit 1. Public opinion in the Czech Republic increased to (an unrealistic) 80 percent in favor of putting both Temelín units into operation. This situation eliminated any room for domestic anti-nuclear activists and political representatives opposing the project. Some of the cross-border comments sent by the highest political representatives of the Czech Republic had a "nasty" flavor.

What was the result? First of all there was a total communication breakdown between the two neighboring states, both on the political and expert level. Both sides had an all-or-nothing strategy. The media coverage was extensive, but was largely sensationalist and, of course, to a large extent supporting different political interests.

There was practically no room for any serious technical discussion. Temelín became the first NPP to be "broadcast live," with all the negative consequences.

The technical discussions followed more or less the arguments that were already well known from the Mochovce discussion, but on a larger scale with additional documents, facility visits, international expertise etc., being requested. The Czech counterparts represented by the Regulatory Body, the Research Centre at Rez near Prague, and representatives from the NPP continued to supply the requested material hoping that ultimately the FAF would be satisfied. But, on the contrary, the information supplied by the Czech Republic was used only to put forward additional arguments that the NPP was unsafe, which was happily diffused by Austrian media claiming that Temelín was a "scrap reactor" before it had even had started up.

In spite of the overall anti-nuclear atmosphere on the political and media front in Austria, there were still a few nuclear scientists mainly from the Zwentendorf period and from the Vienna University of Technology who tried to convince the political parties to move away from mass hysteria and anti-nuclear phobia to basic technical issues. However, letters to politicians and newspapers, TV recordings of positive statements, and technical manuscripts quietly disappeared. Not only were they never made available to a wider audience, but several anti-nuclear groups demanded that these outdated nuclear scientists should take early retirement. Their counterparts in the Czech Republic were positively impressed that there was at least one group of serious people in Austria who were not under the control of anti-nuclear activists.

These pro-nuclear efforts did not help to resolve the bilateral problems and therefore the situation between the two countries was frozen: Austria requested an immediate halt to all work at the NPP; the Czech Republic insisted that the Temelín NPP should fulfill all safety requirements needed for IAEA verification so that operation could begin. NGOs engaged in anti-Temelín activity in Austria and Germany, while political parties and regional governments became increasingly vocal.

A new political initiative was now begun by the Commissioner for EU Enlargement, Günter Verheugen, who tried to bring the parties together to find a way out.

Because of the impact of highway blockades between Austria and the Czech Republic and the emergence of the issue of nuclear safety as part of the EU accession negotiations, the EU became an important player. Mediating between two states with unequal status—one a member state and the other a candidate state—was a new role for the EU. Questions surfaced as to whether it was, in fact, an appropriate role for the EU or whether the matter should have been left to bilateral resolution between Austria and the Czech Republic. In reality, however, bilateral negotiations were not proving successful even though the foreign ministers of the two countries seemed to share the same perspective. At the request of the Czech foreign minister, Jan Kavan, the EU Commission offered to act as mediator at the end of 2000, when the Austrian blockades were causing heightened diplomatic tensions. It was becoming increasingly difficult for the Austrian government to control the emotional demonstrations. Both Austria and the Czech Republic agreed to the mediation. Diplomatic contacts between the governments increased and it was agreed that the two heads of state would meet in December 2000. On 12 December 2000 an agreement (The Melk Protocol) was signed between the Republic of Austria and the Czech Republic

after many hours of painstaking negotiation at Melk, Austria, covering the following subjects:

- The Czech Republic agreed to an extension of the Environmental Impact Assessment (EIA) according to Western standards;
- The Czech Republic agreed to a direct and early warning system of any incident at the NPP Temelín;
- The Czech Republic agreed that Austria should set up a monitoring station near the NPP;
- Closer cooperation between the two countries on energy research, efficiency improvements, and renewable energy systems was agreed;
- Both countries agreed to the free transfer of people and goods between the two countries;
- Both countries agreed to support the enlargement of the EU.

However, NGOs opposing Temelín were shocked when EU Enlargement Commissioner Günter Verheugen suggested that Temelín would "probably be the safest nuclear plant in Europe." The enlargement negotiations provided an opportunity to focus on nuclear power safety. The Melk process was undertaken specifically to examine nuclear safety issues and facilitate an exchange of information about Temelín. EU Commission President Romano Prodi rejected Austrian threats to hold up Czech accession, stating: "Veto should only be used if the vital interests of a country are at stake." He acknowledged the critical role of the Commission in mediating the conflict and was concerned that the controversy could become quite serious. German Foreign Minister Joschka Fischer agreed, arguing against any "artificial" delays in the enlargement process because of Temelín.

Together with the European Commission, safety-relevant issues were discussed, an overall EIA for the NPP open to all citizens of Austria, Germany, and the Czech Republic agreed upon, and a decision that a special EU working group should investigate the safety of all NPPs in candidate countries taken.

The full text of the Melk Protocol can be found online.[11]

(In reality, the EU became officially involved earlier than this, in July 2000, when the Enlargement Group of the Committee of Permanent Representatives of the Council (COREPER) charged the Atomic Questions Group (AQG)—a permanent Council body—with preparing a position concerning "a high level of nuclear safety in the candidate countries." In the past, many European Councils had encouraged high levels of nuclear safety. However, no specific guidelines related to nuclear safety, except for permissible levels of ionizing radiation, transportation of nuclear fuel, and emergency preparedness had been derived by the EU as an *acquis communautaire* from the Euratom Treaty and IAEA agreements. While it was agreed that the EU would monitor Temelín until the accession of the Czech Republic, the position of the EU was that the responsibility for safe operations of a nuclear plant belonged to the country where the facility was located. The result of these efforts

[11] http://www.umweltbundesamt.at/umweltschutz/kernenergie/akw/Temelin/etemelk/]

was a "non-paper" by AQG to COREPER in July 2001 describing non-binding or "soft" laws based on voluntary cooperation among EU nuclear states. Because of the historical differences in their nuclear regulatory procedures and installations, these states strongly supported only general rules of safety. The report also reviewed all nuclear candidate states. Enlargement negotiations provided an opportunity to focus on nuclear power safety.)

The Years 2001 to 2005

The Melk Agreement started some movement toward a future settlement of the dispute, but emotions ran high on both sides during the whole implementation process, as each side kept to its original strategy (full closure versus full operation).

While there were hearings and meetings in both countries, the Melk process did not proceed smoothly. Czech Environmental Minister Milos Kuzvart doubted that the new EIA could be completed by May 2001, as agreed at Melk. Rudi Anschober, Upper Austria Green Party leader, wanted the Temelín plant to close while the review took place. The Commission on the Assessment of Environmental Impact of the Temelín NPP released its report on 31 July 2001, based on its assessment of nuclear safety at Temelín as part of the Melk process, and utilizing the Directive on Environment Assessment of Public and Private Projects No. 85/337/EEC and No. 97/11/EC. The members of the Commission included four Czechs, two representatives from the EU, and observers from Austria and Germany. The Melk Protocol established this expert body to assist in identifying safety issues. Normally an EIA is done before a project is started. Although the EIA was guided by existing EU legislation, this was a special case because it was retroactive. The actual document was prepared by the Czech Environmental Ministry. The Commission concluded that the environmental impacts were considered to be insignificant and acceptable. Between February 2001 and July 2001, in a parallel process, there were ongoing discussions between the EU, Czech nuclear experts, and Austria.

Some of the many technical meetings under Chapter IV of the Melk Agreement (Nuclear Safety) are listed below:

- 2 February 2001 in Vienna, full-day meeting, experts from Czech Republic, Austria, and European Commission; the detailed list of Austrian safety concerns (based on the questions already raised and answered to various levels of detail during the bilateral meeting in September 2000) was reduced to 29 topics;
- 15–16 March 2001, the above-mentioned topics were explained by the Czech experts during the workshop in Prague; most of the topics were left for further bilateral clarification (were not of much relevance for EC experts);
- 14–15 May 2001, Brussels, expert meeting, drafting of the report;
- 30 May 2001, Brussels, short final meeting to clarify some points of report; Austrian representatives clearly disappointed with EC facilitation;
- 30 July 2001, Commissioner Verheugen sent the report to Prime Minister Zeman and Chancellor Schüssel.

Twenty-nine issues of Austrian technical concerns were identified and addressed by the Czech Republic; however, trilateral nuclear safety expert discussions showed a large degree of disagreement and failed to reach a consensus report. The main problems in these trilateral "safety discussions" were:

- No chance of using "standard procedures" for safety justification/review in this type of exercise;
- An unrealistically wide agenda: 29 safety issues of differing nature were filed by the Austrian side for the discussion; no procedure was identified to eliminate these demands in a "fair" way;
- One problem was to agree on safety criteria (standards);
- No procedure was available for arbitration if the experts had different opinions on particular technical solutions.

Austrian political representation and environmental groups said that the Czechs had not provided sufficient documentation. As a result, one hearing in May 2001 was postponed. There were unpleasant words between the Czech Minister of Industry and Trade (MIT) Miroslav Gregr, who said Austrian demands were "nonsense," and Upper Austria Governor Josef Puehringer, who called Gregr "ignorant." Jan Kavan, the Czech Foreign Minister, told critics, "We would shut down Temelín only if it were objectively proved that it does not comply with fundamental safety criteria."

Also during this period in the Federal State of Upper Austria and especially in the area near the Czech border closest to Temelín, the population on several occasions, occupied the main border station between Austria and the Czech Republic and also organized anti-nuclear information campaigns across the border in the Czech Republic. Czech technical specialists were invited to the city of Linz for a public hearing (1 December 2000) which was attended by anti-Temelín activists and had to be suspended because of hysterical outbursts, shouting, and hurling of insults. A similar meeting took place at the Vienna Hofburg on 26 June 2001 with disorderly interruptions and police intervention. The State of Upper Austria also hired a former Czech citizen to organize the state's anti-nuclear activities. These activities even continue on a smaller scale today and all the transit roads are full of anti-Temelín posters, a very unfriendly welcome to tourists from the Czech Republic.

At the same time, Temelín again suffered turbine problems that worried the Austrians, who again called for a "zero variant": consideration of the option of closing Temelín. The German Environment Minister Juergen Trittin, also a longtime opponent of Temelín, asked for the plant to be closed. More demonstrations were threatened by the Upper Austrian Greens. Austrian Finance Minister Karl-Heinz Grasser said the Czech Republic should abandon Temelín, while Austrian and German Greens called upon EU countries to boycott electricity from the plant. The Upper Austrian Commissioner for Nuclear Facilities Bordering Austria, Radko Pavlovec, said the Czech–Austrian Commission's report was inadequate. The FPOe reaction was that the document was a provocation. Chancellor Schüssel asked the Czechs for more information. Lower Austria said the documentation about crisis scenarios was inadequate and that Temelín constituted a real threat to countries neighboring

the Czech Republic. The Czech Foreign Ministry responded by asking if the Austrians were questioning the sovereign right of the Czechs to determine their own energy policy. The Czechs did agree to respond to the "zero option" and provided additional information. This, however, did not satisfy the governors of Upper Austria, Lower Austria, and Salzburg, who announced that they would file a lawsuit for potential damages. German Environment Minister Trittin pulled out of the meetings on Temelín to disassociate himself from any conclusions of the Commission report. Environmental NGOs argued that the EIA failed to consider the effects of an airplane crashing on Temelín or how stored radioactive waste should be disposed of.

Austria submitted a report to COREPER criticizing the shortcomings of nuclear plants in candidate countries, including the Czech Republic and Slovakia, and making nuclear safety an issue for consideration of the EU accession. However, Enlargement Commissioner Guenther Verheugen, who brokered the Melk Agreement, warned that Austria could not prevent the construction of a nuclear power plant in a neighboring country. The Czech Foreign Minister Jan Kavan indicated that he understood the concerns of the Austrians and Germans because of their closeness to Temelín, stating, "We perceive the fears of our neighbors' citizens as understandable, but because we do not feel them justified, we will do everything to dispel them and assure the people that the plant is safe." Austrian Greens interpreted the remarks as sympathetic to their cause—that building a nuclear plant close to borders is unacceptable. Some Austrian Temelín opponents suggested giving the Czech Republic money to close the plant or to purchase the plant.

There also was a suggestion of an international conference to discuss the possibilities of closing the plant. Chancellor Schüssel asked EU President Romano Prodi to make Temelín a European issue as a means of leading the way to EU standards for nuclear power plants. Upper Austria's Governor agreed, stating that this was not a bilateral problem with the Czech Republic. Austrian Greens maintained that Temelín was a European problem and should be resolved at European level. A serious accident would affect not only Austria, but all of Europe. Commissioner Verheugen said there would not be an international conference unless the Czechs supported it, which they did not. The opponents argued that keeping the Czechs outside the EU reduced the chances of making the plant safer, as Temelín would probably go online anyway. Schüssel concluded by playing his trump card, stating that the energy chapter would not be closed until "all safety and environment aspects of the Temelín nuclear power plant are assessed."

The European Parliament, a strong supporter of environmental issues, passed a draft resolution in July 2001, recommending the phasing out of Temelín and the hosting of an international conference on the issue. It tried to convince the European Commission that Temelín was a failed investment. At the September 2001 plenary session of the Parliament, it was suggested that the EU finance the closure and dismantling costs of Temelín. The plenary session also advocated increased use of sustainable energy sources. This position was supported by all Austrian parties. The non-binding resolution was passed on 5 October 2001, recommending that as problems were continuing to come to light in the nuclear and non-nuclear section

of the plant, the "zero option" should be considered. Resolution supporters hoped that the Commission would consider the Parliament's position seriously. This was the first time an EU institution had tied Temelín to accession.

During 2001 many meetings of the political and technical representatives of both countries took place to solve open questions. For example, Verheugen stated in October 2001 that the 29 safety issues mentioned above would not have any effect on the accession of the Czech Republic; Austria tried desperately to unify the non-NPP EU countries and bring the EU to a stronger anti-nuclear policy. In response the EU stated on 20 October 2001 that Austria was poisoning the climate in the EU with its ongoing anti-nuclear policy. Interestingly enough, during that period it was calculated that Austria was quietly consuming electricity from nuclear sources; in some areas up to 37 percent of its electricity was nuclear.[12]

Austria was in the awkward position of criticizing the EU for lacking uniform nuclear energy standards, while demanding that Temelín comply with safety standards valid in EU countries. There are no EU standards as to which national standards should apply. British, French, and German standards are not the same. Czech officials argued that the EU could not apply pressure to candidate states regarding nuclear power because it lacked the competency to do so with existing members. However, the EU position was that it could force an EIA on non-members, even though it was not called for in EU legislation.

Further, it was well known among insiders that several Austrian companies were under contract to Temelín and supplied safety- and security-related equipment: this was, however, never publicly admitted by Austrian politicians.

In November, the 29 open questions concerning the nuclear safety of Temelín were reduced to seven. Chancellor Schüssel tried to remove the Temelín question from Austrian internal politics toward the end of 2001; the Czech Republic Foreign Minister stated that the Melk process must not be part of accession negotiations and Prodi warned against inflating a bilateral conflict into a multilateral conflict.[13] A few moderate journalists declared in public that a technical issue had already been inflated to an emotional issue during the Vranitzky government with his policy of an "atom-free central Europe" and called on Schüssel to change his position.[14] In the same direction, the newspaper *Der Kurier*[15] declared that Austria seemed to be pursuing an anti-nuclear missionary campaign and its tunnel vision was only focused on Temelín, although there were many other major issues to be resolved. There was obviously a slight change of opinion on the part of some of the serious journalists. The Temelín issue was reduced to a legal issue: how to produce a binding bilateral contract under the terms of the Melk Protocol on the remaining open safety issues. Hectic high-level negotiations took place between the parties involved. Finally on

[12] *Der Kurier*, 15 October 2001

[13] *Der Kurier*, 10 November 2001

[14] *Die Presse*, 24 November 2001

[15] *Der Kurier*, 26 November 2001

29 November 2001 a trilateral agreement was signed in Brussels (Brussels Protocol) between Austria, the Czech Republic, and the EU represented by Verheugen.[16]

The conclusion of the Melk and Brussels processes on 29 November 2001, defined a follow-up process. Each state recognized the sovereign right to its own energy policy, but there would be joint monitoring and cooperation to increase energy efficiency. In late November 2001, Chancellor Schüssel changed his position regarding closing the Czech energy chapter.

The Austrian Foreign Minister Benita Ferrero-Waldner implied that the energy chapter could be reopened, but she did not receive support from other foreign ministers. The Austrian Parliament passed a resolution giving it the right to reopen it in the future. This, however, would be highly unusual and would require the support of the Commission, which supported the Czech position. However, the Austrian Vice-Chancellor, Susanne Riess-Passer (FPOe), still maintained that Austria should be able to take a stronger stance without fear of being isolated in the EU.

The Brussels Protocol created an uproar among the three parties not involved in the negotiations, the FPOe, SPOe, and Greens, especially as the FPOe was in the midst of preparing an anti-Temelín referendum in January 2002.

Why did Austria finally abandon a veto of the Czech accession?

- First, Austria lacked support in the EU Council;
- Second, Chancellor Schüssel risked jeopardizing the strength of his coalition in a long, difficult, and unpleasant fight. Having just recently been isolated by EU bodies and member states following the inclusion of Haider's right-wing FPOe in the government, Austrian officials were loathe to risk being the "outsider" again and to be subject to reprisals in the European Council;
- EU Commission President Prodi rejected demands for safety guarantees at the EU level;
- There was no legal basis for preventing Temelín;
- Finally, the proposed conference on nuclear power at the EU level was rejected by the Commission, which deferred to the Czech Republic.

Looking back at 2001: during this one-year period Austria's internal politics were almost completely blocked by the Temelín issue. The discussion regarding how to handle this problem increased to a political crisis which almost broke up the Austrian coalition government. Four parties were involved: the OeVP, the SPOe, the FPOe, and the Green Party. The OeVP and FPOe formed the coalition government, while SPOe and the Green Party were in opposition. The Chancellor (OeVP) tried to keep the EU-accession question out of the Temelín case, while the coalition partner wanted to veto the Czech Republic accession if Temelín started up; the FPOe party leader organized a public referendum to support his politics which was held in January 2002 with fewer than the expected votes. SPOe and Greens did not support the accession veto but wanted to delay the EU accession of the Czech Republic

[16] http://www.umweltbundesamt.at/fileadmin/site/umweltthemen/kernenergie/Temelin/Roadmap/Br_ssel/bruessel_eng.pdf

until all Austrian requirements had been settled. There were even proposals for financial compensation from Austria to the Czech Republic if Temelín were not put into operation.

Present Situation

In April 2002, the Provincial Government of Upper Austria brought a lawsuit against the operators of Temelín, the CEZ Group, in an Austrian court. The court rejected the claim saying it did not have the right to rule because the Czech Republic was sovereign: possessing the right to make decisions concerning its own territory; the Upper Austrian Government has appealed however.

These factors posit the need for an examination of "sovereignty" and the relationship between the EU and member and candidate states. The Temelín case also casts doubt on the effectiveness of the veto, if a vetoing state risks isolation and accompanying retribution.

At the December 2002 Copenhagen Summit, at which the countries of Eastern Europe were invited to join the EU, Austrian officials wanted to embed a protocol into the accession treaty with the Czech Republic making the Melk Protocol subject to international law and subject to enforcement by the European Court of Justice. With no EU nuclear energy policy in place, and given the influence of the nuclear states, the attempt failed. Nuclear member states may have feared that such a move might put other nuclear power plants under European Court jurisdiction with possible lawsuits being initiated by anti-nuclear groups. However, Austrian right- and left-wing parties argued that, without enforcement mechanisms, the Melk Agreement was meaningless.

Chancellor Wolfgang Schüssel and Prime Minister Vladimir Spidla did agree on a declaration to be attached to the Czech Accession Treaty pledging the fulfillment of the Melk Agreement. It remains a bilateral agreement and not subject to international law. However, all the long-term measures will have a "legal basis" in the revised bilateral agreement for exchange of information in the nuclear area. The Czech regulator as well as the operator clearly declared their willingness to keep the Austrian partners updated on any development related to safety of nuclear installations on Czech territory, including all safety topics selected for discussion during the implementation of the Brussels conclusions.

Final Remarks

As they tried to settle the Temelín case, both sides learned that in a certain political environment to agree to a nuclear project may be considered as "suicide" and that representatives coming from such an environment have a quite limited potential for

any compromise. It is difficult for technical experts to be engaged in a debate where partners have such limitations. How does one distinguish between a technical and a political debate? For media, there is no strict division; the general public is not willing to study carefully individual modalities; interest groups—intentionally or not—strike a balance between these two positions.

The Melk process again proved the exclusive position of a national regulator: beside the applicant/license holder, this is practically the only institution with in-depth knowledge of the safety status of a given case. Any third-party reviews (even the IAEA missions) can cover only particular issues, but not the whole case; however, the reviews are quite valuable in the overall context. In the present case there was no partner regulator in Austria and it proved quite difficult for particular groups such as the FAF to be a substitute for the regulator.

The regulator has to repeat explanations of basic principles; discuss how the safety is managed with the general public, politicians, the media, and interest groups. In any emotional situation such as the Temelín case, almost none of the standard rules for communication could be applied. One of the problem is that "fairy tales" are still told about safe "Western" and unsafe "Eastern" nuclear power plants or about a "European Safety Standard" which is purportedly far higher than in other countries—politicians and the media just love such simplifications!

The past decades placed a heavy strain on Austrian–Czech relations and on several occasions political arguments were used that had nothing to do with the nuclear issue but originated as far back as World War II. The EU sanctions against Austria in 2001 and the EU accession of the Czech Republic complicated the issue even more.

Only a few media presented the process as a serious attempt to settle a cross-border dispute: others were just looking for sensational news stories. Many politicians and interest groups were trying to profit from the situation; the public was supplied with inconsistent information of dubious quality throughout the process; "serious" players in the game had real difficulties in terms of conveying their message in such a heated environment.

What are finally the benefits of the process for both countries? A good basis was established for further de-escalation of the nuclear issue. The discussions were reflected right down to the expert level. That leaves only one main task for politicians—monitoring. Finally, there is clearly a positive message to the general public: Both parties involved can talk without emotion on technical issues to resolve matters of concern.

Looking back to almost 20 years of bilateral conflicts on nuclear issues which were temporarily raised to the status of "European issue," it is obvious that political solutions can only be found if the involved politicians on both sides do not use the issue to advance their national political ambitions. Complicated technical matters cannot be discussed in the media or with the general public in their full extent and complexity; detailed technical discussions have to be carried out at the expert level. Finally, it is very important for politicians and experts on both sides to agree on a positive attitude and to keep emotions out of the negotiations.

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Spent Fuel Import, Storage, and Reprocessing in the Russian Federation: An Evaluation of Actors and Risks

Keith Compton

Introduction

Management of spent nuclear fuel is inextricably associated with risk. The potential hazards associated with management of spent nuclear fuel include such concerns as environmental and health risks to current and future generations from the toxic nature of the spent fuel; risks of proliferation of nuclear weapons; risks of diversion of nuclear materials to terrorist organizations; and political risks associated with the very high level of public sensitivity to all things nuclear. All of these risks, and more, are central to the management of spent nuclear fuel. Management of these risks within national spent fuel programs requires extensive interactions and negotiations, both formal and informal, among a wide array of actors. When spent fuel management programs begin to involve shipments across national boundaries, the resulting negotiations are quintessentially about the management of these risks.

All of the negotiations that touch on international spent nuclear fuel management are embedded within an emerging regime for international spent nuclear fuel management. This regime includes governmental, non-governmental, and commercial actors, and involves both formal and informal negotiations and a mixture of bilateral and multilateral agreements and conventions. Although this regime appears at present to be largely nested within the context of nuclear non-proliferation, it also contains strong linkages to the international regime for hazardous waste management. This regime could be tested by plans that are under way in the Russian Federation to import up to 20,000 tonnes of spent nuclear fuel from foreign utilities for long-term storage. Although the proposal has precedents, the progress made to date does not. Unlike many past proposals for international fuel storage, very concrete steps, in the form of controversial amendments to major legislation, have been successfully completed, moving the project beyond a simply hypothetical discussion.

Keith Compton
United States Nuclear Commission, Washington, D.C., USA, e-mail: Keith.Compton@nrc.gov

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Among the more significant negotiations that will need to take place if this plan is to ultimately succeed is the bilateral negotiation surrounding the establishment of a "Peaceful Nuclear Cooperation Agreement" (PNCA) between the United States and Russia pursuant to Section 123 of the U.S. Atomic Energy Act. Such agreements typically give the U.S. government control, *inter alia*, over the movement of spent fuel that was either supplied by a U.S. vendor or that was irradiated in a reactor supplied by a U.S. vendor. Because the majority of spent fuel worldwide is subject to U.S. export controls under such agreements, such an agreement between the United States and the Russian Federation is necessary for the eventual success of the Russian proposal. Although these negotiations had not taken place at the time of writing,[1] some elements of the pre-negotiation phase are clear. A review of past history may prove instructive, as similar issues have already been encountered.

The remainder of this chapter is a brief summary of past efforts at internationalization of spent fuel storage, focusing largely on the issues that were raised at the time and the reasons for their failure. The analysis begins with a discussion of the actors and context of the negotiation, to the extent to which this can now be determined. Finally, a discussion of potential pitfalls and flashpoints will be based on a comparison of the current situation to the past experience of such efforts.

History of International Spent Fuel Storage Proposals

There have been limited cases where permanent transboundary movement of spent fuel has successfully occurred. Because of concerns about the proliferation hazard posed by highly enriched fuel used in research reactors (>20% 235U, which is suitable for construction of a nuclear device), the United States initiated the Reduced Enrichment for Research and Test Reactors (RERTR) in 1978 (O'Neill, 1999). The program was designed to replace the highly enriched fuel in small research reactors with low-enrichment fuel. The highly enriched uranium was brought to the United States. Another example discussed in O'Neill (1999) was the urgent shipment of a small amount of spent fuel from the Republic of Georgia to the United Kingdom. In the case of spent fuel from power generation, the situation is far less amenable. As pointed out in O'Neill (1999), the examples of successful permanent international shipment of spent fuel were focused purely on non-proliferation grounds, which may have been a reason for their success. They also involved considerably smaller amounts of spent fuel than would be the case for spent power reactor fuel. The fact that both efforts mentioned earlier were not seen as solving a waste problem for a nuclear power station may also be a significant cause of their success. This was explicitly stated by Paul Leventhal (2000), president of the Nuclear Control

[1] Since the time of writing, this agreement has been negotiated. It was signed on 6 May 2008 (Department of State, 2008). In September 2008, the agreement was withdrawn by the Bush administration over a Russian military intervention in the Republic of Georgia. As of September 2008 the U.S. Congress had not approved the agreement.

Institute: "If removing the spent-fuel albatross from the nuclear power industry is the only outcome, these plans should be strongly resisted."

International cooperation in spent fuel management, as pointed out in O'Neill (1998), is not new. The two most common forms of international cooperation are take-back agreements and foreign reprocessing contracts (Albright et al., 1997; Berkhout, 2002). Interim international storage of spent nuclear fuel that is neither destined for reprocessing nor supplied by the storing country is far less common. Although many proposals have been mooted over the past three decades, none have come to fruition. A general overview of such plans is provided by O'Neill (1998, 1999), and a number of recent efforts are summarized in Bunn et al. (2001). Examination of the reasons why past proposals foundered may prove instructive. Apart from an early regional initiative within Europe, there have basically been three groups of efforts. One cluster of efforts centered on storage on a remote Pacific Island. Another, the Pangea concept, focused on commercial storage in an arid continental landmass. A third set of proposals involved plans for storage in China.[2] It is the last set of proposals that will receive the most attention in this chapter, as it provides considerable suggestions about the possible course of events in the case of a future agreement between the United States and Russia.

A very early example of international spent fuel management is provided by the Eurochemic plant, a pilot reprocessing plant that began operation in 1966 in Mol, Belgium (O'Neill, 1998; Berkhout, 2002). The Eurochemic facility was a joint venture between 13 European member countries. The plant was shut down in 1975 after both France and Germany pulled out. However, during its existence, it accepted legal ownership of the spent fuel transported to the plant. The storage contracts did not require reprocessing (Berkhout, 2002). To date, this remains the only example of permanent international shipment of spent nuclear fuel for disposal in a country (Belgium) that provided neither the reactor nor the fuel.

Interest in storage on a Pacific island followed two peaks. Interest in a centralized Pacific island repository emerged in 1979 as a result of the U.S. abandonment of reprocessing because of non-proliferation concerns. The USA proposed a joint study into a storage facility for fuel from Korea, the Philippines, Taiwan, and other Asian nations on the Palmyra Atoll. Japan reluctantly agreed to participate in funding a feasibility study, although it noted that such a facility would be contrary to its policy of pursuing reprocessing as part of an energy independence strategy (Chapman, 1979; *Jiji*, 1980). However, the Reagan administration did not support the idea and pulled out of the project in 1981 (Kumao, 1998). A second wave of interest in a Pacific solution that emerged in the 1990s was more commercially oriented. In 1994 the government of the Marshall Islands proposed the creation of an international waste repository on the territory of the Bikini Atoll, the site of several U.S. Pacific nuclear tests (Bunn et al., 2001; Berkhout, 2002). The President of the Republic of the Marshall Islands, Amata Kabua, had been long supportive (since at least 1984) of the idea of establishing an international waste repository on the islands as a way of funding remediation of the Bikini Atoll. The idea was picked up by a commercial

[2] The author would like to thank Dr. Shaheed Hossain for drawing attention to the case of proposed European spent fuel exports to China.

organization in December 1994 when a group known as Pan Pacific, a U.S.–based commercial entity led by a British entrepreneur and several retired U.S. admirals, approached the government of the Marshall Islands to inquire about the possibility of storing spent nuclear fuel there (Friend, 1997). Pan Pacific appears to have been the first incarnation of a series of plans that evolved between 1994 and 2001 from storage on the Marshall Islands (Pan Pacific) to storage on Palmyra or Wake Island (U.S. Fuel and Security, International Disarmament Services) to storage in Russia (the Non-Proliferation Trust). Although both the name of the company and the proposed plans were modified frequently during the period from 1994 to 1999, it appears that roughly the same group of individuals was involved, as were the stated rationales for such proposals. Non-proliferation was always a major stated justification for such plans. The Pan Pacific proposals were eventually defeated by the Bikinian elders (Friend, 1997) against a backdrop of opposition from the U.S. government. With the death of President Kabua, who was the foremost Marshallese proponent of such plans, interest in storing spent fuel on the Marshall Islands waned (Bunn et al., 2001). The next development was the apparent modification of Pan Pacific into a new company known as U.S. Fuel and Security. U.S. Fuel and Security suggested that either Wake Island or Palmyra Atoll serve as a storage location for spent fuels from countries without adequate long-term facilities. The plans developed by U.S. Fuel and Security were modified in the spring of 1997 to permit collaboration with the Russian Federal Ministry of Atomic Energy (MINATOM) to include a complete nuclear fuel cycle service under the name of "US–MINATOM International Nuclear Disarmament Services," with MINATOM providing fresh fuel which would then be removed for storage to Wake Island (*Agence France Presse*, 1997; *Official Kremlin International News Broadcast*, 1997; Romanenkova, 1997). Presumably, MINATOM interest in such a plan was due to Russian legal restrictions on implementing any new take-back agreements similar to those pursued by the former Soviet Union. The plans appear to have foundered because of the lack of a suitable site. The two proposed sites were U.S. territory (Wake Island and Palmyra Atoll), and the U.S. government registered strong opposition to any such plans (Bunn et al., 2001). As will be discussed later, the plans shifted to a concept involving storage on Russian territory known as the Non-Proliferation Trust.

Another commercial concept that emerged during the mid-to-late 1990s was based on the idea of storing spent fuel in the Australian desert. The concept was proposed by a U.S.–European consortium known as Pangea. The plans for Pangea came into public awareness in December 1998 (Timms, 1998) and almost immediately ran into stiff opposition from the Australian federal government, the regional government, and environmental groups. The project was plagued by heavy negative publicity, including a public outcry over allegations that government officials had inadvertently misled the public about meetings with Pangea (Coorey, 1999a,b) and the discovery of hitherto unknown water reserves in the one of the areas being studied for waste disposal (Mason, 2000). The government of Western Australia passed pre-emptive legislation to hinder the company's plans, and the federal government expressed irritation that the activities of Pangea were interfering with the

government's own plans to find a suitable disposal site for domestically generated low-level waste. The concept was eventually withdrawn in early 2002.

Prior to that, one concept that appears to have come closest to completion (in terms of acquiescence of the governments both of the originating and host countries) was a Chinese proposal to take Western European fuel for storage and/or reprocessing in the Gobi Desert in the mid-1980s. Two variants of this were discussed. In the first, storage capacity would be offered to European utilities as a way to resolve their spent fuel management problem. The West German government was not enthusiastic about this proposal, seeing it as a threat to its plans to create a domestic reprocessing capacity. The suggestions were broached by a high-level Chinese delegation in Frankfurt in January 1984 (Fishlock, 1984; Lewis, 1984). Less than a month later, a consortium of three West German companies (Nukem and its subsidiary Transnuklear, together with Alfred Hempel) had signed a letter of intent to act as agents for the Chinese government. The plan envisioned the storage of 3,000–5,000 tonnes of spent nuclear fuel at a price of around US$1,500 per kg at an undisclosed location, most likely in the Gobi Desert. The West German government was reportedly angered by the initial proposals made by the Nukem/Transnuklear/Hempel consortium because of plans for a domestic fuel reprocessing capacity (Cooke, 1984). At the time, the German government was planning for a national closed nuclear fuel cycle like those of France and Britain. The option of permanent storage of spent fuel could have undercut the German reprocessing plans, similar to the concerns raised by Japan in response to the Palmyra Island study. Although governmental support was not forthcoming in West Germany, representatives from industries in a variety of countries without plans for reprocessing were interested. For example, Walter Fremuth, the chairman of Austria's electricity board, signed a letter of intent with the Chinese government to take fuel from the mothballed Zwentendorf Power Plant near Vienna. Utilities in Italy, Spain, and Switzerland also expressed interest in the plan. Although none of these governments eventually supported the idea, the reasons for not supporting the plans were varied. In Austria, for example, the opposition appears to have been more connected with domestic politics than with principled opposition to nuclear power.

However, another proposal one year later involving a considerably smaller amount of fuel was raised (Davies, 1985a; Fishlock, 1985a,b; Roby, 1985; Scott, 1986). The deal would have been part of a package in which the West German company Kraftwerk Union (KWU) was to sell several reactors to China. The Chinese proposed to defray part of the cost of the reactors by providing permanent storage services for up to 1,000 tonnes of spent fuel. While the government in Bonn was also initially cool to the second plan, the opposition was considerably less. Although government interest was lukewarm because of Germany's commitment to domestic reprocessing and because of concerns regarding non-proliferation, the more limited amounts of spent fuel involved (150 tonnes as an initial test shipment versus 4,000–5,000 tonnes) and the fact that the deal was tied to a potentially lucrative proposition for German business tempered the government's opposition (Carr, 1985). Support for the project among the principals (European firms, the West German government, and the Chinese government) was lukewarm because of compromises regarding the

amount of waste and the cost of storage. Although the Chinese wanted to charge the going rate for reprocessing, the Germans were unwilling to pay that rate, and furthermore were not willing to ship the amount of waste necessary to make the project sufficiently profitable for the Chinese. The Chinese wanted at least 1,000 tonnes of waste—approximately $1.5 billion in credit—but the Germans were only willing to supply 150 tonnes (Fishlock, 1985a,b; Davies, 1985b). The deal was eventually scuttled in March 1986 when China decided not to proceed with plans for the Sunan plant (Davies, 1986). After the plans for construction of the reactors were revived over the summer of 1987, both the Chinese and West German governments denied resurrecting plans for the spent fuel storage. The suggestion by the chairman of Kraftwerk Union that such plans were possible were met by vehement denials from governments of both countries (*Power Europe*, 1987). "We reiterate that China will not accept nuclear waste from any country for storage in China…with regard to the trade of nuclear fuel, our principle is that the spent fuel from nuclear fuel exported by China may be returned to China for reprocessing" (*Xinhua News Agency*, 1987). The chairman of the German parliamentary environmental committee claimed that "no CDU-led government would even consider such a plan, let alone agree to it," and the opposition SPD called on the government to reject this "modern form of colonialism—to export unsolved problems in industrialized countries to Third World developing countries" (*Power Europe*, 1987).

One salient feature of the plans, which is relevant to the current Russian proposal, was the fact that the U.S. government was in the process of negotiating a nuclear cooperation agreement with China at the time. The history of those negotiations may prove instructive in the evaluation of the prospective USA–Russia negotiations. The U.S. government had consent rights over much European fuel, including West German fuel. U.S. approval would have been necessary prior to shipments to China. The USA was, at least in public, carefully non-committal. "We would be sympathetic to the desires of some European countries who do not have a suitable prospect for disposal" (Lewis, 1984). Moreover, American approval of specific agreements would be on a case-by-case basis, "in which non-proliferation is the essential standard" (Lewis, 1984). Obtaining the necessary U.S. agreement may have seemed feasible in 1984 and 1985. The United States was in the middle of negotiating a peaceful nuclear cooperation agreement with China at the time. Negotiations had been under way since 1981 and had picked up in 1983 (Department of State, 1985). China had joined the International Atomic Energy Agency (IAEA) in January 1984. On a trip to Beijing in April 1984, President Ronald Reagan had witnessed the initialing of a peaceful nuclear cooperation agreement.

However, the USA–China Nuclear Cooperation Agreement, which was negotiated rapidly, encountered major obstacles equally rapidly. The first obstacle was the lack of any written agreement committing the Chinese government to non-proliferation of nuclear weapons. China was not a signatory of the Non-Proliferation Treaty at the time, and had indeed earlier espoused a policy that was favorable to proliferation as a way of ending the hegemony of the two major nuclear powers. The administration contended that an after-dinner toast made in January 1984 by Chinese Premier Zhao Ziyang, namely, "China does not advocate nor encourage

proliferation. We do not engage in proliferation ourselves, nor do we help other countries develop nuclear weapons" (Department of State, 1985) would be sufficient evidence of the Chinese change of heart on proliferation. Although this verbal assurance was repeated in a speech to China's National People's Congress, the Chinese angrily refused to provide written guarantees, taking the position that the negotiations were over and that the administration should simply forward the agreement to Congress for approval (Oberdorfer, 1984).

The second and most likely more serious obstacle was the administration's misgivings after signing the pact regarding reports of China's role in supplying nuclear assistance to Pakistan. These misgivings led the administration to seek more assurances from China before submitting the agreement to Congress for approval. The proposal was eventually submitted to Congress over a year later, in July 1985, and approved by Congress on the condition that the President must "certify that China had agreed it will use U.S. nuclear technology only for peaceful purposes" (Fritz, 1985). Although the agreement thus took effect on 11 December 1985, the required Presidential certification was not granted until over 12 years later. The Reagan administration refused to certify the agreement following a series of incidents, including intelligence regarding Chinese nuclear assistance to Pakistan and the sale of Silkworm missiles to Iran (Hussain, 1989); and the prospects for certification sank dramatically as a result of the controversy surrounding the events at Tiananmen Square in 1989. After China signed the Non-Proliferation Treaty in 1992, certification was eventually forthcoming when, in January 1998, President Bill Clinton signed an agreement with Chinese President Jiang Zemin. It came into effect on 18 March 1998 after Congress failed to reject the certification (*Xinhua News Agency*, 1998). However, although some trade has taken place, Chinese refusal to provide blanket guarantees on re-export of nuclear technology, coupled with reports by the Central Intelligence Agency (CIA) of ongoing nuclear exchanges with Pakistan, blocked the approval of several export licenses for U.S. nuclear technology in 2000 (Gertz, 2000). The Chinese were reported to prefer case-by-case guarantees rather than the blanket guarantees requested by the Clinton administration.

Policy Setting and Identification of Key Stakeholders

It is not our place to take a position on the desirability or wisdom of any of the positions expressed by the various parties regarding import of spent nuclear fuel into Russia. The following analysis is provided only to identify potential problems and likely flashpoints that will arise during and after the actual negotiations. The identity of the principal actors and the broad outline of their views and motivations are relatively clear. In this case study of bilateral negotiations on a peaceful nuclear cooperation agreement, the principal formal actors are the USA and Russia. Specifically, the negotiations will take place between the U.S. Department of State and the Foreign Ministry of the Russian Federation. There are, however, many secondary actors that will play a key role in the larger set of negotiations necessary for

the import of spent fuel into Russia. Within the governments of the principal actors, the respective energy ministries will be critically important. These include the governments of the exporting countries ("countries of origin" in the terminology of the Joint Convention), which can be divided into those with a large amount of U.S. obligated fuel (such as Italy, Japan, South Korea, Taiwan, Spain, and Switzerland) and those with significant amounts of non-obligated fuel (such as Belarus, Bulgaria, Finland, France, Germany, Hungary, Ukraine, and United Kingdom). Another important group of actors are the transit countries that must permit the passage of fuel across their territory or through whose territorial waters any sea routes pass. Environmental advocacy groups on the international stage, such as Greenpeace and the Bellona Foundation, and Russian organizations such as Green Cross of Russia and the Socioecological Union, have also been deeply involved.

Russian Federation

Current Spent Fuel Import Proposals

As discussed previously, the plans developed by U.S. Fuel and Security regarding storage of spent fuel on a remote Pacific island were modified in the spring of 1997 to include collaboration with the Russian Ministry of Atomic Energy (*Agence France Presse*, 1997). By May 1998 this plan had apparently been modified to form the basis of the Non-Proliferation Trust (Bunn et al., 2001), with the key difference that the spent fuel would be stored on Russian territory after the necessary changes to Russian legislation. The primary stated goal of the Non-Proliferation Trust was to provide up to US$3.5 billion for safeguarding and security of fissile materials, radioactive waste management, environmental restoration, and wage arrears for workers in the nuclear and defense industries. This would be accomplished by the long-term dry storage (30–40 years) of up to 6,000 tonnes of foreign-origin spent fuel at either the Mining and Chemical Combine (MCC) in Krasnoyarsk Krai or at the Mayak facility in the southern Urals at a rate of US$1,000 to US$2,000 per kg of uranium. To win support for the plan from Russian lawmakers, the remainder of the profits (projected to be about US$300 million) would go to supplement funds for pensioners and orphans. An interesting aspect of the Non-Proliferation Trust is the endorsement of the proposal by a prominent U.S. environmental group (the National Resources Defense Council), as reflected by the inclusion of Dr. Thomas Cochran in the project. His view of the NPT is illustrative:

> The Non-Proliferation Trust Inc. project does not propose "dumping the world's spent nuclear fuel in Russia." It instead proposes to raise substantial funds for a variety of environmental and other worthy projects by bringing a limited amount of spent nuclear fuel into Russia, storing it in a state-of-the-art facility similar to one currently in use in Western Europe and guaranteeing that the spent fuel is never reprocessed.… Spent fuel transport and storage is not risk free, but these risks are greatly overshadowed by the enormous good that can be rendered simply by spending a portion of the revenues to clean up existing contaminated sites in Russia (Cochran, 1999).

However, these plans were further modified in 1999 (Bellona, 1999; McLachlan and Moskalenko, 2000). MINATOM set forth its own plans for importing up to 20,000 tonnes of spent fuel, thereby generating up to US$21 billion in total revenues. This proposal differs from the Non-Proliferation Trust proposal in that it is considerably more oriented toward offering commercial spent fuel management services than strictly serving non-proliferation and environmental remediation needs. Significantly, funds from this plan might also be invested in completion of the RT–2 reprocessing plant, thereby considerably increasing the reprocessing capacity of the Russian Federation. A unique service expected to be offered is a provision that waste from reprocessing need not be shipped back to the country of origin (Akin, 1999; Lebedev and Ptitsyn, 2001).

Legal Background

The Russian Federation has long experience in international movements of spent fuel. The Soviet Union exported nuclear power plants to several neighboring countries, and reactors were also built in territories that are now independent states. During the Soviet era, spent fuel from these reactors was shipped back to the Soviet Union under take-back agreements. However, the policy shifted following the breakup of the Soviet Union. In June 1990 President Yeltsin of the Russian Republic announced that "foreign waste would no longer be welcome in Russia" (Bradley and Payson, 1997) and canceled existing take-back agreements. This position was strengthened by the passage in 1991 of the Law on Environmental Protection. Section 3 of Article 50 states that "import for the purpose of storage or disposal of radioactive waste and materials from other states, sea dumping, and launching of radioactive waste and materials into space for disposal are prohibited." A series of presidential decrees in the early 1990s attempted to regulate Russian responsibility as the successor country for existing Soviet agreements. A 1993 decree (No. 472, dated 21 April 1993)[3] allowed the return of spent fuel for reprocessing. This was further modified in 1995 by a governmental decree (No. 773, dated 29 June 1995). Spent fuel from Soviet-built reactors was to be allowed back into the country. However, the decree obliged MINATOM to return any radioactive waste generated during reprocessing to the country of origin within 30 years. The renewed implementation of these take-back agreements varied, largely as a function of whether the country was a member of the Commonwealth of Independent States (CIS) (such as Ukraine) or was outside the CIS (such as Bulgaria or Finland). Although fuel shipments from Ukraine continued throughout the period with only minor interruptions, fuel shipments from countries outside the CIS were more problematic. Shipments from Finland were stopped in 1996 as a result of domestic pressure in Finland regarding the environmental situation at Mayak, in Russia, the location of an RT–1 reprocessing plant. Finland has recently undergone a major process of siting a spent

[3] President Yeltsin, Decree of the President of the Russian Federation on the fulfillment of the Russian Federation of intergovernmental agreements to cooperate in the construction of nuclear power stations abroad, cited in Berkhout (2002).

fuel repository and no longer appears interested in Russian take-back services. Fuel shipments from the Kozloduy reactors in Bulgaria, suspended since 1990, resumed in 1999. The issue of repatriation of reprocessing waste was apparently not clearly settled. A Kozloduy press release stated that "Russia's Atomic Energy Minister (Evgeny) Adamov has told our delegation led by Bulgarian State Energy Agency president Ivan Shilyashki last week that radioactive waste obtained in reprocessing spent nuclear fuel will not be returned to Bulgaria" (*Reuters*, 2000). Fuel has also been shipped from the Paks power station in Hungary, also without clear responsibilities being drawn up for the resulting reprocessing waste.

The Russian Law on Environmental Protection had been widely viewed as the major stumbling block to MINATOM plans for spent fuel import, and may have been the reason that MINATOM was interested in the proposal for a Pacific storage site. However, despite widespread resistance by environmental advocacy groups within and outside the Russian Federation, MINATOM has been successful in having the law amended to allow import of spent nuclear fuel for long-term storage. A package of three bills was passed by the Duma in June 2001. These bills were signed into law by President Putin in July 2001. The first bill of the three-bill package, passed by a vote of 243 to 125 (Ivashko, 2001), amending the law on Environmental Protection, adds the following section 4, which modifies section 3 by adding the phrase "excluding the cases specified in this law". The other two bills include an amendment to the law "On the Use of Atomic Energy" that defines spent fuel and specifies that any exports of reactors or fuel, or imports of spent fuel, shall be in accordance with procedures to be established by the Russian government. The bill was passed by a similar margin, 250 to 125 (Ivashko, 2001). The final bill was a new law "On Special Ecological Programs" to regulate expenditure of the proceeds of such imports. Among other provisions, it establishes an independent commission to oversee disbursements, adopting elements of the Non-Proliferation Trust that were created to counter concerns that the money would be misappropriated.

Positions of Stakeholders within the Russian Federation

Statements from the highest levels at MINATOM suggest economics as the prime motivation for the spent fuel import. Russia has been faced with severe constraints on budgets, with many government agencies, including MINATOM, unable to even pay regular salaries to employees. Funding for new activities, including measures to improve nuclear infrastructure, are lacking. For example, in June 1999 the then Minister of Atomic Energy, Evgeny Adamov, stated that, "To get money for the reprocessing and dumping of spent nuclear fuel is better than borrowing money from the IMF" (*Itar-Tass*, 1999). Import and storage of spent nuclear fuel yields the potential for very high revenues of hard currency—up to US$20 billion—for the Russian government and for MINATOM in particular. MINATOM also seems driven by commercial pressures to improve its services for spent fuel management. It is possibly this commercial pressure and potential loss of markets that led to the idea of importing fuel from non-Soviet reactors coupled with provisions for the retention

of the wastes in Russia. The plan, introduced by former atomic minister Evgeny Adamov, has the support of his successor Rumyantsev. Adamov had emphasized the financial aspects. According to *Interfax* (1999) (5 January),

> Adamov has stated Russia will try to restore its leadership in the market of recycling used nuclear fuel. Adamov told the deputies of the Krasnoyarsk territorial legislative assembly on Tuesday that this business brings quick profits and has not been finally monopolized. By recycling one kilogram of used nuclear fuel one can earn up to US$1,000, he said. Meanwhile, Russia earns just about US$300 from recycling nuclear fuel received from Ukraine.

A consistent theme in statements from Rumyantsev is that MINATOM views such firms as COGEMA and BNFL as competitors, claiming that "Russia faced increasing competition from French and British companies that are eager to provide nuclear fuel to the former Soviet republics and Eastern European countries, which have Soviet-built nuclear reactors…. The British and French offer to accept the spent fuel" (*Associated Press*, 2001a). Later, he opined: "We have already lost the Finnish market and now we are losing the Czech Republic and Hungary. Britain and France are pushing us out of them" (*Nuclear Engineering International*, 2001). This view as been taken as far as suggesting that environmental groups opposing Russian plans are in the pay of foreign competitors (*BBC/Kommersant*, 2001). However, such companies may also be quite willing to enter into cooperation with MINATOM (for example, by providing sea transportation services for the spent fuel or for other nuclear services not directly related to spent fuel storage).[4]

Another theme reiterated by MINATOM is that the money from such a plan is necessary for clean-up of the contaminated territories of the Russian Federation. According to Rumyantsev, "A quarter of the money will be dispatched to the regions that will store and process nuclear fuel waste, and 75 percent will be spent on state environmental programs" (*Nuclear Engineering International*, 2001). A major rationale for the plan was both to finance reconstruction of the nuclear complex and to deal with the legacy of the Soviet nuclear complex. The legacy of past practices and accidents is particularly severe at the Mayak Production Association, the location of the first Soviet reprocessing facility. Discharges of medium-level radioactive waste, first to the Techa River and subsequently to Lake Karachai, have created radiological pollution problems unparalleled in the rest of the world. Management of contamination problems from the Russian Northern and Pacific Fleets—including management of spent naval nuclear fuel—are critical. Other areas, such as the facilities near Tomsk and Krasnoyarsk, are also affected, although not as severely as Mayak. Remediation of onsite contamination and rather widespread riverine contamination will require considerable resources. The existence of urgent problems (primarily associated with decommissioning of naval vessels and remediation of the

[4] For example, COGEMA has signed an agreement with MINATOM whereby reprocessed uranium can be enriched at the Siberian Chemical Combine. Enrichment of reprocessed uranium (as opposed to "virgin" uranium from a mine) is problematic, as the fission products and transuranic nuclides that are present as contaminants in uranium and recovered during reprocessing create significant contamination concerns in enrichment plants. The trace amounts of plutonium in the depleted uranium used in the Kosovo conflict originated from the use of reprocessed material in the U.S. enrichment chain and exemplifies the political costs of such contamination.

contamination problems at Mayak), combined with a lack of resources to deal with them, is a significant problem for MINATOM.

A consistent position of MINATOM is that spent nuclear fuel is a resource and not a waste (Egorov et al., 2000, p. 77). This is entirely consistent with the viewpoint of other countries that have maintained plans for a closed fuel cycle. This position was echoed by Rumyantsev, who stated in 2001 that spent fuel is "a valuable raw material, which only three countries in the world can handle. Russia is one of them" (*Nuclear Engineering International*, 2001). MINATOM does not consider that the public is sufficiently informed to have input into the decision-making process. Referenda on questions of spent fuel management have been repeatedly derailed with the argument that the public is not sufficiently sophisticated. In 2000 Prime Minister Mikhail Kasyanov expressed the position that, "[As such a] vote could only be an emotional decision, only scientists and specialists can find out the truth and [offer] the right solutions" (Stolyarova, 2000). This position was echoed in the same article by Yury Bespalko, a press spokesman for the Nuclear Ministry; "Of course, the people's right to express their opinion is guaranteed by the Constitution…but society is far from informed about affairs in the [nuclear-energy] field, and so it is not prepared to judge such a technical issue."

The Russian parliament is also a key element in the decision-making process within Russia. Almost all factions of the Duma, with the very notable and vocal exception of the Yabloko Party, were supportive of the plan for spent fuel imports. Members of the Duma expressed a variety of reasons for supporting fuel imports. Some seemed mainly to consider that the benefits of the imports would outweigh potential environmental risks. For example, Nikolai Kharitonov, the head of the Agrarian Party, stated: "We need to support this legislation, otherwise we lose nuclear security and nuclear weapons…. This money can be used for our nuclear scientists and to treat our own waste" (*Bloomberg*, 2001). Still others express concerns about potential environmental impacts, but see the imports as a way to finance environmental clean-up. Yegor Ligachev, a former Politburo member and current Communist deputy, stated: "I am voting for this bill because I don't want places in my country remaining dead zones, contaminated by radiation" (*CNN*, 2001). Others appeared to view the spent fuel simply as a resource, disputing the way in which opponents of the plan characterized the spent fuel as a "waste." According to Vladimir Zhirinovsky, "Waste is something found at a dump. It stinks and crawls with microbes and beetles. This, on the other hand, is a very valuable raw material for the production of plutonium and uranium, all of which may be used to heat and light the country" (*BBC*, 2001). The position of the members of the upper house of the Russian Parliament, the Federation Council, were less clear. The upper house refused to debate the amendments, whereupon they were automatically sent to President Putin for approval and signed into law in July 2001. Only the third bill in the package, the one dealing with the regulation of the income gained from fuel imports, was considered by the Federation Council.

Regional governments also appear less worried about the environmental aspects than the potential revenues accruing to the regions and the prospects for completion of the RT–2 reprocessing plant, which is seen as a needed source of jobs.

Understandably, the Krasnoyarsk residents, who have been confronted with a fait accompli by Moscow, were most interested in the financial aspect of the project. As Sergey Khrul, head of Berezovskiy District Administration, put it: "If we're up for sale, let the price be as high as possible" (*Nezavisimaya Gazeta*, 2001). The primary interest of the combines (Mayak and the MCC) is focused on the preservation and creation of employment opportunities for their workforce (Novikov, 2001). Officials and workers at the MCC have expressed similar sentiments.

United States

The potential for spent fuel to contribute to a nuclear weapons program gives rise to concern over non-proliferation of nuclear weapons. Such concerns are regulated both by the multilateral Treaty on the Non-Proliferation of Nuclear Weapons (which entered into force in March 1970) and by national legislation. Most countries have national legislation requiring the negotiation of a peaceful nuclear cooperation agreement to ensure that the trade in nuclear technology does not contribute to the proliferation of nuclear weapons. In the United States, such agreements are referred to as Agreements for Cooperation Concerning Peaceful Uses of Nuclear Energy and are required by Section 123 of the Atomic Energy Act of 1954, as amended by the Nuclear Non-Proliferation Act of 1978 (42 U.S.C.2153 (b), (d)). Such an agreement requires a number of guarantees, including guarantees (the following is closely paraphrased from McGoldrick, 2000):

> that the nuclear material subject to the agreement will not be used for any nuclear explosive device, or for research on or development of any nuclear explosive device, or for any military purpose; that adequate physical protection will be maintained with respect to the nuclear material subject to the agreement; that no nuclear material subject to the agreement will be reprocessed, enriched, or otherwise altered in form or content without the prior approval of the United States; that no plutonium, no uranium 233, and no uranium of isotope 235 enriched to greater than 20 percent will be stored in a facility that has not been approved in advance by the United States; that safeguards as set forth in the agreement will be maintained with respect to all nuclear material and equipment subject to the agreement, so long as the material and equipment remains under the jurisdiction or control of the cooperating partner; and it is stipulated that the United States will have the right to require the return of any nuclear materials or equipment subject to the agreement if the cooperating partner, which is a non-nuclear weapon state, detonates a nuclear explosive device or violates or terminates or abrogates an agreement providing for International Atomic Energy Agency safeguards.

The agreements that the United States has negotiated have given the U.S. government control over the disposition of any fuel produced in the United States or irradiated in a reactor supplied by a U.S. company, a control commonly referred to as "consent rights." This comprises the majority of all fuel today: approximately 33,000 tonnes in 2002, of which almost 28,000 is either part of EURATOM or Japan (USDOE, 1994).

However, the USA and the Russian Federation have not yet negotiated such an agreement.[5] Following the passage of the amendments to the Russian law on protection of the environment, the United States Department of State announced that it would not allow shipment of fuel subject to U.S. consent rights until a peaceful nuclear cooperation agreement was signed between the Russian Federation and the United States. The State Department noted that "the United States would need to be assured that the planned transportation, storage and disposition of the fuel complied with appropriate standards of safety and security…. An especially important factor would be the nature of Russia's nuclear cooperation with third parties" (Department of State, 2001). It appears that the United States is concerned about the extent of nuclear cooperation between Russian and Iran. However, another significant issue is potential future reprocessing of spent fuel for plutonium recovery in Russia. U.S. policy on reprocessing was first enunciated in President Carter's Presidential Directive 8, which was echoed by President Clinton in 1994 as Presidential Decision Directive 13 (PDD–13), dated 27 September 1993. This policy states:

> The United States does not encourage the civil use of plutonium and, accordingly, does not itself engage in plutonium reprocessing for either nuclear power or nuclear explosive purposes. The United States, however, will maintain its existing commitments regarding the use of plutonium in civil nuclear programs in Western Europe and Japan (Gugliotta, 2001).

These twin issues were very clearly stated in 1999 by Under Secretary of Energy Ernest Moniz (1999):

> We do not have an agreement that allows for full cooperation in these areas, and certainly the principle (*sic*) obstacle to this is our concern about nuclear collaboration with Iran, in particular, collaboration that goes beyond the construction of a power reactor into the areas of technology that we feel presents a tangible proliferation risk. …resolving it (*the issue of cooperation with Iran*) will be a prerequisite if we are going to progressively pursue this issue…. Our position remains one that strictly opposes reprocessing. Nevertheless, one can see some proliferation benefits from consolidation, and perhaps from consolidation in a [nuclear] weapon state. But there are many complicated issues, environmental issues, legal issues, and transport issues with respect to Russia…

With regard to the USA giving up its policy against reprocessing, Moniz stated that he personally did not see any change taking place. After passage of the Russian amendments, these positions were reiterated (Bleek, 2001):

> According to a State Department official, the negotiation of a nuclear cooperation agreement with Russia has been impeded since the early 1990s by the U.S. government's decision to use the issue to discourage Russian nuclear cooperation with Iran. It appears that the Bush administration remains firmly committed to making a deal on Iran a requirement for agreement, while Russia appears equally committed to completing at least the first power reactor at Iran's Bushehr nuclear site. … In a policy statement released after the Duma's passage of the new law, the Bush administration said that Washington would not allow Russia

[5] This agreement has been negotiated and was signed on 6 May 2008 (Department of State, 2008). In September 2008, the agreement was withdrawn by the Bush administration over a Russian military intervention in the Republic of Georgia. As of September 2008 the U.S. Congress had not approved the agreement.

to reprocess U.S.-origin spent fuel. Whether this policy would apply to future reprocessing technologies that would not fully separate reprocessed plutonium into weapons-usable form, as apparently envisioned in both Russia's plans and the administration's recently released energy policy document, remains unclear.

Other Governments

Many countries have reflected the position that spent fuel management is a national responsibility in legislation. Canada, Germany, and Sweden have now implemented legislation that prohibits permanent disposal of radioactive waste in foreign countries (Bleek, 2001). European governments appear cool to the idea of shipping spent nuclear fuel to Russia, citing environmental and safety issues. According to EU Environment Commissioner Margot Walstrom, "None of the European countries have plans for exporting their expended nuclear fuel to Russia" (*The Russia Journal*, 2001). The major concerns expressed in public are environmental and safety issues, with European countries being "concerned about Russian safety levels for the processing and transportation of nuclear waste. [Walstrom] said the processing centre in the Ural Mountains [i.e., Mayak Production Association in Chelyabinsk] where it is planned to treat the waste did not meet European safety norms" (*BBC*, 2001). However, some governments appear less concerned. For example, Bulgaria and the Ukraine—both of them signatory to the Joint Convention, which requires them to satisfy themselves that Russia has an adequate technical, legal, and regulatory structure for managing the waste—shipped spent fuel to Russia after the convention entered into force. Taiwanese officials, who had earlier expressed interest in storage services in mainland China (Sharma, 1992), also appear to have expressed cautious interest in the MINATOM proposal (Chiu, 2001).

The stance of the relevant transit countries is less clear. East Asian fuel would probably enter Russia at a port in Primorye Krai. Entry into the Sea of Japan/East Sea of spent nuclear fuel from Taiwan, for example, could therefore potentially trigger responses from Japan, North Korea, and South Korea. This was an issue when Taiwan signed an agreement in 1997 to ship low-level waste to North Korea, an action that triggered protests from both Japan and South Korea. Taiwan countered by pointing to Japan's own shipments of spent fuel and reprocessing waste to and from Europe. The response of transit countries—particularly if they stand to be beneficiaries of such plans, as was not the case in the North Korea–Taiwan agreement—are not yet clear. In the case of fuel of European origin, it is likely that transit countries would be a much more significant problem. For example, Germany has a major problem in managing its own shipments of spent fuel and reprocessing waste. Turkey has expressed a clear opposition to any shipments through the Bosporus (*Associated Press*, 2001b). Any Baltic or Arctic route would be likely to trigger a response from the Scandinavian countries.

Non-Governmental Organizations and Public Opinion

Environmental groups are opposed to import of nuclear waste based on concerns for future environmental contamination and mistrust of government. Some environmentalists are troubled by plans put forward by the Non-Proliferation Trust and MINATOM. They say such plans pose threats ranging from nuclear mishaps while the fuel is in transit, to new proliferation problems, to a new tide of anger at America for using Russia as a nuclear dump (Akin, 1999). The environmental groups are also concerned that that money will be misappropriated, leaving waste in Russia with nothing to pay for clean-up. According to Thomas Nilsen of Bellona, "We are suspicious that most of the income from spent nuclear fuel will end up inside Moscow's ring road, and not in Siberia where the money is needed for environmental clean-up" (Peterson, 2001). The MINATOM proposals have caused the Non-Proliferation Trust itself some alarm, particularly the provisions of the bills that would support refurbishment of Russian nuclear cycle facilities. According to the *New York Times*, "Russian officials were unwilling to accept a moratorium on reprocessing spent fuel". For this reason, [Cochran] said, the new Russian plan will be "dead on arrival on this side of the Atlantic" (Tyler, 2001).

The other significant factor facing all decision makers is the public aversion to all things nuclear. We distinguish between two forms of public opposition. The first is public opposition in the host country (country of destination in the language of the Joint Convention)—namely, public opposition to hosting a spent fuel facility. The second is public opposition in the country of origin. Extreme lack of public acceptance in the destination country appears to have doomed the Pangea proposal and, in the case of the proposals for Pacific island storage, appears to have been a factor in the development of the Treaty of Rarotonga that established the South Pacific Nuclear Free Zone. Public opinion in Russia appears to be against proposals for importing spent fuel into Russia (Vasilieva, 2002), with the same patterns of opposition and acceptance as are seen in Western countries, namely, general opposition at the national level (approximately 90 percent opposed, according to some polls), with a polarization increasing in the actual storage location, with some deeply opposed but others supportive because of the economic potentials. However, a lack of independent polls makes it difficult to judge public opinion in Russia. The polls commissioned by Greenpeace did not directly address the heart of MINATOM's argument, which is that spent fuel is a resource and not a waste. The polls simply asked whether the respondents were against the import of radioactive material into the country.

Discussion

There are considerable parallels between the current situation and both the Chinese proposal in the 1980s and the Marshall Islands proposal of 1994. A desire for hard currency and an existing problem with how to fund remedial efforts for

contaminated lands is a prime motivation in offering a storage site. A shortage of hard currency to pay for imported West German reactors was apparently one of the primary motivations behind the Chinese offer. The deal appears to have collapsed, at least in part, over the amount of spent fuel to be imported in exchange for cash payments, indicating the importance of the cash aspect. Moreover, one of the rationales for the Marshall Islands plan was to clean up territories contaminated as a result of U.S. nuclear testing on Bikini Atoll. A major concern also exists within the United States regarding the non-proliferation credentials of the host country. The oft-repeated overarching policy issue facing the U.S. government is the cooperation between Russia and a variety of states that the USA has deemed hostile, most notably Iran. Such concerns have been repeatedly held up by the USA as the primary obstacle to a negotiated agreement (Leopold, 2002). Extraction of a pledge to end exactly such assistance was a precondition for the long-stalled USA–China nuclear cooperation agreement in 1997 (Scott Tyson, 1997). The pressure for such an agreement in the wake of the September 11 attack on the USA has grown considerably. Such a demand is clearly a bottom line for U.S. agreement.

Another policy issue, which has less-clear precedents, is the long-standing U.S. policy on discouraging reprocessing. It is important to note that there are two aspects to this. The first is the reprocessing of the obligated fuel itself, which the United States has clearly indicated is unacceptable. However, obtaining the requisite U.S. guarantees against any reprocessing of the U.S. obligated fuel may not be difficult. It is not clear that Russia will have the capacity for significant excess reprocessing capacity for quite some time, possibly for the next 20 years. For example, the MINATOM analysis suggested that completion of the RT–2 plant could only start operations in 2020. Although the USA may object to reprocessing of U.S. obligated fuel, one counter-argument is that it has, in the past, allowed reprocessing of U.S. obligated fuel by European reprocessors.

The more difficult aspect would be if the funds obtained from storage of the fuel were used to support the development of the Russian reprocessing industry, most obviously by completing the unfinished RT–2 plant near Krasnoyarsk. Russia has made no secret that it prefers a closed fuel cycle. The idea of funding the upgrade of the Russian reprocessing complex with funds from storage of imported spent fuel is certainly not new. In a 1994 conference in Krasnoyarsk, the director of the MCC Valery Lebedev suggested that funding for the completion of the RT–2 reprocessing plant at the Mining and Chemical Combine could be obtained by fuel storage services (Lebedev, 1994):

> . . .the completion of construction of the RT–2 plant—by setting up an investment fund at the expense of accepting nuclear fuel waste (NFW) from other countries for temporary storage with the subsequent reprocessing at the plant under construction—is appropriate and analogous with world practice (France, United Kingdom). We have orders from other countries to provide them with such services (Bulgaria, Germany, Korea, Slovakia, Switzerland, Ukraine). It is possible to earn around US$300 million annually for rendering these services. . .the Krasnoyarsk Territorial Administration in its letter No. 10013 of 6 January 1994 applied to RF MINATOM, agreed to accept some NFW from other countries at the MCC for temporary storage with subsequent processing at the RT–2 plant. The idea of

> Russia jump-starting its reprocessing industry and generating massive new amounts of plutonium troubles some. . .. MINATOM, however, sees it differently (Lebedev, 1994).

According to MINATOM spokesman Yury Bespalko: "Of course there is a desire to reprocess the fuel NPT would import. It would make the whole project more profitable" (Leopold, 2002). U.S. concerns over the support that such imports would provide to the Russian nuclear industry would not be helped by the position expressed by Duma representative Nikolai Kharitonov that such a measure is needed to preserve Russia's weapons complex (*Bloomberg*, 2001). Although safeguarding existing weapons and ongoing operation of plutonium production facilities have been accepted by the United States in the interest of stabilizing the Russian weapons complex, it seems likely that any measure aimed at the actual extension of Russian nuclear weapons capability is not likely to be one of its policy goals. However, it is not clear that such considerations were important during the negotiations on the USA–China nuclear cooperation agreement.

It is important to note that Russian trade with Iran is not considered by the USA only in the context of the negotiation of a peaceful nuclear cooperation agreement. It seems far more likely that U.S. concerns about Russian trade with Iran would far overshadow concerns about Russian fuel cycle policy, particularly in the wake of the 2001 terror attacks in the USA, and that negotiations on nuclear cooperation may be simply one of the tools available to the U.S. government to shift the Russian position on relationships with Iran. If this were the case, it would imply that U.S. opposition to Russian reprocessing might be subordinate to U.S. opposition to Russian trade with Iran.

Lack of democratic acceptance within Russia may not be as significant a problem for MINATOM, at least in the initial phases, as might be imagined. To be a significant impediment, there must be a mechanism for translating public opposition into effective constraints. This can come, for example, either through legal action or through voters who are willing to penalize politicians who support such proposals by refusing to vote for them. In Western Europe, the anti-nuclear movement has been extremely successful in impeding or disrupting the activities of the nuclear complex. This has been achieved both through legal channels and through direct interference with nuclear-related activities, such as physically blocking train transports. The signal failure of the environmental movement within the Russian Federation either to block passage of the amendments to the Russian Law on environmental protection or to mount a successful referendum campaign on the issue is instructive in this regard. Although several petitions have collected significant numbers of signatures to put matters regarding nuclear waste management to a vote, invalidation of signatures has always kept the petitions from being accepted. MINATOM appears, to date, to have managed to stay well within the law in its actions, thus avoiding a clear violation of a legally expressed public opposition. With respect to the question of whether voters would penalize deputies who voted for the law, a public survey suggested that there could be a backlash, with 91 percent of voters responding negatively to the question "Would you vote for a deputy who voted for the 'nuclear drafts'?" (Ivashko, 2001). However, it remains to be seen whether the environmental movement can succeed in making this a major campaign

issue in upcoming elections. Furthermore, it appears that spent fuel shipments have been successfully completed on a routine basis within Russia. Shipments of nuclear fuel from decommissioned submarines have been transported long distances, as have shipments from Bulgaria, Finland, and Ukraine. Experience suggests that such shipments can be carried out with considerably less overt physical resistance than in, for example, Germany. However, further studies of spent fuel shipments in Russia would be useful to clarify this point.

Lack of democratic acceptance in the country of origin may also not be such a significant problem for MINATOM. For example, the European–Chinese waste deals of the mid-1980s appear to have foundered on primarily economic and proliferation concerns coupled with the potential for interference with domestic reprocessing plans. Of course, this may simply be because the deal never advanced to the point that public opposition was mobilized and because the discussions took place prior to the Chernobyl accident. There are no clear indications, for example, that a country such as Taiwan has a domestic movement capable of blocking offshore shipment. A nuclear waste deal with North Korea appears to have been blocked primarily as a result of governmental pressure from Japan and South Korea rather than by internal pressure. Officials from the Taiwanese power company have, in fact, made statements that suggest that democratic acceptance in the destination country is not a major consideration. As reported by *Deutsche Presse Agentur* (1996), "A company official told the paper that there are three advantages in storing nuclear waste in North Korea: it is close to Taiwan, has experience in storing nuclear waste and can make a quick decision because of its totalitarian regime." It is difficult to say what the public reaction might be in South Korea if the South Korean government were to send spent fuel to Russia for storage or reprocessing. Although South Korea bitterly opposed the shipment of waste from Taiwan to Russia, it seems that political concerns on the Korean peninsula were as much of a factor as concerns over the democratic process. Domestic political opposition to allowing Russia to import spent fuel subject to U.S. consent rights may also be a factor in the United States. However, public opposition was only able to delay, not prevent, the opening of the Waste Isolation Pilot Plant in the United States, a permanent disposal site for transuranic waste. Furthermore, strenuous domestic opposition has not yet been able to cancel the planned high-level waste repository at Yucca Mountain, although it has very successfully delayed it. Domestic opposition was also unable to block the U.S. take-back of research reactor fuel under the Reduced Enrichment for Research and Test Reactors (RERTR) Program with the Department of Energy eventually winning legal approval in 1997. In the absence of other factors, it would seem that domestic opposition in the United States would not be determinative in coming to a decision on allowing waste to be stored in Russia. However, it could still be a potent force in at least delaying implementation of any such agreement, either through legal action in the U.S. courts or through political pressure on members of the U.S. Congress.

The preceding review suggests a possible outcome: that use of a nuclear cooperation agreement as leverage in modifying Russian Iranian policy is likely to sacrifice at least the desire of the USA to halt all reprocessing, meaning that Russia may be able to receive consent to at least import—if not to actually reprocess—

U.S. obligated fuel, in return for dropping relations with Iran. The basic trade-off in the negotiation would appear to be the issue of Russian trade (both nuclear and non-nuclear) with Iran, versus the U.S. commitment to discouraging reprocessing as a way of reducing the threat of proliferation. The Russian Federation could easily forgo any immediate reprocessing of imported fuel, as it is not clear if it has the necessary reprocessing capacity even if it wanted to reprocess. Such an agreement would be in contrast to U.S. agreements to allow European reprocessing of U.S. obligated fuel and could be portrayed as a significant concession, as non-cooperation with Iran would go beyond any legal requirements. The official Russian position, for example, is that Iran as non-weapons state member of the Non-Proliferation Treaty is subject to full-scope safeguards and that nuclear cooperation between Iran and Russia is therefore not a non-proliferation issue.

Although public opposition may not be determinative in the negotiation phase, it will certainly come into play when the U.S. Congress is asked to ratify any negotiated agreement. If opposition groups are able to successfully raise questions in the U.S. legislature about democratic procedure within Russia, and if they are able to link these with concerns about Russia's reprocessing policy, they may be able to block the implementation of any negotiated agreement. As the case of Chinese nuclear cooperation agreement has shown, the U.S. Congress may be able to exercise considerable influence by withholding approval of the agreement—or by giving the administration an additional lever to use after negotiations have been completed, by giving only conditional approval.

Significant problems related to public opposition could arise, however, after spent nuclear fuel has been imported. Perceived slights to Russian national pride that would arise as a result of accepting nuclear fuel could become an explosive issue. It is difficult to exaggerate the way in which acceptance of nuclear fuel is perceived. The presence of large amounts of material that are considered unacceptable anywhere else in the world could give rise to opportunities for stirring up resentment against any of the parties associated with the import of the waste. This could be either the country of origin, the Russian government in power at the time of the imports, or the United States, if it is perceived to be allowing the waste to come to Russia. Such concerns have been expressed by environmental groups (Akin, 1999). A very similar point was made by Sergei Mitrokhin, a Yabloko Duma representative:

> Politically it is exceptionally important that virtually 90 percent of Russia's population are opposed to these plans. This means, since the Americans are not aware of the scale of this opposition and disagreement, that the implementation of these plans could deliver a very strong blow to Russian–U.S. cooperation and provoke a rise of anti-American sentiments in the country, which we, for our part, would not at all want to see (Kremlin, 2002).

In particular, a severe accident involving foreign fuel may lead to serious political problems. An accident involving radioactive contamination occurring during a period of political tension could serve as a spark for political unrest.

Conclusion

Although Russia may be able to proceed with the initial steps of constructing additional storage capacity on the basis of expected income from non-obligated fuel, unlocking the full potential of the spent fuel storage market will require cooperation with the USA. If past experience is any guide, this is likely to be a highly complex process. Although the eventual outcome is far from clear, what is certain is that the negotiation of a nuclear cooperation agreement between the United States and Russia will be only a first step in the long process of realizing plans for importation of foreign spent nuclear fuel into the Russian Federation for storage and/or reprocessing.

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Negotiating Climate Change: The Search for Joint Risk Management

Gunnar Sjöstedt

Introduction

That human activities play a role in climate warming is well known worldwide. It is the subject of global public opinion building and debate, intergovernmental decision making, and international negotiation. The widely shared concern about this issue is due to the negative, often catastrophic, consequences that are expected to result from climate warming. Atmospheric temperature increases may certainly improve living conditions for people in some parts of the world—for example, improving growing conditions for certain crops in some areas of northern Scandinavia. However, many more people are expected to be affected by climate-driven disasters. Rising water levels will, for example, put large areas of land under water; redistribution of precipitation will increase the likelihood of serious floods in some parts of the world and of more severe droughts in others; or there will be a growing frequency of storms and hurricanes. The secondary effects of such changes in weather conditions will be decreasing harvests and increasing health problems.

The expected costs of climate warming include the loss of human life and the extinction of many species, not to mention the loss of economic resources in the form of destroyed homes or crops and, in some extreme cases, the destruction of whole nations, such as the Pacific island states if they succumb to rising sea levels. Developing countries are particularly vulnerable to the catastrophic consequences of climate warming. Their predicament can be illustrated by the case of Egypt—a good example, as it is not a "worst-case scenario" (Egyptian Ministry of Environment, 1999). Among developing countries Egypt is a medium power—and in some cases a great power—but in spite of its relatively large resources, it will have great difficulties in coping with climate warming. The concentration of Egypt's large population in the Nile valley and the delta land on the Mediterranean coast makes the country

Gunnar Sjöstedt
Swedish Institute of International Affairs, Stockholm, Sweden, e-mail: Gunnar.Sjostedt@ui.se

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highly vulnerable to some of the effects of climate change. Several sectors of society and the economy are under serious threat, including agriculture (especially the cultivation of wheat and maize), fisheries, water resources, human habitat, and human health. If precipitation decreases in the upstream areas around the sources of the Nile and along the descending river, the consequences for downstream freshwater resources in Egypt will be severe. The volume of available fresh water will be significantly reduced and the quality of the water supplies will deteriorate in a country where a rising population is itself causing increasingly serious problems in terms of water supply. Diminishing wheat and maize harvests will increase the need to import food and thus put pressure on the national economy. If, as expected, the water level in the east of the Mediterranean Sea increases by 0.5–1.0 m the consequences for the delta land around Alexandria will be disastrous. If no effective adaptation measures are carried out, 30 percent of cultivated land will become inundated, two million people will become homeless, and almost 200,000 jobs will be lost. In the Red Sea a long-term effect of climate warming will be serious disturbances in some ecosystems, such as the destruction of coral reefs.

Various national and international activities have been initiated to reduce the expected negative consequences of climate change. Adaptation to a world with a warmer atmosphere has been discussed and started. However, one of the main strategies of the global negotiations in the United Nations (UN) to date has been to reduce emissions of greenhouse gases into the atmosphere. A multitude of concrete measures can be undertaken at the national or subnational level to achieve that objective. Emissions of carbon dioxide (CO_2) and other greenhouse gases have many sources in a developed society, for example, the transport of goods and people, heating of buildings, industrial processes, agriculture, or deforestation (Gupta, 2001). The processes by which decisions have been made to permit such mitigation measures to be undertaken have become considerably interlinked in recent years and are closely associated with the multilateral negotiations on climate change that have been going on since the 1980s. These international climate talks are presently focused on the implementation of the 1997 Kyoto Protocol and its extension beyond the year 2012, which has become an increasingly contentious process (Grubb et al., 1999).

At the time of its signature in 1997 the Kyoto Protocol to the 1992 United Nations Framework Convention on Climate Change (UNFCCC) was widely considered to be a successful outcome of the climate talks. It contains binding and costly commitments by a large number of negotiating parties to reduce emissions of CO_2 and other greenhouse gases into the atmosphere. On closer inspection, however, these "concessions" were not particularly damaging for any signatory nation. The Kyoto Protocol was only "a good beginning" to a long-term process of regime building. The Kyoto Protocol was not designed to become a final solution to the problem of climate warming but was meant rather as a platform for continued and increasingly more demanding future negotiations. The international scientific community assessed that the agreed reductions in the emissions of greenhouse gases would have only a limited, and quite inadequate, impact on how climate warming would affect human living conditions. The schedules of reduction for the European Union (EU), the United States of America (USA), and Japan were only 8, 7, and 6 percent,

respectively (Sjöstedt, 1998). Developing countries were exempt from the binding commitments in the Kyoto Protocol. Scientists of the Intergovernmental Panel on Climate Change (IPCC) claimed that to be effective in stopping climate warming, emissions of greenhouse gases would have to be reduced by in the region of at least 60–70 percent, which would require the participation of all countries of the world (Houghton, 1990). From this point of view, the negotiated outcome of the Kyoto Protocol was a failure. Moreover, in spite of the relatively moderate demands it makes on signatory states, the Kyoto Protocol has proved to be extremely difficult to implement, with several important countries, including Russia and the United States, delaying its ratification. Some authors believe that for regime building in the climate area to progress, the Kyoto Protocol will need to be somehow circumvented so that a new negotiation approach can be developed.

There are various reasons for the difficulties parties have in terms of achieving useful results in the international negotiation on climate change. One explanation, often referred to in the discussion about the climate negotiation, is the obstruction of the United States and the lack of political will on the part of other oil-dependent states. However, the obstacles are not entirely of a political nature. The character of climate change as a negotiated issue is also a complication in the negotiation. This chapter will assess the proposition that because the climate issue has the character of a *risk* for negotiating parties, the climate negotiation is not only difficult to conduct but also challenging in terms of leading to a constructive, binding agreement. The mainstream international scientific community claims that the evidence is overwhelming that climate warming is occurring, but this is not a certainty. What the negative effects of climate warming might be, once it does occur, are still more uncertain, as is the effectiveness of the countermeasures considered in the international climate negotiation. Consequently, negotiation parties tend to have "a negative perception of the immediate outcome" of the negotiation (Sjöstedt, 1993a,b). To cope with climate warming, parties have to accept large costs in the short term (for example, costs associated with emission reductions) that are both certain and hurting in order to obtain uncertain and comparatively diffuse benefits that will accrue only in the long term with the halting of climate warming. This risk dilemma creates a cumbersome situation for policymakers and negotiators at the table when they try to explain the value of a negotiated agreement.

This chapter analyzes how the risk character of the climate issue conditions the way it is addressed and coped with in the climate talks. The point of departure for the analysis is the 1997 Kyoto Protocol, which represents an important intermediary outcome of the negotiation on climate change that started formally with the establishment of the IPCC in 1998. The continuation of the climate talks after 1997 has retained a strong focus on the Kyoto Protocol because of the political and technical problems that have occurred in the implementation process. The Kyoto Protocol can be regarded from different perspectives, for example, as a formal international treaty or as a building block in an emerging international climate regime. It may also be conceived of as an approach to risk management regarding climate warming. This perspective is embraced by the analysis in the current chapter.

The principal question raised here is how the 190-odd governments participating in the climate talks jointly addressed the risk dimensions of the climate issue when they successfully negotiated the Kyoto Protocol. Three sets of questions are at the forefront of the analysis:

1. How were the *risk perceptions* of individual negotiating parties harmonized in the climate talks? What approaches and institutions were used in the process to achieve coordination of risk perceptions?
2. How did *risk communication* function in the negotiation? What problems emerged that were associated with the difficulty of communicating the meaning, seriousness, and urgency of a risk from one negotiation party to another? What approaches and institutions were used in the process to keep risk communication effective?
3. How did negotiating parties in the climate talks collectively *assess risks*? What assessment approaches were used, by whom, and in what institutions?

History of the Climate Talks

Discussions about the problem of climate warming started in the international scientific community in the first half of the 1980s.[1] These talks developed into an increasingly structured process. In 1988 the World Meteorological Organization (WMO) and United Nations Environmental Program (UNEP) created the IPCC (Skodvin, 1999), which can be described as a task force with a strong representation from the international scientific community. One of the assignments of the IPCC was to assess the problem of climate change: its causes and its effects, as well as its possible repercussions. Another task was to propose approaches and methods to cope with climate warming. The work of the IPCC remains organized into three working panels (WPs). WP I assesses the scientific aspects of the climate system, with a particular focus on the causes of climate change. WP II evaluates the vulnerability of natural and socioeconomic systems to climate change and identifies options for adaptation to climate warming. In the Kyoto negotiations, WP III developed mitigation methods (Skodvin, 1999).

The IPCC presented its first comprehensive evaluation in 1990, and this served as a frame of reference for the Intergovernmental Negotiating Committee (INC) set up within the UN system the same year (Houghton, 1990). The negotiation work carried out in this new institution resulted in the UN Framework Convention on Climate Change which was adopted at the UN Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992 (Spector et al., 1994).

[1] Governments had supported programs aiming at changing the weather conditions earlier than the 1980s but these projects had nothing to do with climate warming. One objective was to create artificial clouds that could hide military operations and another was to generate more precipitation in an agricultural region.

The Framework Convention was structured in line with the standard conception of an international regime consisting of evolving *rules, norms, principles*, and *procedures* (Krasner, 1983).[2] The UNFCCC expresses the principal aim of stabilizing concentrations of greenhouse gases in the atmosphere "at safe levels." The Framework Convention refers to a number of guiding norms such as *justice, common responsibility*, and *the precautionary norm*. The knowledge and current information about the climate problem gathered in IPCC reports represent consensual knowledge and regime *principles* (Houghton, 1990). The institutions in which the climate talks unfold, notably IPCC, INC, and UNCED, and their respective working methods, exhibit significant regime *procedures*.

The UNFCCC includes a formula that distinguishes between groups of countries with regard to the quality of their expected obligations in the emerging climate regime. Annex I to the Kyoto Protocol comprises developed countries with a primary responsibility for climate warming because of their historically large emissions of greenhouse gases. Developed countries that agree to give financial support to developing countries in the area of climate warming are included in Annex II. All other countries have the right to abstain from commitments to reduce emissions of greenhouse gases. This category embraces more or less most developing countries.

The UNFCCC came into force in 1994, triggering the first Conference of the Parties (COP 1) in Berlin the following year. This meeting established the Ad Hoc Group on the Berlin Mandate (AGBM) to implement a plan of action to strengthen the commitments of Annex 1 countries to reducing their emissions of greenhouse gases and to extend UNFCCC beyond the year 2000. COP 2 in Geneva (1996) continued the negotiation work, and formally binding commitments relating to emission cuts were instituted, thus paving the way for COP 3 in Kyoto in 1997. The Kyoto Protocol is a development of UNFCCC. It contains binding commitments to reduce emissions into the atmosphere of CO_2 and other greenhouse gases for 38 industrialized countries, of which 11 are located in Eastern or Central Europe.

After Kyoto a row of COP meetings have taken place to support the implementation of the 1997 Kyoto Protocol. One of the main purposes of the meetings has been to confirm the political commitments made in Kyoto. This objective was highlighted in the two-year Buenos Aires Action Plan, which was established at COP 4 in Argentina in 1998 (Grubb et al., 1999). Implementation efforts continued at COP 5 in Bonn the following year in a positive spirit (Grubb and Yamin, 2001). The post-negotiations on the Kyoto Protocol were meant to be completed at COP 6 in The Hague, which took place in the year 2000. However, instead of becoming a success, COP 6 and its second session in Bonn (COP 6b in 2001) developed into a very difficult negotiation primarily between two large coalitions: on one side the EU and supporting developing countries and on the other the so-called umbrella group, a loose coalition of industrialized countries led by the United States which opposed

[2] *Rules* are formal binding commitments of signatory states. *Norms* are guidelines for action that are not necessarily formalized in international law but which are internalized in many actors participating in the negotiation. *Principles* represent consensual knowledge about the negotiated issues that is shared by many actors participating in the negotiation. *Procedures* are practical arrangements supporting the negotiation.

the full implementation of the Kyoto Protocol. In March 2001 the new Bush administration declared that it did not intend either to ratify the Protocol or to live up to the commitments that the USA had accepted in this agreement. The U.S. position was a major blow to the implementation of the Kyoto Protocol, whose value decreased considerably without U.S. participation. Still, the implementation process continued in the Conference of the Parties to the UNFCCC. At COP 6b in Bonn in 2001, a political accord was reached on all hitherto unresolved issues. Later the same year at COP 7 in Marrakech, those negotiating parties who were still active in the implementation process accepted a formal and binding legal text containing the agreement concluded in Bonn (Marrakech Agreement, 2001) (Sheridan, 2001). COP meetings after Marrakech have essentially supervised the ongoing implementation of the Kyoto Protocol and have also addressed the planned post-Kyoto negotiations on the further development of the climate regime.

Process Developments

The negotiations on climate change, begun in the middle years of the 1980s, are still going on and will continue in the future. According to the action plan agreed upon in Bali in 2007, an extension of the Kyoto Protocol should be accomplished at the COP meeting scheduled to take place in Copenhagen in 2009. The climate talks have in many ways unfolded in a pattern that is typical of multilateral negotiation, particularly when the agenda is complex and the issues are technically difficult to cope with "at the table."

The main stages of multilateral talks have already been discussed in the Introduction to this book and are summarized in Table 1, which relates different kinds of negotiation activities to different kinds of intermediate outcomes.

Table 1. General process development of a multilateral negotiation

Process Stage	Outcome
Pre-negotiation	Decision to negotiate
Agenda setting/issue clarification	Plan for negotiation
Search for negotiation formulas	Discourse, approaches, and methods
Negotiation on detail	Single negotiation text
Agreement	Decision on negotiated accord
Post-negotiation	Coping with implementation problems

Successful *pre-negotiation* leads to an agreement to start negotiation on a certain topic or on a specified basket of several or many topics. General objectives are established for the negotiation.

In *agenda setting*, parties determine more precisely what topics are going to be negotiated and they usually clarify how these topics are to be framed in the

negotiation. The establishment of an organization for the negotiation often accompanies the agenda setting.

Parties *search for negotiation formulas* to find a useful approach to reaching an agreement that coincides with their interests. In the pre-Kyoto climate talks, *reduction of emissions of greenhouse gases* was a basic formula for addressing climate warming.

Parties begin *to negotiate on detail* when they apply negotiation formulas to construct a concrete, final agreement. Typically, parties exchange concessions at this stage of the process so as to establish a single negotiation text that may have the character of a detailed draft treaty.

Agreement is a formal, collective decision by a "critical mass" of negotiation parties to accept a final negotiation text.[3]

Post-negotiation is continued negotiation for the purpose of coping with various issues and problems that have emerged in connection with the implementation of the negotiated agreement.

All these stages are clearly discernible in the pre-Kyoto negotiation. However, the climate talks also display some special features that can be highlighted with the help of comparison using a reference case: the trade negotiations in the General Agreement on Tariffs and Trade/World Trade Organization (GATT/WTO).[4] It is relevant to consider the idiosyncrasies of the climate talks in the context of an analysis of negotiated risks in the trade talks.

In GATT/WTO, *pre-negotiation* to the trade rounds has been a fairly straightforward political process involving the most influential parties to the negotiation, and notably the EU, Japan, and the USA. For example, in the pre-negotiation for the Tokyo Round (1973–1979) the USA put great pressure on the EU and Japan to convince these two great trading entities that new multilateral trade negotiations were necessary. After "The Big Three" had reached agreement about a new GATT round, other smaller trading nations were invited to take part in the decision making. Hence, a political platform was established for agenda setting and other stages of the negotiation process that would follow pre-negotiation.

In the climate talks *pre-negotiation* was of a quite different character. It originated in discussions in the international scientific community, particularly in a broad international epistemic community centered on the WMO and UNEP.[5] The decision to start formal negotiation on climate warming was ultimately controlled by participating governments, just as in the GATT rounds. However, the WMO and UNEP were not only important actors in the pre-negotiation but also representatives of the world scientific community. The establishment of the IPCC in 1988 created a highly instrumental organization for the sustained and effective participation of scientists when pre-negotiation was transformed into *agenda setting with issue clarification*.

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[3] "Critical mass" is unsatisfactory as an analytical concept but may serve as a useful metaphor. Critical mass represents roughly a winning coalition in a particular situation.

[4] Recall that as a result of the Uruguay Round (1986–1994) the General Agreement on Tariffs and Trade (GATT) was transformed into the World Trade Organization (WTO).

[5] For a presentation of the meaning and role of *epistemic community* see Haas, E. (1990); Haas, P. (1990).

Most national governments remained strongly, or even entirely, dependent on the reports from IPCC for formulating aims and taking positions on the climate issue. Scientists and IPCC had a strong influence on the decisions taken by national governments and their representatives in agenda setting.

In the GATT rounds agenda setting was also a comparatively open stage of the negotiation, with access being given to more non-governmental representatives or experts than in other process stages. Nonetheless, there was a stark difference between the trade negotiations and the climate talks. In GATT the general policy was to restrict and control the participation of non-governmental representatives as far as possible. When, for example, a number of international organizations were given access to the agenda-setting phase of the Uruguay Round (1986–1994) they were invited to participate only in a particular meeting. These organizational representatives were essentially asked to provide certain information that negotiation parties needed in the GATT round. For example, the World Intellectual Property Organization (WIPO) was solicited to inform negotiating parties in the Uruguay Round about its tasks and activities in the area of intellectual property rights, which was now becoming a new trade issue in GATT. In contrast with the climate talks, governments had strict control of all initiatives that were taken and all proposals that were made when the agenda was set.

In the GATT context *negotiation on a formula* was a purely political struggle between especially strong countries. Leading parties like the EU or USA worked out proposals for a formula that corresponded to their particular interests. For example, in the tariff negotiation of the Tokyo Round (1973–1979) the EU opposed the formula of the linear, "across-the-board" cuts proposed by Washington because the USA had a much more uneven external tariff wall with "higher summits" and "deeper valleys" than the EU. The EU tabled a proposal for a negotiation principle that combined the proposal for linear cuts with a formula for the harmonization of tariff walls before these reductions were made. Eventually, a compromise was reached between the EU and the USA defining the formula that was actually used in the tariff negotiations.

The pattern that unfolded in the climate talks was different. The influence of the IPCC continued from *agenda setting* into *negotiation on formula*, although the grip that national delegations had of the process was strengthened. Delegations made the necessary choices, but their decisions were considerably conditioned by the information given by the IPCC. For example, it was a political decision to focus the Kyoto Protocol negotiations on greenhouse gas emissions. However, this approach was an almost inevitable consequence of the analysis of the problem of climate warming made by IPCC scientists.

The further the process developed from *pre-negotiation* toward agreement, the less significant the differences between the trade negotiations and the climate talks became. This evolution was particularly discernible in *negotiation on detail*. In both trade and climate talks negotiation had attained the character of bargaining on a single negotiation text, a kind of "editing diplomacy" (Spector et al., 1994). *Negotiation on detail* also meant the exchange of concessions in a bargaining game regarding highly specified stakes similar to tariff cuts in the GATT and emission

reductions in the negotiation on climate change. Both tariffs and emissions could be expressed in quantitative terms (percentages) to simplify the presentation of offers and requests and to facilitate compromise and creative deals. Policymakers and diplomats were fully in control of negotiation on detail, both in the trade and the climate talks.

Agreement generated activities with a *post-negotiation* character in both the climate and the trade negotiations. This pattern is particularly visible in the multilateral trade negotiations that have been going on since the 1950s.[6] Each large GATT round led not only to a successful outcome but also to *post-negotiation* activities that transformed into *pre-negotiation* for an ensuing round. Presently, the first multilateral trade negotiation under the World Trade Organization (Doha Round) is still going on. There were considerable forward linkages from the last negotiations under GATT, the Uruguay Round (1986–1994), to the Doha Round, and these were addressed in *post-negotiation* which evolved into *pre-negotiation*.

In the climate talks, the meetings of the Conference of the Parties (COP) dealt with post-negotiation issues following the signature of the 1997 Kyoto Protocol. It is likely that some of these topics will be on the agenda when new post-Kyoto negotiations are initiated. *Post-negotiation* in GATT and in the climate talks hence have certain common features. However, there are stark differences too. In GATT the development from *post-negotiation* to *pre-negotiation* can be described as *forward-looking*. The movement from the Kennedy Round (1964–1967) to the Tokyo Round (1973–1979) is a good case in point. Compared with earlier tariff negotiations in GATT, the Kennedy Round was extremely successful with "across-the-board" tariff cuts of around 40 percent on a broad range of industrial products in countries of the Organisation for Economic Co-operation and Development (OECD). As a result of this movement toward trade liberalization the use of non-tariff barriers to trade increased noticeably in OECD countries soon after the conclusion of the Kennedy negotiations. Post-negotiation in the form of study groups in, for example, GATT and OECD addressing this emerging problem of neo-protectionism soon changed into pre-negotiation for what would later become the Tokyo Round (1973–1979). The continuity from the Kennedy Round to the Tokyo Round was *forward-looking* because the strategy that negotiating parties chose to cope with neo-protectionism was not that of consolidating the agreement reached (the Kennedy Round) but rather of paving the way for a new round of trade liberalization (the Tokyo Round).

In contrast, post-negotiation following the signature of the Kyoto Protocol essentially has a backward-looking perspective. Discussions in post-negotiation have to a large extent concerned the problems of implementing the commitments that signatory states have already made in the Kyoto Protocol. A comprehensive platform for new post-Kyoto negotiation is being partly negotiated outside the post-negotiation pertaining to the Kyoto Protocol.

[6] The large multilateral trade negotiations under GATT were the Kennedy Round (1964–1967), Tokyo Round (1973–1979), and the Uruguay Round (1986–1994).

Risk Management

The general aim of the negotiation on climate change has been to develop an approach to cope with this vast, complex, and increasingly serious problem. The two pillars of this approach are the 1992 UNFCCC and its 1997 Kyoto Protocol. These two agreements may be regarded in different ways, for instance, as two international treaties or as two stages of the same unfolding regime-building process. The climate talks and their outcome may also be conceived of as an approach to, or strategy of, *risk management*. This direction is not spelled out explicitly in the legal texts formally specifying the outcome of the pre-Kyoto negotiations. Nor is risk management part of the discourse that has been developed in the climate talks for describing process developments or outcomes. Still, a focused risk perspective is meaningful not only as regards the climate negotiation as a process but also as regards its outcome, even if only a rough assessment is attainable in these terms.

The negotiated outcome of the pre-Kyoto negotiation represents one of the main risk management strategies; this may be referred to as *mitigation*, if reference is made to the discourse that has been developed in the climate talks themselves. Mitigation means that the focus is on one particular dimension of the climate risk, namely, climate warming (*emission risks*) instead of its possible disastrous consequences (*warming risks*). Recall that climate risk has three principal dimensions: 1) the risk that emissions of greenhouse gases will cause climate warming (*emission risks*); 2) the risk that climate warming will lead to unbearable negative consequences (*warming risks*); and 3) the risk that costly measures to cope with climate warming or their negative consequences will prove to be ineffectual (*mitigation risks*).

The immediate principal objective of the Kyoto Protocol is thus to reduce the risk that the average atmospheric temperatures will increase because of sustained or growing concentrations of greenhouse gases. In turn, this will lessen the risk of various natural disasters that are associated with climate warming, but this is a secondary effect of the measures specified in the Kyoto Protocol.

The central part of the Kyoto Protocol contains binding rules—formal commitments—to reduce the emissions of six greenhouse gases: carbon dioxide, methane, dihydrogenoxide, fluorinehydrocarbon, perfluorinehydrocarbon, and sulfurhexafluoride (Grubb et al., 1999). The Kyoto Protocol particularly targets emissions of CO_2, the most important greenhouse gas causing climate warming. The aim is to attain reduction of the 1990 emissions of CO_2 into the atmosphere by 5.2 percent in the period 2008–2012. Signatories to the Kyoto Protocol may use various methods to reduce greenhouse gas emissions and ultimately to stabilize concentrations of greenhouse gases in the atmosphere. The large number of technical options is due to the many ways in which greenhouse gases may be emitted into the atmosphere.

The Kyoto Protocol specifies a number of special measures that Annex 1 countries may undertake to facilitate the implementation of emission cutbacks. Expressed in terms of the climate regime discourse, these measures are called *flexible mechanisms*, as follows. *Trade in emission permits* allows a country (ultimately, a

particular company) to sell part of its quota of permitted emissions of greenhouse gases to another country (ultimately, another company). *Joint implementation* permits a state to take measures in other countries to decrease emissions of greenhouse gases. The *mechanism for clean development* is a program to help developing countries promote sustainable development while achieving the objectives of the UNFCCC and its Kyoto Protocol.

The Kyoto Protocol distinguishes three groups of countries with regard to their respective obligations under the Convention. The group of *Annex 1 countries* has accepted binding commitments to reduce greenhouse gas emissions. This group includes the member states of the OECD and Belarus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russia, Slovakia, Turkey, and Ukraine. The negotiations resulted in differing percentage cuts for different Annex 1 countries, for example, Russia 0 percent, Japan 6 percent, the USA 7 percent and the EU 8 percent. Within the EU, differences were even larger. Some countries obtained a right to increase their emissions (e.g., Portugal) whereas others have accepted reductions larger than 30 percent (e.g., Denmark).

Some of the Annex 1 countries were also included in Annex II of the Kyoto Protocol. The states in this group have undertaken to provide assistance to developing countries to enable them to undertake measures in line with the international climate policy spelled out in the UNFCCC and the Kyoto Protocol.

Developing countries are the third category of nations, which is totally exempt from binding commitments according to the Kyoto Protocol.

Adaptation to the negative effects of climate warming, if they occur, is a risk management strategy that, to date, has competed unsuccessfully with the mitigation strategy inherent in the Kyoto Protocol. In a risk management perspective, the differences between a strategy based on *mitigation* and one based on *adaptation* are stark and important. For the sake of illustration, take the case of recurrent inundations in a river system due to higher rainfalls than in the past that scientists believe to be caused by climate warming. Under a pure mitigation strategy nothing is done with regard to the river. The *mitigation* approach is to reduce emissions of greenhouse gases into the atmosphere. In contrast, *adaptation* represents measures to ease the effects of expected inundations when they actually occur. For example, government regulations may prohibit the construction of buildings in sensitive areas along the river, or insurance companies may introduce higher premiums for household insurance if an insured building is situated close to the river. Measures may also be taken to increase the capacity of the river system to either process larger volumes of water (e.g., dredging of the river bed) or store them in dams when the rainfall comes.

Risk management by means of *mitigation* hence strives to phase out the climate risk by eliminating its causes, something that can only be achieved in the longer term which, in the case of climate warming, is a matter of decades. The effects of an adaptation strategy would be completely different. Once adaptation measures have been undertaken (e.g., increasing the process or storage capacity of a river) or properly planned (e.g., preparedness for evacuation in the case of inundation) they can be activated as needed. In that sense, an adaptation strategy has a very short time horizon and can be thought of as a kind of crisis management approach.

The weakness of adaptation is, of course, that it only addresses the symptoms of the climate problem and has no effect on its causes. The new dams that have been constructed in a river under threat of inundation may prevent immediate flooding, but the dams in the river will not help prevent the recurrence of heavy rainfalls in the future.

The choice of a risk management strategy in the climate regime is an important bone of contention among signatory states, even though the Kyoto Protocol so clearly exhibits the mitigation approach. The reason is that industrialized countries in the OECD have tended to strongly favor mitigation over adaptation. For the OECD member states the principal objective of a climate regime should be to solve the problem of climate warming—something that adaptation measures cannot do. Many developing countries have favored an adaptation strategy because they have different concerns and priorities than industrialized countries. Generally speaking, developing countries are much more vulnerable to many of the potential effects of climate warming, such as drought, flooding, or hurricanes. They also have much more limited resources to deal with natural catastrophes than industrialized countries.

To date, the conflict on an appropriate strategy for risk management has not particularly disturbed the international negotiation on climate change because OECD countries have been so dominant. This situation is, however, likely to change at the post-Kyoto negotiation stage when developing countries can be expected to play a considerably more active role than in the past. The 2007 Bali Action Plan identifies adaptation as a principal area of concern.

The Handling of Risks in the Process

In their interaction at the negotiation table leading to the Kyoto Protocol, parties to the climate talks had to consider, or were influenced by, three basic risk dimensions of the climate issue, namely, *risks of emissions, warming*, and *mitigation*. Individual actors perceived the climate problem before assessing it or took action to cope with it. Joint decision making or international action in the climate area required policymakers and their negotiators at the table to perceive the problem of climate warming in essentially the same way. To attain such mutual comprehension, politicians and diplomats drawn into the climate talks needed to communicate among themselves and also with experts and scientists from different disciplines. Such exchanges would be impeded if risk perceptions differed too much and particularly if parties were not fully aware of it. Furthermore, agreement on costly measures (e.g., emission reductions) would be obstructed if negotiation parties made assessments of the climate risk that were too dissimilar.

In reality, it may be difficult—or impossible—to make clear-cut distinctions between activities representing the harmonization of risk perceptions, risk communication, and risk assessment. Harmonization of perceptions as well as joint assessment requires inter-party communication. The way parties assess the climate risk

are likely to influence how they perceive it. Likewise, risk perceptions are likely to condition assessment. Nevertheless, for analytical purposes it is useful to maintain a distinction between the perception, assessment, and communication of risks.

Harmonization of Risk Perceptions

The positions that a democratic nation takes in an international negotiation are usually more strongly controlled by its government and government agencies than when policy choices are made in domestic policy areas (Goldmann et al., 1986).[7] Agreements reached in international talks eventually have to be approved by the country's parliament, notably by ratification of an international agreement (such as the Kyoto Protocol). Parliaments may have some mechanism for monitoring a negotiation process, particularly if it unfolds in the UN or another international organization.[8] Nevertheless, the room for maneuver of governments and their negotiators at the table in international negotiation is comparatively large. Understanding and assessing climate risks are no exceptions. However, this room for maneuver has a limit. Risk perceptions regarding the climate issue may differ between a government and the general public—its political constituency—but only up to a point and not in the long term.

During the negotiations relating to the UNFCCC in 1992 and the Kyoto Protocol in 1997 there was generally a "permissive consensus" in the political constituencies of the governments of the OECD countries concerning the unfolding international climate policy and the global regime it was forging.[9] Both national and international lobbying organizations were arguing for swift policy measures and the creation of a strong climate regime (Newell, 2000). However, most of the general public in the OECD countries were neither particularly engaged in the climate question nor opposed to the cautious climate policies that their governments were developing at the national and international levels (Fermann, 1997; Newell, 2000). In the pre-Kyoto situation some policy measures implemented to reduce emissions of greenhouse gases also had other objectives, for example, to increase energy efficiency (OECD, 2004; Barton, 2004). This "multiple-goal syndrome" helped governments to defend costly policy measures and thus improve the prospect for a *permissive consensus* concerning climate policy.[10] This condition was without doubt an important prerequisite for the relative success of the Kyoto Protocol negotiation. However, perceptions of climate risks will doubtless continue to change because they depend on a

[7] The difference is obviously smaller in undemocratic states, but even there the government (the autocrat) may have a freer hand in foreign policy than in domestic policies (Beasley, 2002).

[8] One example would be that parliamentarians are included in the national delegation sent to an international negotiation (Hyltenius, 1989).

[9] Recall that although the climate talks were truely global in nature, the negotiation about emission cuts in the Kyoto Protocol was dominated by the OECD countries.

[10] For a penetrating analysis of *permissive consensus* as a condition for advanced international cooperation see Lindberg and Scheingold (1970).

dynamic process of knowledge and image building that unfolds in the context of the climate negotiation itself (Andresen, 2000). Changing perceptions may, but need not, have a favorable effect on the climate negotiation. The "permissive consensus" of the general public in key countries may become sustained or reinforced, but there is also a possibility that it may weaken in the post-Kyoto situation.

Changing people's perceptions of climate risks is a complex process. Generally speaking, perceptions of climate risks have at least four different elements that interact and also overlap to some extent; *information, knowledge, awareness*, and *evaluation*.

There needs to be basic *information* about a phenomenon before a perception of it can be formed. In the simplest case this information may be nothing more than an image captured by an individual's eyes. However, phenomena that cannot actually be seen, like climate risks, can nevertheless be perceived. In such a case, information about a given phenomenon is communicated to the individual in another way, such as verbally or in the form of written reports from sources such as governments and their agencies, news media, or non-governmental organizations. As a result of this information, a perception can be formed.

Knowledge is high-quality information made available in, for example, scientific publications. It generates awareness of the complex problem area of climate change and promotes understanding of it. Usually, knowledge is produced, framed, and organized in such a way that it becomes more complex than a simple record of facts. For example, facts as knowledge may be structured as interacting factors and the relationship between them may be suggested and explained (*emissions* cause *warming*; *warming* causes *natural disasters*; *natural disasters* cause *health problems and death*).

Awareness is the consciousness on the part of individuals or groups that there is a phenomenon called climate warming and that it needs to be addressed in national and international policies. Awareness implies knowledge and the understanding of the need to act—to try to cope with a problem like climate warming (Friman, 2001; Clark, 2002).

Information, knowledge, and awareness may introduce a process of *evaluation* into the perception of a phenomenon in different ways. Thus, changing perceptions of the climate risks may be associated with more or less and better or worse *information* or *knowledge*. They may reflect more or less *awareness* of climate warming and its consequences, and they may also represent an altered basic *evaluation* of the importance of the climate problem.

Four interacting clusters of risk perceptions can be discerned in any study of the climate negotiation in terms of the basic distinctions needing to be made in how policymakers and their negotiators perceive the risks of climate change as compared with their constituencies. Four different scenarios need to be considered:

Scenario I (shared indifference): Neither policymakers nor their constituencies perceive climate risks as significant and as requiring special policy measures to cope with climate warming.

Scenario II (top-down awareness): Policymakers perceive risks as high and requiring costly policy action, while their constituencies, or some of them, see them as low and oppose such policies.

Scenario III (bottom-up awareness): Policymakers perceive risks as low while their constituencies see them as high and call for effective policy measures.

Scenario IV (shared alarm): Both policymakers and their constituencies perceive risks as high and call for immediate and effective policy measures. A good illustration of *shared alarm* is seen in the events following the disastrous accident in a Chernobyl nuclear reactor in May 1986. In Western Europe both policymakers and the general public reacted very strongly. For years ineffective negotiations on nuclear safety had been going on in the International Atomic Energy Agency (IAEA). After Chernobyl, negotiations accelerated dramatically—an international treaty was signed within only a few months at the end of 1986 (Sjöstedt, 1993a,b). As a consequence of the Chernobyl catastrophe the anti-nuclear movement grew and became much more assertive in many European countries. For example, in Sweden the government was forced to organize a referendum on the future of the domestic nuclear industry, which, in turn, led to a governmental decision to gradually close down all nuclear reactors in the country (Setälä, 1999).

There are indications of all four scenarios at different stages of the climate talks as they developed before the signature of the Kyoto Protocol. *Shared indifference* clearly characterized the situation until pre-negotiations got under way in the mid-1980s. Earlier discussions about climate warming and its possible global consequences were essentially confined to the scientific community (Hess, 1974; Andresen, 2000). Pre-negotiation brought a gradual transition from *shared indifference* to *top-down awareness*, a development that was largely due to the work processes and reports from the IPCC around 1990 (Houghton, 1990). In the later stages of the negotiation for the 1997 Kyoto Protocol, *bottom-up-awareness* became of increasing significance in some countries with strong environmental lobbying groups. In other countries and islands with lowland coastal zones like Bangladesh and a number of Pacific island states there has been a movement towards *shared alarm* (Warrick and Ahmad, 1996; Sündermann and Lenz, 2001). However, as these countries are weak players in the negotiation, it would be impossible for their outlook on climate risks to color the overall process.

For the main part of the pre-Kyoto negotiation the *top-down scenario* was clearly dominant and characterized the whole process. In this respect the climate talks were distinctly different from the negotiations on nuclear safety and assistance after Chernobyl. *Risks of warming* in the form of, for example, storms, flooding, or drought were certainly part of the overall picture of the climate risks perceived by the climate talks parties. But the pre-Kyoto negotiation was driven more by scientific analysis than opinion building.

The risk perceptions of policymakers and their constituencies in the climate negotiation have been strongly influenced by experts/scientists, and governments have also been guided by the negotiators they have sent to the negotiation tables. The particular significance attached to scientists and negotiators results from the complex

way in which the national climate policies of the OECD countries have been developed (OECD, 1999). The climate talks have a number of special features. In a typical multilateral negotiation like the trade talks in GATT/WTO, the relationship between domestic policy and the negotiating position taken in international talks is essentially straightforward and simple—policy pursued internationally is formed in national institutions reflecting domestic interests and concerns. The national policy is the basis for a general negotiation approach or strategy, which guides the country's search for specific negotiation positions (Hody, 1996).

As compared to the trade talks in GATT, climate policies in OECD countries were developed quite differently in the time period before the Kyoto Protocol was signed. When the OECD countries initially became engaged in the pre-negotiation for the climate talks they only had a rudimentary climate policy and limited possibilities for developing it further on their own. Although policymakers in many countries had a general awareness of the risks of climate warming, their knowledge and understanding of it was still quite limited and clearly insufficient to serve as a basis for nuanced policy choices. Thus, most governments seemed to have but a vague idea about what their special interests in the negotiation might be.

These circumstances made issue clarification a critical negotiation function at the pre-negotiation and agenda-setting phases. Climate policies unfolded within the complex interaction between the national and the international levels of policymaking. Most governments were dependent on the analytical work performed and on the information provided by the IPCC, as well as in the climate negotiation generally, to attain a sufficiently thorough and comprehensive understanding of the climate problem. National policy processes steered the international negotiation, but at the same time this process was an important determinant of national climate policies (Sjöstedt, 1998). Senior negotiators at the table, as well as senior scientists engaged in the climate negotiation, attained their special importance because of their role as gatekeepers at the interface of the national and the international level of policymaking. Negotiators at the table (diplomats) were important advice givers to their respective governments, as they functioned more or less as representatives of the negotiation process. Scientists were still more important "interface players," as they were crucial sources of the required knowledge and information concerning climate warming, its consequences, and the appropriate approaches and methods needed to cope with it.

Coordination Mechanisms

Looking at the pre-Kyoto situation from a post-Kyoto perspective it may be quite surprising to some observers that differing risk perceptions regarding climate warming were not a major obstacle in the negotiation. On the contrary, harmonization of the various perceptions of climate risks served as a driver in the negotiation. Much of the explanation for this is to be found in the role that consensual knowledge played in the climate talks. *Consensual knowledge* has been defined as a body of

beliefs about causes–effects and means–ends relationships among variables (e.g., activities, aspirations, values, demands) accepted by a community of actors (e.g., participants in a multilateral negotiation), irrespective of the absolute truth of these beliefs (Rothstein, 1984; Haas, E., 1990; Haas, P., 1990). Consensus rests on an agreement among the parties involved. This is of particular significance in a negotiation. A common understanding of negotiated issues is a prerequisite for the effective development of the negotiation beyond the process stage of agenda setting (Sjöstedt, 1994).

The interests of the leading powers have usually conditioned the construction of consensual knowledge in multilateral negotiation. A case in point is the establishment of *trade in services* as a new issue on the agenda of the Uruguay Round of multilateral trade negotiations in GATT (1986–1994) (Croome, 1999). Initially, the issue of services trade was driven by a few economic great powers, notably, the USA and the United Kingdom (UK) which had a strong interest in eliminating obstacles that impeded banks, insurance companies, and other companies in delivering their services in foreign countries (Mark and Helleiner, 1988; OECD, 2001).

Trade in services was a new issue not only in GATT but also in the academic literature on international trade. It is interesting to note that the construction of services trade as an issue in GATT could not unfold as an entirely administrative or political process, although this probably would have been preferable for the governments driving this issue. Issue construction required the participation of academic economists with a sufficiently good scientific record to have some authority internationally. The academic contribution was helpful, or perhaps necessary, to give services trade legitimacy as a GATT issue. The process of issue construction in GATT was embedded in a wave of new research reports addressing trade in services. In this sense representatives of the international scientific community—in this case, academic economists—participated in the process stage of agenda setting and issue clarification, as well as making a critical contribution in this regard (Aronson and Cowhey, 1984; Krommenacker, 1984; Melvin, 1989).

However, issue construction in GATT was guided very closely by the leading powers of the Uruguay Round to achieve a specific purpose: trade liberalization. Directing service trade to fall under the GATT regime had a clear tactical/strategic design, namely, to facilitate the elimination of impediments to international operations. When transboundary exchanges of services are regarded as trade they fall under the GATT/WTO regime.[11] National regulations in the service sector can then be defined as trade obstacles that have to be negotiated away (OECD, 1987).

The new issue of climate warming was constructed quite differently. This emerged in an international discussion among those in the world scientific community dealing with atmosphere changes, such as physicists and meteorologists. As some of these meetings were organized by UN institutions (e.g., WMO and UNEP), broad channels were opened between scientists and government agencies, particularly in industrialized countries. Scientific experts typically handled the liaison between international meetings and governmental institutions with the capacity

[11] Financial services could have been conceived of differently than *trade*, for example, as *financial cooperation* or *foreign investment*.

to understand scientific arguments and conclusions. This may help explain why scientists were able to generate enough awareness of the climate issue among governments of OECD countries to be able to set up the IPCC in 1988 and subsequently to begin serious negotiation on the climate issue. These events were closely associated with the development of widely shared joint perceptions of the climate risks that became drivers in the Kyoto Protocol negotiation process.

This outcome of the early discussions in the climate talks was by no means a given. A very special situation had developed with regard to the status of ongoing harmonization of risk perceptions. While scientists had communicated awareness of the risks of climate warming to policymakers in key countries, the latter had but limited knowledge of these issues (in all three categories of risks considered here: risks of emissions, warming, and mitigation, respectively).

Climate and weather have always been crucial conditions for the success of many human activities, for example, shipping, fishing, agriculture, or military operations. But until very recently, it was thought that climate was one of the immutable aspects of human existence: that humans could only hope to affect climate and weather by turning to their gods. It is only in the last decades that some governments have seriously considered the possibility of influencing climate in order to achieve political or military objectives. Initially, the aim was primarily cloud creation for military application or enhanced harvests in dry areas (Fleagle, 1969; Hess, 1974; Dennis, 1980). Before climate warming was addressed in the informal pre-negotiation of the climate talks in the early 1980s this problem area did not really exist as a negotiated issue anywhere in the extensive world system of organizations. No government had experience of or knowledge about handling the climate issue in earlier negotiations. Climate warming was essentially tabula rasa in international cooperation and conflict resolution. When the climate negotiation got under way, policymakers in most participating countries had undetermined risk perceptions regarding the problem of climate warming. They also had knowledge gaps.

When awareness of the climate risks emerged, governments and other national institutions undertook domestic measures to enhance knowledge about this problem area. With the help of IPCC a major international undertaking to accumulate and aggregate information was also combined with ambitious efforts to build knowledge (Houghton, 1990). The establishment of the IPCC was hence of crucial importance for the development of the climate talks, including the coordination of perceptions pertaining to climate warming. As an institution the IPCC was an innovation in intergovernmental negotiation (Skodvin, 1999). Participation of scientists in multilateral talks was not something new. In many multilateral negotiations after World War II, the complex issues on the agenda have required the participation of scientists either directly at the negotiation table or indirectly through their role in governments or national central agencies (e.g., negotiations on trade, environment, or disarmament) (Winham, 1986; Sjöstedt, 1993a; Gottstein, 2003). However, the IPCC was not a small committee closely subordinated to the diplomats interacting at the negotiation table. As a work process it involved hundreds of scientists from different disciplines who submitted, reviewed, and aggregated research findings pertaining

to climate change. One of its main tasks was to organize the liaison between the world scientific community and the governments and their advisors acting as negotiators in the climate talks (Skodvin, 1999). The IPCC had sufficient resources and knowledge-based authority to perform a comparatively autonomous role in the pre-Kyoto negotiation. A principal part of this endeavor was the construction of consensual knowledge concerning the issue of climate change that was acceptable both to the scientists in the IPCC and governmental representatives in the climate talks. The achievement of this task was the key to the undeniable success of the pre-Kyoto negotiation.

With a more modest role for the IPCC, construction of consensual knowledge in the climate talks would probably have been a much more distracting process. In the case of trade in services in GATT, referred to above, a large group of developing countries initially refused to accept a trade perspective on topics like banking and insurance. For this reason they opposed joint knowledge building in a trade framework in these issue areas. It is interesting to note that the tension between the OECD countries and the "dissident" developing countries also remained after the successful conclusion of the Uruguay Round in 1994. An agreement was attainable because industrialized countries were so overwhelmingly powerful in the trade negotiations.

Similar strong contentions regarding the building of consensual knowledge did not surface in the climate talks during the pre-negotiation and the agenda-setting stage in the negotiation of the Kyoto Protocol. During these phases of the negotiation, the IPCC retained a determined initiative in the processes of issue clarification and knowledge building, which resulted in a "permissive consensus" among negotiating parties.

The comparatively harmonious building of consensual knowledge in the climate talks had a number of important beneficial effects on harmonization of risk perceptions:

1. Consensual knowledge represented a unitary perspective with direct implications for risk perceptions. Joint knowledge building under the acknowledged guidance—or leadership—of the IPCC resulted more or less automatically in the effective harmonization of the perceptions that negotiation parties gained of the climate risks.
2. As joint risk perceptions were derived from emerging consensual knowledge in the "community of negotiating parties" in the climate talks, they were comprehensive and included risks of emissions, risks of warming, as well as mitigation risks. Actually, in the pre-Kyoto negotiations the principal focus was set on emission risks, implying a joint negotiation strategy to reduce emissions of greenhouse gases into the atmosphere.
3. Joint risk perceptions were not established as a code of belief but as a representation of evolving knowledge and understanding of the complex climate issue. Therefore, perceptions had an intrinsic capacity to adapt to increasing demands for clarity and detail.

Risk Assessment

Political responses to the climate risks have depended on how they were evaluated by governments. Policymakers who see high risks logically accept more costly policy measures than when they perceive low risks. Somewhere, there is a risk threshold below which a government is not willing to commit scarce resources to cope with the climate problem. Governments can be expected to perceive different thresholds, depending on their particular predicament with regard to climate risks, on their cultural background, and on what political orientation they have. Assessment of climate risks is a highly demanding task (Paoli, 1994). *Uncertainties of emissions, warming*, and *mitigation* interact in a complex pattern. For example, in any country, the political motivation to undertake costly measures to reduce emissions of greenhouse gases would probably be low, even when *risks of emissions* are high, if *risks of warming* are assessed to be low. Similarly, high *risks of warming* might prompt a government to control emissions even if risks of emissions are considered to be relatively low. High *mitigation risks* may impede policy action targeting climate change, even if both *emission risks* and *risks of warming* are relatively high.

The difficulties of assessing the climate risks collectively clearly manifested themselves in the climate negotiation and obstructed the process at some points. Differing assessments were evidently associated with diverging risk perceptions. Many weak and vulnerable developing countries highlighted *risks of warming* (storms, inundations etc.) in both their perceptions and assessment of the climate risks (Ztrepek and Smith, 1995). This assessment was associated with the basic policy on the part of developing countries of demanding exception from reductions of greenhouse emissions required by the 1997 Kyoto Protocol. In the post-negotiation on the Kyoto Protocol the USA presented, and argued for, a new assessment of the climate risk that, although supported by some parties (some oil-producing and developing countries), was contested by the EU and many OECD member states. This controversy has delayed the implementation of the Kyoto Protocol and has produced obstacles in the post-Kyoto negotiation (Grubb and Yamin, 2001). This contention between Washington and other capitals has largely concerned assessment of *mitigation uncertainties*. One of the explanations that the U.S. government presented for its refusal to ratify the Kyoto Protocol was that the mitigation costs required by this treaty were too high and that technological development could be expected to generate more cost-effective ways of coping with climate warming in the future (Rabe, 2004).

However, in spite of these indications of potential contentions between groupings of negotiating parties associated with risk assessment in the climate negotiations, this problem was managed rather smoothly before the 1997 COP meeting in Kyoto. Developing countries did not have enough leverage in the climate negotiation to influence the agreed collective assessment of the climate risks. The United States did not seriously voice its new concerns regarding mitigation risks until after Kyoto (Grubb and Yamin, 2001). It may be argued that instead of being an obstacle in the climate negotiation, risk assessment conceived of as a process became a driving force in the negotiation.

Risk assessment in the climate negotiation was not a procedure carried out on a particular occasion, such as at a special meeting organized for the purpose. It occurred rather as a more or less continuous process unfolding from *pre-negotiation* onwards. Negotiation parties participated in this collective assessment process both in the IPCC and in the principal forum for diplomatic exchanges in the climate talks, the Intergovernmental Negotiation Committee. Essentially, risk assessment had the form of a dialog between the IPCC and INC. The IPCC communicated reports to the INC for consideration, and these were essentially accepted by negotiating parties (Houghton, 1990, 1995; IPCC Second Assessment, 1995).

Climate risks assessments made in the climate negotiation generated huge and detailed information pertaining to the many facets of this complex problem area; this linked emissions of greenhouse gases to atmospheric warming and its various adverse effects. This rich material warrants a close and detailed examination in studies addressing climate change. However, for the purposes of the present analysis, a more general overview is sufficient.

Assessment of the climate risks was both driven and guided by the IPCC in its dialog with the INC, giving the IPCC authority and legitimacy in the eyes of the world scientific community. These assessments were an evolving joint venture between, on the one hand, scientists from different academic disciplines and, on the other, diplomats and policymakers from different countries. Thus the direct participation of national, diplomatic representatives in the assessment process was also an important aspect of the process.

The way in which the work of the IPCC was organized made a very constructive contribution to the assessment of the climate risks. The distribution of work between three main working groups meant that a separate forum could address each of the three dimensions of the overall climate risk: risks of emissions of greenhouse gases, risks of climate warming, and mitigation risks.

In the pre-Kyoto negotiation this separation of risk dimensions had several beneficial effects on the progress of the negotiation process. The whole vast agenda of the IPCC helped negotiating governments to attain a fairly comprehensive perspective on the problem of climate change with its high degree of issue complexity. At the same time, the clear distinction made between different risk dimensions facilitated the search for priorities in national policies and in the regime-building process unfolding in the interaction of the INC and the IPCC. The IPCC analysis helped focus on *risks of emissions* rather than on *risks of warming* in the final bargaining stage of the pre-Kyoto negotiation. This direction was contrary to the interests of developing countries which were particularly concerned with *risks of warming* and which could have obstructed negotiations if they had been more powerful players. The IPCC approach cut right through the complexity of the climate risks, from negotiation on problem clarification to highly simplified bargaining on the reduction of emissions of a number of specified greenhouse gases in equally specified time frames. This "simplification strategy" was probably a reason for the successful conclusion of the Kyoto Protocol negotiations.

The comparatively trouble-free development in the climate negotiations from problem analysis and evaluation to exchange of concessions regarding emission

reductions was due partly to the scientific "objective" and partly, as widely recognized, to the assessment of emission risks carried out by the IPCC. The IPCC evaluation depended on the results of the climate models used by the IPCC to predict expected changes in atmospheric temperature during the 21st century (Houghton, 1990). The climate models produced quantitative assessments and predictions, which were used as an input to the work of the negotiating parties in the INC. This procedure was key to coping with the uncertainty in the assessment of emission risks in the negotiation process, which could have been a serious obstacle in the climate talks.

In the Introduction to this book we learn that, in the standard model, a risk is seen as a function of two interacting variables, namely, the probability of an event (e.g., climate warming) and the consequences of that event, should it occur (e.g., rising sea levels or more frequent storms). Recall also that while, in some contexts, the risk formula *risk* = *probability* × *consequences* is actually employed directly for practical risk assessment, for example, in medicine or when the health risks of new chemical products are evaluated, in the area of risk research the traditional mathematical approach to risk assessment has been strongly criticized in recent years. Note furthermore the difference between *unstructured certainty* and *structured uncertainty*, and that politicians tend to prefer the latter.

In many countries with a strong anti-nuclear movement, for example, Germany and Sweden, the debate about nuclear power and the future of the nuclear industry has been stultified by the quest for *unstructured certainty*. This quest has, in some cases, placed heavy constraints on governmental decision making.[12] It is against this background that developments in the climate negotiations should be seen. One of the main accomplishments of the IPCC, and its interaction with the INC, was the establishment of a discourse for the negotiation and an assessment of emission risks that was essentially characterized by *structured uncertainty*. This approach permitted more rational consideration of the climate problem than was possible with the issue of nuclear reactors, which was loaded with emotions and ideology and marked by *unstructured certainty* in the political discourse.

Risk Communication

To negotiate is to communicate. If: 1) parties have difficulties in the communication process; or 2) the organization of the exchange of information, offers, promises, requests, and threats is insufficiently instrumental and effective, then a multilateral negotiation may be seriously hampered. For example, unsatisfactory communication procedures may generate time-consuming procedural disputes or cause unnecessary pseudo-conflicts because some parties misread each other's intentions. Fur-

[12] For example, in Sweden a governmental law prohibited research and development work to make nuclear reactors safer because a successful outcome would make it more difficult to implement the result of a national referendum to phase out the production of electricity in nuclear reactors.

thermore, the organization of communication in negotiation is a particularly critical factor when especially complex issues like that of climate change are on the table.

The effective and, at the same time, flexible organization of communication in the climate talks stands out as one important explanation for the relatively successful outcome of the pre-Kyoto phase of the climate talks. The way the negotiation was organized also helped negotiators to cope with the special difficulty of communicating about the climate risk and its three principal dimensions: uncertainties of emissions, warming, and mitigation.

The flexibility of the organization of communication manifested itself in a sequence of highly different approaches to the exchange of information at different stages of the climate negotiation when it was moving from early pre-negotiation to the final bargaining on detail in the draft Kyoto Protocol. These changes responded quite effectively to the varying demands on the communication system that arose in the transformation of the negotiation process from one process stage to the next. Three main patterns of party communication can be seen in the evolving climate negotiation pertaining to: 1) pre-negotiation; 2) agenda setting and formula negotiation; and 3) negotiation on detail in the endgame.

It was the *relevant branches of the international scientific community that particularly drove the pre-negotiation*, with the presence of the diplomatic representatives of interested governments gradually growing. With regard to communication procedures and also in general, pre-negotiation was initially molded to a large extent by the scientists involved in the process. Scientists used their customary forms of communication and discussion, just as they would at scientific seminars and conferences.

When pre-negotiation gradually became transformed into *agenda setting*, the negotiation process, including its communication element, was increasingly supported by international organizations (notably WMO and UNEP) that are controlled by governments but still have a high proportion of technical experts on their staffs. This development contributed to a fruitful dialog between scientists and policymakers, with little conflict and disturbances and on terms that were comparatively symmetrical for the two sides. Communication within the new networks of scientists and policymakers seems to have generated a growing like-mindedness that included different nations and different professions (scientists, politicians, and diplomats typical of an emerging "epistemic community" (Haas, E., 1990; Haas, 1997). In turn, like-mindedness included a number of premises for knowledge-driven analysis and assessment of climate risks.

In the climate talks *agenda setting* was closely associated with *issue clarification*. At this stage of the process, risk communication was solidly embedded in the construction of consensual climate knowledge. With the consent of negotiating parties this work process was coordinated by the IPCC and guided by the international scientific community that it represented. In climate negotiations conceived of as a communication system that includes governments, international governmental organizations, and non-governmental actors, the IPCC had a number of critical functions. The direct exchanges between the principal actors—the negotiating parties—were relatively limited during the agenda setting. The IPCC functioned as a clearing

house and linchpin in the communication network of the climate talks. It gathered information and knowledge regarding climate warming from universities and other research institutions, aggregated them, and communicated summaries of aggregated information/knowledge and scientific conclusions to negotiating parties. The organization of IPCC's work into three working groups facilitated *agenda setting* and subsequent *negotiations on formula* ("stabilization of concentrations of greenhouse gases [emitted] into the atmosphere"). The IPCC's work methods also enabled parties to keep the three types of climate risk (risks of emissions, warming, and mitigation) separate from one another in debate and bargaining. This distinction was, in turn, a prerequisite for putting together a framework characterized by *structured uncertainty* and with a focus on *emission risks*, which led to an emphasis, in the final stages of the pre-Kyoto negotiation, on reductions in greenhouse gas emissions.

The start of *negotiation on details* (cuts in emissions for individual countries) represented a radical change in the patterns of communication in the climate talks, not least with regard to risk communication. The linchpin function of the IPCC diminished and direct communication between the negotiating parties increased radically. The exchange of offers and requests was substituted for the substantive problem solving and continuous construction of consensual knowledge. It may also be argued that, at least in principle, a perspective of *unstructured certainty* was substituted for that of *structured uncertainty* which had so clearly marked the climate negotiation before the beginning of the final stages relating to specific and precise emission cuts.

Changing Conditions for Coping with Climate Risks

In the last few years much concern has been expressed regarding the difficulties of implementing the 1997 Kyoto Protocol. Analysts have debated the reasons for this crisis, and suggestions made as to how it may be alleviated (Grubb and Yamin, 2001). However, a still more complex question may be why, and how, the goals of the Kyoto Protocol might be achieved. The 1992 United Nations Framework Convention on Climate Change, to which the 1997 Kyoto Protocol is attached, is a formal treaty containing binding, demanding, and costly commitments for a considerable number of signatory states. There is actually a string of reasons why the pre-Kyoto negotiations could have failed. The issues on the agenda were of an enormous complexity, which normally causes difficulties in multinational negotiations (Zartman, 1994). There were serious distributive issues pertaining to the North–South relationship in terms of the responsibility for the large and increasing concentrations of greenhouse gases in the atmosphere. A critical question was: how should the North's longer history of industrialization be taken into account when calculating the extent to which individual countries should reduce their greenhouse gas emissions? The stakes involved in the climate talks are huge and of global dimensions. Climate warming may lead to catastrophic consequences around the world in all kinds of environments, ranging from mountain slopes to cultivated plains and

lowland coastal areas. Storms, inundations, and serious droughts may become more frequent and more serious, threatening enormous economic values and human lives.

A major problem in decision making is that the negative consequences of climate warming are uncertain. We do not know for sure how concentrations of greenhouse gases in the atmosphere will develop in the long term. The degree of uncertainty is even higher with regard to the future possible effects of a warmer atmosphere. Hence a critical dimension of anthropogenic climate warming is its character of risk. Greenhouse gases are generated by key activities and functions of a modern, developed society and are necessary for its survival and development: for example, agriculture, heating, industrial production, or transport of people and goods. Accordingly, measures to reduce emissions of greenhouse gases are potentially very costly and may depend on radical changes in lifestyles and in the technologies used to secure the vital functions of society and the economy. In the final analysis the decision about climate policy measures has to be taken in the context of risk analysis considering the three dimensions of the climate risk: risks of emissions, warming, and mitigation.

No absolutely certain answers can be given to a number of fundamental questions raised in assessments of the climate risks:

- How will concentrations of greenhouse gases in the atmosphere develop in the future?
- How will atmospheric temperature develop in the future, generally and in specific regions?
- What will be the consequences of climate warming in the future if no mitigation or adaptation measures are taken?
- What mitigation or adaptation measures should be taken now and in the future, and how costly might they be, taking into consideration the expected negative consequences of climate warming?

These issues are difficult to deal with for a single government. They are still more cumbersome to address in international negotiation where, to develop an effective joint strategy of risk management, parties need to harmonize risk perceptions and coordinate risk assessments. It is by no means self-evident that the goals of the Kyoto Protocol will be achieved. A number of likely explanations for this success can be mentioned. The threat of *risks of warming* may have had a decisive influence on national climate policies. Moreover, cuts in CO_2 emissions may have had value outside the national, or international, climate policy, for example, with regard to energy policies in a world where the future demand for oil is expected to increase.

Some of the reasons for the success of the pre-Kyoto negotiation pertain to the negotiation process as such, including how the risk dimensions of the climate issue were addressed. The regime-building strategy used in the area of climate change functioned effectively. The Framework Convention (UNFCCC) that was ceremoniously highlighted in the 1992 United Nations Conference on Environment and Development (UNCED) was constructed as a platform of *norms* which provided direction and *consensual knowledge* which provided an understanding of the climate issue: this made possible the subsequent negotiation on *binding rules*, notably formal

commitments in the Kyoto Protocol to reduce emissions of greenhouse gases.[13] The Framework Convention drove, guided, and constrained the distributive bargaining in the Conference of the Parties (COP) regarding emission cuts.

Can the regime-building process be expected to function equally effectively in the post-Kyoto context? It may be argued that, ultimately, the political will of leading nations will determine the answer to this question; the future climate policy of the United States may prove to be a decisive factor. National disasters that can be linked to climate warming will be of importance, as will new technologies that will reduce the costs of cutting CO_2 emissions from transport systems, heating of buildings, or industrial production. However, the character and functioning of the climate negotiation process are both factors that may have been underestimated in the discussion about the future of the climate negotiation. In this connection the procedures for risk assessment and risk communication are highly significant.

The pre-Kyoto climate negotiation seems to have been characterized by a *paradox of high complexity*: the evidence of the climate negotiation in fact gainsays Zartman's argument that a multilateral negotiation always becomes increasingly difficult to manage as the complexity of issues and actors mounts (Zartman, 1994). The climate talks must be considered as an extremely complex negotiation, particularly with regard to issues and agenda, and as being well above the threshold at which extreme complexity seems to start to generate positive effects on the negotiation process. The risk dimensions of the climate issue did not cause difficulties but had rather a helpful influence on the process. This positive impact was particularly significant in the earlier stages of the process. Driven by the input from the IPCC, the communication of risk in the INF was constructive and contributed to harmonizing the perceptions that negotiating governments had of the three dimensions of the climate risks (risk of emissions, warming, and mitigation).

The complexity and uncertainty regarding issues, problems and solutions were so high for so many countries that joint risk assessment, in combination with disciplined and well-structured risk communication, became a necessity for progress in the negotiation, or perhaps for sustained negotiation. The quality and authority of the continuous assessment of the climate risks were reinforced by their integration into the construction of consensual climate knowledge in the climate negotiation process. The process character of risk assessment had several beneficial effects on the progress of the climate negotiation. Notably, the continuous interaction of policymakers (INC) and scientists (IPCC) in a collective learning process increased the commitment of negotiating parties to consensual knowledge and a scientific approach to risk assessment characterized by *structured uncertainty*.

It is fully possible, but unlikely, that the same or similar conditions will continue to prevail in the post-Kyoto negotiation now under way. There are new and highly complex issues that may become drawn into the climate negotiation and that will require joint learning by negotiating parties (e.g,. regarding sinks and new technology), hence reproducing a situation similar to that of the pre-Kyoto negotiation.

[13] Recall the standard definition of an international regime as a system of norms, principles (consensual knowledge, rules, and procedures, "around which actor expectations converge" (Krasner, 1983).

However, the overall general need for a truly collective effort to build up consensual knowledge about the climate issue is much smaller in the post-Kyoto world than it was in the 1980s when the climate issue essentially was constructed in the negotiation process. The IPCC was then largely responsible for the effective communication and instrumental assessment of the climate risks. The IPCC will probably continue to exist. However, its impact on the negotiation is seemingly changing because negotiation parties, or some of them, have become much less dependent on the IPCC to develop national climate policies. Therefore, risk assessment is likely to become more politicized in the future. This will probably remove the rather unique character of the pre-Kyoto negotiation as a knowledge-driven process with a comparatively strong role for the international scientific community.

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Managing Security and Safety Risks in the Baltic Sea Region

Boris Porfiriev

Introduction

The increasing complexity of the modern world poses risks to human and environmental safety, economic development, and, most seriously of all, national and international security. These risks constitute a real and critical challenge for the national governments and international bodies responsible for developing and implementing crisis management policies. Such policies are defined here as the development of knowledge and management practices to deal effectively with nonroutine events and phenomena: both the hectic moments of crisis decision making and the managerial areas of long-range prevention, preparation, and mitigation of risks and threats. Their coverage ranges from times of normality to the sensitive domain of recovery and change following an immediate crisis response (Comfort, 1988; Rockett, 1999; Rodriguez et al., 2006; Rosenthal et al., 2001).

As is well known from practice, and also noted in the research literature, mitigation is a very efficient and effective crisis policy strategy. Within it, two key elements should be emphasized: 1) the conceptual basis of this strategy along with the analytical means and tools that are used to transform theory into practice and that are embodied in risk analysis and risk management; and 2) the actors who develop and implement this strategy and the means they use to cope effectively with a crisis. At the national and international levels the actors are represented by political, administrative, and social institutions through negotiations, programs, and project management as key policy tools.

In a rapidly changing world, the institutions of the present embody core values and lessons from the past and provide guidance in phases of transition and uncertainty. On the other hand, the inherently inertial and stereotypical reflex of institutions can, and often actually does, limit their ability to mitigate the crises that

Boris Porfiriev
Risk and Crisis Research Center, Institute for International Economic and Political Studies, Russian Academy of Sciences, Moscow, Russia, e-mail: b_porfiriev@prin.msk.su

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occur at a societal level and in individual communities. This duality on the part of institutions is closely coupled to the problems of risk perception and interpretation that help actors frame issues involving uncertainty and complexity and thus have significant policy implications. As Rhinard (2000) puts it: "Within policy making environments characterized by complexity and uncertainty, the manner in which issues are initially framed has a strong bearing on policy and processes." This is particularly true of negotiations on security and safety risks that are such an important policy element. The way the parties involved frame these threats and associated issues has a strong impact on the way risk is communicated and on how efficient talks are among the parties.

The chapter is structured as follows. It starts with a discussion of the role of parties as institutional actors that shape crisis policy, in particular, crisis prevention and mitigation policy, which use risk management as a conceptual approach and negotiations among the parties as a policy tool. This is followed by an analysis of the parties' approaches to risk perception and to the management of risk issues, both as the substance of negotiations and as embedded in national crisis policies. To support the analysis empirically, the Baltic Sea region is chosen as a case study, occasionally supplemented by examples from other areas of the world.

Crisis Policy in the Baltic Sea Region: A Comparative Study[1]

The institutional issues of crisis policy are considered here in comparative terms to provide an understanding of both the commonalities and peculiarities of national crisis policies in the Baltic Sea region. These "objective" crisis strategies are then contrasted with the "subjective" constructs of experts as revealed in surveys.

Study Outline

Two surveys were carried out in 1999 under the aegis of the Swedish Agency for Civil Emergency Planning (ÖCB)[2] as a part of preparations for international meetings on civil security and crisis management (Stockholm, Sweden, 18–19 March) and the future of European crisis management (The Hague, Netherlands, 7–9 November). The surveys were based on questionnaires that included sets of questions addressing the salience and priorities of national crisis policies, their key actors and management models, as well as cooperation: 1) between the countries

[1] The original detailed version of the study is published in *Risk Management: An International Journal*, 2001, Issue 3, Perpetuity Press Ltd ©.

[2] In summer 2002 this was reorganized into part of the new Swedish Emergency Management Agency (KBM).

of the region[3] and the European institutions; and 2) among the academic and practitioner communities. The questionnaires were mailed to participants considered as risk and crisis experts in advance of the meetings. Some 64 percent filled in the questionnaires and returned them to the conference organizing committee. The committee then asked the author of this chapter to conduct a comparative study of national crisis policies in the region from the perspective of the national crisis experts.

There were five basic stages in the study. In the first, preparatory stage all the questions from the two questionnaires were integrated to form a more detailed set of 14 questions (see Table 1).

Table 1. Integrated questionnaire of the surveys of experts

No	Set of questions
1	What types of contingencies/crises attract the most attention in your country?
2	What parts of the government/public sector are most active in crisis planning and crisis response (de facto performance in real events)?
3	What, according to your estimates, is the degree of political priority given to crisis management?
4	Is crisis management policy a predominantly national issue or is it decentralized toward subnational level(s)?
5	In what way is crisis management in your country coordinated with that of neighboring countries and the European institutions?
6	How and to what extent is the systematic knowledge of civil crisis management gathered and disseminated in your country?
7	Can you specify key institutions and organizations involved in crisis management practice and/or research in your country?
8	To what extent are crisis operations systematically evaluated in your country?
9	Do academics play a role in these assessments?
10	How would you judge the impact of such evaluations on future crisis planning?
11	What is your opinion on learning from experience in the crisis management field in your country?
12	Is there a dialog in progress between the academic and the practitioner communities on the topic of crisis management? If so, where (geographically; institutions/actors; local/national) and how (what forms, triggers, incentives)?
13	Who are these bridge builders between theory and practice, and can we identify them?
14	Is there any potential for enhancing cooperation between practitioners and scholars in this field?

In stage 2 contextual mapping was used to reveal the most essential comments and key words of the respondents' answers and comments. These were then combined into a matrix with columns corresponding to the questions and rows denoting respondents from each Baltic Sea country. A set of specific tables was then constructed to highlight the key features of crisis management policy in the states

[3] Denmark, Estonia, Finland, Germany, Iceland, Latvia, Lithuania, Norway, Poland, Russia, Sweden.

surveyed. Finally, a brief interpretation of the features of these systematization efforts was provided which, along with the tables, made up the main outcomes of the surveys.

Before these outcomes are presented, a few reservations should be expressed concerning the limitations of the study. The most serious of these involved the low level of response to the questions, with 45 percent of respondents answering 50 percent or less of the questions (numbers are rounded). In addition, almost half (43 percent) the questions were answered only by around 50 percent of respondents. Of these, issue coverage ranged from 36 percent on the political priority given to crisis issues and the input of the academic evaluations of crisis policy on future crisis management to 55 percent for questions tackling the role of academics in the aforementioned evaluation, coordination with neighboring countries and European institutions, and learning from experience. Questions on organizations involved in crisis research and crisis management and those on types of risks and crises had the highest coverage with 82 and 91 percent, respectively.

Another limitation was that respondents' statements represented the subjective notions of randomly selected individuals. Despite the balanced numbers of academics and practitioners sent questionnaires, most Baltic Sea states were represented by a single respondent, which conspicuously decreased the representative nature of the survey. Last, but not least, the questionnaires failed to ask detailed and challenging questions, including ones involving crisis mitigation strategy and the role of risk management in it. Instead, the questions focused on generic and less thought-provoking issues and implied that the central notion of "crisis management" is similarly understood everywhere, which is not always true, given the differences in perception and conceptualization of the core categories of crisis and risk. This makes the interpretation of the survey outcomes, however valuable, less solid and comprehensive than would be desirable.

Given these constraints, one should be cautious when interpreting the findings of the study. The proposed assessments and conclusions should rather be considered as needing further corroboration by more extensive and in-depth research. In particular, the assessment of the cognitive and social factors of crisis decision making should include the perception and assessment of the risks that cause and/or are coupled with a crisis. With that in mind, the study results could be seen as providing insights into an area that is worthy of consideration, especially in the light of the discussion—which follows—of the implications of certain factors for the negotiation process (see section below).

The Study Outcomes in Brief

Almost every respondent either explicitly stressed or implied the political importance of security and safety risks issue in terms of both crisis research and management in his/her country. Representatives from Estonia, Germany, and Russia believe that the existing status of these issues is high, while both they and respondents from

the other countries emphasize the increasing political salience of crisis research and crisis management (Table 2).

Table 2. Political priority of crisis research and crisis management

Priority	Kind of statement	Baltic Sea states
High	Explicit	Estonia, Russia
	Implicit	Germany
Increasing	Explicit	Poland
	Implicit	Finland, Latvia, Lithuania, Norway, Sweden

Note: The Danish and Icelandic respondents did not answer this set of questions.

In the questionnaires filled out by the Danish and Icelandic respondents, there was not a clear-cut statement nor was it implied that crisis issues have become an organic item in the list of the national policy priorities. However, this did not exclude the possibility that these issues are increasing in importance and may soon be put on such a list. Corroborating this, data on the state of crisis legislation were added to those retrieved from the questionnaires, as legislation development serves as both a vital component and an essential indicator of the institutionalization of a given policy area. The evidence from these data show that the crisis legislation in these two Baltic Sea states has already been established or is developing.

To sum up, the respondents' replies proved that whatever the differences between the Baltic Sea countries, crisis issues are increasingly becoming one of the main items of regional and European development policy. The answers also show that within the national crisis policies of the Baltic Sea region, peacetime crises and crisis management tend to take priority over wartime ones. Since the previously heightened military activity in the region has subsided and the importance of military planning has decreased, civil risks and crisis policy have come to be considered more important. However, we believe that the 9/11 crisis in the United States and the war in Iraq could change the current response pattern, thus exposing a dramatic shift in modes of risk perception (for more details see Section 3 below).

Existing differences should also not be overlooked in terms of what specific types of crisis there are and their risk sources. The majority of respondents mentioned three basic types of crisis as policy priorities, of which conflict and non-conflict crises are the two main ones. The third type, compound crises, particularly environmental crises and epidemics, was also emphasized by experts from three Baltic Sea states: Germany, Norway, and Russia (Table 3).

All respondents except those from Latvia and Lithuania considered political and social risks to be a vital crisis policy objective, with such risks varying from civil unrest (Finland, Poland, Sweden) to terrorism and ethnic violence (Germany, Russia, Norway). Within non-conflict crises, Finnish, Icelandic, and Polish respondents were more concerned by natural disasters than technological accidents. Swedish

experts were of the opposite view, while respondents from the other countries had their priorities equally balanced between the two.

Each respondent emphasized the vital role of government bodies in crisis policy development and implementation. In wartime crises, the defense ministry is the only body responsible for these two functions in all Baltic Sea states. In peacetime these policies are carried out by different parts of the national governments that vary from country to country (Table 4). In terms of the key agency responsible for development and implementation (coordination) of peacetime crisis policy, four groups were distinguished in the Baltic region states.

The most numerous group includes six countries where the interior ministry serves as a leading body or chief coordinator of the crisis policy. In Germany both functions are carried out directly by the interior ministry, while in the other five nations they are executed by specific bodies associated with this ministry or with other parts of the national government that share these functions with the interior ministry. For instance, respondents from Poland and Denmark cited the crisis management and population protection agency and interior emergency management agency (both within the national interior ministries), supplemented in the Polish case by the special committee for emergency management of the council of ministers. The respondent from Estonia named the government crisis center and the coordination office of the state chancellery as the responsible body.

Table 3. Prevailing types and kinds of risks as crisis policy priorities

Crisis type	Types of crisis	Baltic Sea states
C	*Political and social crises*	
	Terrorism and ethnic violence	Germany, Russia, Norway
	Hijacking and airport crises	Estonia, Iceland
	Political conflicts, civil unrest	Finland, Poland, Sweden
NC	*Technological accidents and disasters*	
	Nuclear accidents	Estonia, Lithuania, Sweden
	Electric and energy supply failures	Lithuania, Norway, Russia, Sweden
	Oil spills, oil-rig accidents	Lithuania, Norway
	Chemical and transport accidents	Estonia, Germany, Latvia, Norway
	Natural disasters	
	Floods	Estonia, Germany, Poland, Russia
	Forest fires	Latvia, Lithuania, Norway
	Earthquakes, volcano eruptions, and avalanches	Iceland, Russia
	Not specified	Finland
CP	*Compound crises*	
	Environmental crises, epidemics	Germany, Norway, Russia

Key: C, Conflict, NC, Non-conflict, CP, Compound
Note: The Danish respondent did not answer this set of questions.

The other two sets of the Baltic region states consist of a couple of countries each. Lithuanian and Swedish respondents cited the defense ministry or specific bodies

Table 4. Parts of the government involved in peacetime crisis management

Responsible/coordinating body	Baltic Sea States
Ministry of interior	Denmark, Estonia, Finland, Germany, Latvia, Poland
Ministry of defense	Lithuania, Sweden
Ministry of justice	Iceland, Norway
Ministry of interior, federal security service, and EMERCOM	Russia

associated with this ministry as acting as a central crisis management actor at the national level. Respondents from Iceland and Norway stated that in their countries this role is played by the justice ministry. The final group of the Baltic Sea countries is represented by Russia alone, where civil crisis management functions are shared by three basic governmental bodies: the interior ministry and federal security service, which are responsible for handling social and political crises, and the civil defense ministry for response to emergencies and natural disasters (EMERCOM), which deals with natural disasters and major technological accidents, including fires.

Whatever the key governmental body involved in this area, it does not implement national crisis policy alone but serves rather as a coordinator, focal point, and clearing house, working closely with other parts of the federal government and the regional and local administrations involved, especially the urgent response units of the police, fire, medical, and transportation services. Almost every respondent underlined not only the multi-organizational approach to crisis response but also the pivotal importance of urgent response services as crucial characteristics of the existing institutional frameworks of national crisis policies in the region.

The authorities also cooperate closely with neighboring countries and European institutions. All respondents emphasized that such cooperation is crucial for national crisis policy in terms of both development (joint research projects) and implementation (joint management programs). At the same time, in view of the political and geographical peculiarities of the Baltic Sea region, it is hardly surprising that representatives from different countries mention different states and European institutions as their crisis management partners or, at least, as being responsible for different priorities in the crisis field. For instance, European Union (EU) members or countries seeking EU membership particularly stressed the role of the EU, while Russia did the same regarding the Commonwealth of Independent States (CIS). Members of the North Atlantic Treaty Organization (NATO) and states seeking NATO membership considered NATO as an important framework for cooperation in the field of crisis research and crisis management, while respondents from "neutral" countries understandably did not mention such a factor (Table 5).

Crisis policy developed and implemented by parts of the national governments of the Baltic Sea states and their international partners is based on different policy models. The questionnaire restricted consideration of this complex subject to just the centralization/decentralization issue. Almost every respondent mentioned that the centralization model dominated wartime crisis decision making and

Table 5. Cooperation on crisis management issues with European institutions and neighboring countries

Partner	Baltic Sea states
Institutions	
EU	Estonia, Finland, Germany, Latvia, Poland
CBSS	Estonia, Finland, Latvia, Poland, Sweden
NATO/PfP	Iceland, Norway, Russia
CIS	Russia
Countries	
Estonia & Lithuania	Latvia
Denmark	Lithuania
Netherlands	Latvia, Poland
Sweden	Latvia, Poland
UK	Finland, Latvia

Note: Only the answers with explicit statements for both practical and academic fields of crisis management are included.
Key: CBSS, The Council of the Baltic Sea States
PfP, Partnership for Peace

Table 6. Crisis management models: Centralization/decentralization types

Management model	Baltic Sea states
Decentralization	Germany, Iceland, Norway
Balanced (flexible)	Finland, Norway, Poland, Sweden
Centralization	Estonia, Latvia, Russia

Note: The Lithuanian respondent did not answer this set of questions. Two Norwegian respondents made controversial statements on the issue.

implementation. As for peacetime crises, most respondents mentioned decentralization as an increasing trend of crisis management development in the region. However, this generic observation should not mask the conspicuous differences that exist among between the Baltic Sea countries. At least three types of crisis management model used at the national level could be distinguished: those with prevailing decentralization, those with dominant centralization, and balanced policy types (Table 6).

It was clear from the respondents from Germany and Iceland that their countries use the decentralization policy model. However, according to respondents from Estonia, Latvia, and Russia, centralization was a characteristic feature of their states' decision making and implementation in the crisis field. Meanwhile, Finnish, Polish, and Swedish respondents understood their national governments to follow balanced or flexible crisis strategies. In Norway decentralization is increasing, but policy in general is still "more centralized than decentralized" in terms of community preparedness. As a result, one could say that the crisis policy there still preserves the existing centralization pattern, but that change is under way.

Almost every respondent stressed that crisis knowledge and data collected by academics and the research community as a whole were both a vital component and

a driver of crisis management decision support. However, in each country of the region crisis policy support is provided in its own specific way. In terms of crisis knowledge and database development level, one can distinguish three main groups among the Baltic Sea states (Table 7). One of these groups, comprising Germany, Russia, and Sweden, has accumulated a wealth of information on risks, crises, and crisis management, and thus possesses relatively established and increasing knowledge in this field, as well as good databases. Those in the second group, including Finland, Norway, and Poland, could be characterized as being in the course of extending and expanding their knowledge and data acquisition. The replies of respondents from the third group, Estonia and Latvia, show crisis knowledge and databases there to be developing. It is hard to assess what the level is in the other three countries of the region, as the Danish, Icelandic, and Lithuanian respondents did not fill in this part of the questionnaire.

Table 7. Crisis management decision support: Development level of knowledge and data banks

State of development	Baltic Sea states
Established	Germany, Russia, Sweden
Extending/Expanding	Finland, Norway, Poland
Developing	Estonia, Latvia

Note: Only the answers with explicit statements regarding the practical and academic fields of crisis management are included. The Danish, Icelandic, and Lithuanian respondents did not answer this set of questions.

As far as the organizations accumulating the knowledge and data are concerned, almost every respondent except Russia emphasized the leading role of universities in this sphere. After universities come the various governmental institutions that are active in both crisis research and crisis management areas—mentioned by 55 percent of the respondents. Less than 20 percent cited private insurance companies, academic research institutions (within the system of the national academy of sciences), and nongovernmental organizations. However, these institutions are significant actors in both crisis research and crisis management in Germany, Russia, and Estonia, Iceland, and Latvia (Table 8). To interpret these data correctly, it is worth mentioning that the Danish and Lithuanian respondents skipped these questions in the questionnaire.

As for the research community, analysts from both academic and grass-roots organizations accumulate knowledge and collect, process, explore, and store data on risks, crises, and past experience of crisis management (case banks). These provide the intellectual basis for assessing the efficiency of current crisis policy and for forecasting future risks. However, the community's role in crisis decision support activities varies from country to country within the region. Two main sets of the Baltic Sea states were distinguished (Table 9).

In the smaller group of four countries including Germany, Poland, Russia, and Sweden, the academic community has established itself in the role of efficient

Table 8. Crisis management decision support: Types of organizations accumulating knowledge and data on crises

Dominant organization type	Baltic Sea states
Government institutions and universities	Finland, Norway, Poland, Sweden
Government institutions and academic research institutes (RAS)	Russia
Government institutions, private insurance companies, and universities	Germany
Universities and NGOs	Estonia, Iceland, Latvia

Note: Danish and Lithuanian respondents did not answer this set of questions.

Table 9. Crisis management decision support: Role of academic community

Baltic Sea states	Involvement		Evaluation rate of crisis research and management		Input into future planning		Learning from experience		Dialog betwween academics and practitioners	
	A	S	R	O	C	I	R	O	A	S
Denmark		+	+*		NA	NA		+		+
Estonia		+		+		+	+			+
Finland		+		+		+		+		+
Germany	+		+		+		+		+	
Iceland		+		+		+		+		+
Latvia		+		+		+		+	+	
Lithuania		+		+		+		+		+
Norway		+		+		+		+		+
Poland	+		+		+		+		+	
Russia	+*		+*		+		+		+*	
Sweden	+		+*		+		+		+	

Key
A: Active; C: Conspicuous; I: Insignificant; NA: Not available; O: Occasional; R: Regular; S: Sporadic

Note: Respondents marked by an asterisk mention that these activities are carried out exclusively or mainly by research units of government agencies responsible for crisis management policy.

collective analyst and consultant for practical crisis management. Research institutions are, and continue to be, actively and regularly involved in the evaluation of risks, development of crisis programs, and disaster planning. They regularly communicate with the crisis practitioner community and learn from field experience, thereby positively contributing to the future of crisis planning. Worthy of special note is the leading position of the research institutions and units of the responsible governmental organizations (ministries, committees, services)—in Russia, particularly those of the defense ministry, interior ministry, and EMERCOM. In Sweden and Denmark, regular evaluation of existing crisis management programs is typically carried out by analysts of the emergency management agencies.

According to respondents from the larger group of seven countries (Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, and Norway) academic communities were contributing, as yet, insufficiently to practical crisis management. The involvement of most research institutions in crisis programs and planning evaluation is sporadic, as is their communication with the crisis practitioner community and their learning from field experience: this means that their input into future crisis planning is relatively insignificant or even inadequate. Within this set of the Baltic Sea states, the regularity of crisis management and planning evaluation by researchers in Denmark is worthy of particular mention. In this respect, one should note, too, the substantial learning of academics from practical experience in Estonia and the active dialog between academic and practitioner communities in Latvia, both of which were underlined by respondents.

Risk Perception and Risk Management Modes as a Negotiation Factor

The results of the study mentioned above reveal both the commonalities and the peculiarities of national crisis policies in the Baltic Sea states. These vary, with different risks being management priorities and different "stakeholders" being involved; some federal government agencies are a key crisis management actor in some states. In the same way, the institutional policy models differ in terms of their degree of decentralization: some of the states maintain a more centralized role and some try to follow a more balanced approach. Each country of the Baltic region follows its own specific way in crisis policy decision support; a few rely upon established knowledge and databases in the area, while most of the other states are either just emerging or expanding and extending their knowledge base.

At the same time, the institutional policy models have some notable common features, for example, the increasing importance of crisis issues within overall national development policies, with peacetime crises being the priority. This is evidence for the growing understanding, or, at least, implicit perception, of crises as being an inherent part of both the development process and the organization of society and its substructures (Rockett, 1999). These policies, which are becoming increasingly comprehensive in terms of coverage of every type of security and safety risk, are also becoming more and more decentralized, with a wide gamut of institutions being involved in crisis management. Among these, government bodies still play the most important role.

These peculiarities and commonalities of the national crisis policies should have significant implications for the pattern and efficiency of negotiations to which crisis actors are party. This primarily follows, on the one hand, from the trade-offs that exist between risk management and crisis policy and, on the other, the crucial role of risk communication among the involved parties, which constitutes the core of the negotiation process. Exchange of opinion on and discussion of risk-related issues either to improve a policy and/or resolve a conflict imply that the consideration and

understanding of parties' risk perception modes are a necessary, though insufficient, condition for successful conflict resolution and disaster mitigation.

Party- and Substance-Related Factors of Risk Perception and Risk Management: An Overview

An efficient crisis policy assumes risk perception and risk management to be a priority task, taking precedence over response to and recovery from a crisis. Such priority setting and efforts to reduce the probability and severity of expected damage and losses form the cornerstone of risk management perception and practice; they imply knowledge, expertise, and experience on the part of particular decision makers and institutions, in particular, in nations or regions that may be very different geographically, culturally, and historically.

In turn, this allows for the idiosyncratic norms and values of respective societies to be taken into account which, according to a vast set of sociological studies, are a significant factor in the evaluative process of risk perception and risk communication, as each community has its own specific set of risks that it believes to be of concern (see Beck, 1992; Cvetkovich and Earle, 1991; Dake, 1991; Douglas and Wildavsky, 1982; Rayner, 1992). With different nations being involved in a negotiation process, one could logically expect such cultural differences to precipitate initial or persistent non-congruence among the negotiation parties from agenda setting, through working out a bargaining formula, to signing an agreement.

These generic cultural differences manifest themselves in specific cultural/organizational prototypes or groups that interact in various domains and activities, including that of negotiations. The cultural theorists distinguish three major prototypes or groups that could represent a negotiating party: bureaucrats, entrepreneurs, and egalitarians (Douglas and Wildavsky, 1982; Rayner and Cantor, 1987; Renn and Rohrmann, 2000; Thompson et al., 1990).

Bureaucratic organizations, which provide the majority of international negotiators, primarily at the intergovernmental level, tend to rely on rules and procedures to cope with uncertainty posed by a risk agent. Here the negotiation process is focused on seeking institutions and strategies capable of reducing or, even better, averting the risk, either in compliance with existing international standards or by developing such standards or acceptable compromises. Such an approach assumes that risk is interpreted as an adverse discrete event or set of events that should be considered and handled in a way that complies with an alternate/reciprocal or swinging process model. As soon as such solutions can be provided for all eventualities considered and an agreement signed, negotiators in these situations no longer have any concern about these risks.

In contrast, entrepreneurial-type organizations tend to perceive risk not just as adversity but also as an opportunity; they believe risk taking to be an organic element within a set of opportunities that allows them to be competitive in the international market. These risks, which provide explicit and significant benefits in a short- or

medium-term perspective, would be a key criterion for this type of party in terms of selecting and assessing the efficiency of a negotiation strategy. This understanding of risk reveals it not to be a discrete event but rather a continuous process that should be handled on a rational cost–benefit basis with respective negotiations complying with a multi-loop cyclic or spiral-type process model.

Egalitarians, on the other hand, emphasize cooperation and equality to reduce or avert risk, even if the activity undertaken to gain a benefit is perceived as beneficial rather than competitive. They are also disposed to focus on long-term rather than short- or medium-term perspectives. This type of risk conceptualization and negotiation model follows, or is very close to, the precautionary principle or what some scholars label the ecological approach to policy decision making (Dynes et al., 1987; Everts and Missiroli, 2004; Freestone and Hey, 1996; O'Riordan and Cameron, 1991).

The differences in risk perception modes that exist among individual actors should be considered as just as important a factor of the non-congruence among the negotiating parties mentioned earlier. This follows from the specificity of the cognitive structures, which reveals that risk interpretation is dependent on individual perception of different kinds of hazards. However, here, Luhmann's observation that such a perception is less a product of personal experience or evidence than social communication should be particularly emphasized so that the role of an individual is not overestimated in risk communication, including negotiations on risks (Luhmann, 1993).

Many studies show that in peacetime, hazards associated with "lifestyle" tend to get the highest risk magnitude ratings, followed by technology-induced hazards; the lowest rankings are given to natural hazards and occupational risk exposure. This pattern of risk perception causes a variety of modes of individual and societal risk acceptance, which tend to be higher for natural and lower for man-made hazards (Brun, 1992; Renn and Rohrmann, 2000).

The main factors influencing these disparities in risk perception involve: 1) dread and voluntary nature of hazard; 2) the inequitable (unfair) distribution of risks and benefits that decrease risk tolerance; 3) familiarity with or knowledge of a hazard; and 4) risk voluntariness and the possibility of risk being controlled personally and/or institutionally, which increases risk tolerance (Covello, 1983; Renn, 1990; Slovic, 1987; Vlek and Stallen, 1981). Within these factors the two most important that provide for most of the variability in risk perception and risk acceptance are dread of and familiarity with the risk source. The former is associated with catastrophic potential, which is especially high in case of low-probability, high-consequence ("zero-maximum") risks that are perceived as by far the most threatening. The familiarity factor to a large extent dictates the degree of risk voluntariness and controllability (Brzezinski, 1997; Slovic, 1992, 2000; Slovic et al., 1980, 1985, 1986).

The existing disparities in modes of perception and handling of different hazards by different kinds of actors influence social and political behavior, including that of the media. This generates second-order risks that extend beyond those directly affected and experienced; these not only harm human health, property, and the

environment, but involve impacts such as liability, loss of political reputation, loss of confidence in institutions, or insurance costs (Kasperson et al., 1988). Such an effect, labeled "social amplification of risk," can trigger negotiations to bring down the possible tensions and conflicts associated with this process, or on the other hand, it can slow down or disturb ongoing negotiations aiming to reduce the risks posed by primary hazards.

Below, we contemplate in more detail the possible implications of discrepancies in perception and management modes among different crisis policy actors, as parties, and different kinds of hazards, as crisis issues disputed by these parties during negotiations on major risks. The propositions made in this respect are illustrated by the data given above on the national crisis policies in the Baltic Sea region. The discussion starts with a consideration of the substantive factors of risk perception, primarily the impact on negotiations of risk dread and the familiarity factor. This is followed by an analysis of party-related factors regarding the variety of risk interpretations and their implications for the negotiation process.

Substantive Factors: Possible Implications for Negotiations on the Major Risk Issues

The results from the surveys of experts summarized in Table 2 show the high or increasing political salience of crisis and crisis management issues in the Baltic Sea nations. They suggest that the risks associated with these issues will come increasingly under focus in political activities, including negotiations at the regional and international levels.

The events that took place in the early 2000s after the surveys, both outside and within the Baltic Sea countries, corroborate this. These primarily include the major terrorist attacks in the United States in 2001 (9/11 crisis) and Russia (theater crisis) in 2001 and 2002, respectively, and the Iraq war crisis that in 2003 drove a wedge through the European political arena, including the Baltic Sea states. To those should be added the catastrophic floods of 2002 in Europe, most devastating for the Czech Republic, Germany, and Russia, as well as the Kaliningrad crisis. The latter was linked to the EU accession of the Baltic states of Estonia, Latvia, and Lithuania, along with seven other nations, in spring 2004 and the introduction of strict border controls on people traveling back and forth between the Russian enclave of Kaliningrad (situated between Lithuania and Poland) and "mainland" Russia.

Had the dreadful risks of terrorist attacks and war of the 2000s occurred prior to 1999, when the survey was carried out, the pattern of the survey responses would be different in two respects. First, the risks would have been mentioned by probably every survey respondent in the priority list of conflict-type crises. Second, the tendency of the peacetime crises and crisis management to dominate over those of wartime within the national crisis policies in the Baltic Sea region, as disclosed in the respondents' answers, would be much less articulated, if at all. These crises would, in fact, have brought about a partial revival in the crisis policies in the region

of some of the civil defense procedures that are now perceived as defense measures against the risks of international terrorism.

With this in mind, two propositions are worth putting forward. These will be accompanied by preliminary comments, including some on the compliance of the negotiation model with actual experiences, based on the peculiarities of risk perception modes. A reservation must be expressed in advance, namely, that the experiences discussed involve only selected negotiation issues rather than the process in full. However, we believe that this will provide some understanding at least of the degree of influence of the substance-related interpretations of risk on parties' behavior.

Proposition 1. Unlike risks with "high-probability, low catastrophic consequences," risks with "low-probability, high catastrophic consequences," which are usually perceived as being the most worrying, will prompt the parties to start negotiations early and to show not only more eagerness to work out and sign an agreement to reduce the threat or possible damage but also greater willingness to stick to the agreed terms.

The questions asked in the surveys of experts from the Baltic Sea region and the respondents' replies failed to single out crisis and crisis management issues linked with low-probability, high-consequence risks. Such risks only loosely correspond to the types of threats specified in the questionnaire.

Indeed, low-probability, high-consequence risks are characteristic of both political and social conflicts, including major terrorist attacks,[4] non-conflict crises (natural and technological disasters), and compound crises (e.g., global warming or pandemic infectious disease). For a proper comparison to be made, one should contrast the implications for negotiations of the low-probability, high-consequence risk with the more likely, less-catastrophic risks caused by one and the same kind of hazard agent, for instance, radiation. If this case can be made, then the original proposition could be reformulated in a way that the parties' eagerness and willingness to resolve the disputes, sign an agreement, and stick to the agreed terms in respect of the risks posed by nuclear reactor meltdown should significantly exceed those coupled with the risks following from minor failures within a nuclear reactor or, in Perrow's book title, "normal accidents" (Perrow, 1984).

The existing experience of crisis management provides evidence that is more in favor of this hypothesis than against it; but the support is far from absolute and irrefutable. Before the accident at the Chernobyl nuclear power plant in 1986, there are no known international negotiations that seriously consider the risk of a nuclear reactor meltdown, cooperation in its aftermath, or countermeasures. However, after the major radiation accidents at the nuclear power plants in Windscale (United

[4] This was particularly true before the unprecedented attacks in the United States on September 11, 2001. The events that followed the attacks both in this and other regions of the globe (e.g., Indonesia and the Philippines in Asia, and Russia and Spain in Europe, let alone the Middle East) changed the situation dramatically. These prove that in the 21st century major terrorist attacks should no longer be considered as low-probability, even in the world's leading nation. However, it is noteworthy that, in purely statistical terms, the probability of such attacks remains at an order of magnitude that is lower than major natural and technological disasters.

Kingdom) in 1957 and especially at Three Mile Island (United States) in 1979, numerous safety studies did explore such a scenario and the risk was proclaimed to be highly catastrophic and unacceptable. At the same time, negotiations were held and agreements signed at both the regional and international levels, including some within the framework of the International Atomic Energy Agency (IAEA), regarding safety issues involving the less catastrophic type of radiation risks.

Both the pattern of response to the Chernobyl disaster and the rate of recovery from what was effectively the world's worst radiation disaster were correlated with a pronounced delay in starting international negotiations on this issue. The initial desire of the political elite of the former Soviet Union to conceal what was a major accident from the national and international public lay at the root of the unwillingness to initiate negotiations—first with the Baltic Sea states of Finland, Poland, and Sweden which, outside the Soviet Union, were the first to be affected by the fallout, and then with the other members of the European and world community, including international organizations. It took almost four months for the former Soviet Union as the "villain of the piece" to enter international negotiations. These negotiations involved numerous disputes about public safety in the affected areas, in particular, the safety of the foodstuffs produced there, and this made resolution of the various issues more complicated as well as delaying the signing of international agreements (Medvedev, 1990).

In spite of such complications during the negotiation process, two international conventions on early warning of radiation accidents and the assistance to be provided in the case of a radiation emergency or accident were signed as early as September 1986, five months after Chernobyl. The degree of cooperation in signing, the unanimity of the support of the parties, and the comprehensiveness of the coverage provided in these cornerstone documents were quite rare for international agreements of this type. The conventions laid the foundation for even more successful negotiations and for the signing of bilateral agreements between Russia and other European countries with an advanced nuclear power industry, including Baltic Sea countries (Denmark, Finland, Germany, and Sweden). This does not include the role these agreements played in fostering the disclosure of information, that had earlier been considered "sensitive," to responsible international authorities and to the public. Thus, the "right-to-know" principle was established in the area of nuclear and radiation risk management, and this provided a unique opportunity for nongovernmental organizations (NGOs) to become involved as a new and powerful party in such negotiations.

As a result, we believe that the mere perception of a risk as catastrophic, as such, is insufficient to trigger a negotiation process. It can help in identifying risk sources and assessing the catastrophic consequences of risk actualization (i.e., a hazard turning into a disaster). But it does not automatically get the parties to start immediate talks on the ways and means of minimizing or eliminating the risk of a disaster. Moreover, it ignores the development and implementation of risk reduction mechanisms, including developing, signing, and implementing agreements—a problem that is caused by the specificity of risk evaluation and risk communication by the

parties. This problem will be considered below, as will the party-related factors involved in dealing with the risks.

At the moment, it is only worth noting the role of risk actualization and immediate learning from disaster. Chernobyl invalidated the earlier perception of low event probability and prompted the decision makers to consider severe consequences in a very different way, including changing the way of communicating with practitioners, media, and the public. In turn, this had political impacts, triggering the parties involved in disaster response to start talks and jointly to develop and implement measures to reduce the negative effects of accident on human health (first-order risks) and public behavior (communication or second-order risks).

Proposition 2. Unlike man-made risks, risks from natural sources are usually perceived as more familiar and better understood; the parties will be better prepared to negotiate about such risks, will understand each other more easily during the talks and thus find it simpler to reach an agreement or compromise, and will show themselves more willing to stick to the agreed terms.

A discrepancy can be seen in the surveys of experts from the Baltic Sea states regarding the perceived priorities of different kinds of hazards as crisis policy issues. In some nations of the region the salience of political and social conflicts is thought to prevail over that of technological accidents. In others, floods and earthquakes are believed to be comparatively more significant policy issues than forest fires, and so forth (See Table 3).

Moreover, as mentioned above, both experts and the public perceive the risk of natural disasters as better known and more familiar than technological risks. Mutual solidarity and cooperation are more typical of collective behavior in crises caused by natural agents than in those sparked by social and political conflicts. In view of the differences mentioned in crisis policy priorities, modes of risk perception, and collective behavior in crises as factors influencing the parties' talks and setting agreements, one should logically expect international negotiations concerning natural hazards to be relatively more successful in terms of both discussions and implementation processes than those regarding man-made risks.

As in the case of low-probability, high-consequences risks, the experience available from the crisis management field shows that the support for this hypothesis would seem to be in principle or generic rather than unequivocal. For instance, one could try to compare the pattern of the parties' preparedness and response to the devastating floods in Europe with the major threat from the chemical weapons dumped in the Baltic Sea after World War II.

The major floods in Europe in 1995, 1997, 1998, and 2001 caused significant damage to the national and EU economies and thus set the agenda issue for talks between the responsible governmental bodies of the affected nations and the EU. These talks particularly concerned the feasibility and efficiency of the joint mitigation efforts and relief aid. As a part of these discussions the idea of the joint funding of such measures was introduced, but no formal agreement was achieved until late 2002. In the summer of that year, the disastrous flooding in Central Europe incurred considerable and, on certain occasions, unprecedented damage, with some

100 people dying as a result. Economic damage to infrastructure and the natural and cultural heritage was particularly severe in Germany (€15 billion) where, together with an economic slowdown, the floods pushed Germany's budget deficit close to the EU limit of 3 percent of GDP. The economic damage was considerable in the Czech Republic (€2–3 billion) and Austria (€2 billion) (Fuller, 2002).

During the talks, which began very soon after the flooding, the earlier idea of joint funding was discussed by the parties as part of a list of direct measures to be taken in the future to reduce the increasing risk of floods. The parties within the EU introduced a solidarity-based initiative to create an EU disaster-relief fund to aid member states and applicant countries whose citizens had suffered as a result of natural disasters and flooding, In particular, the Fund would also be used to secure damaged infrastructure such as dams and dikes to reduce the risk of future flooding. Assistance from the Fund would be granted on request under a tripartite agreement between the European Commission, the member state, and the region, with the selection of the risk-reduction projects being a matter for the country and region concerned (Fuller, 2002; European Union, 2003).

Revision of the 2000–2006 inter-institutional agreement and budget of the EU was required to establish the procedure for mobilizing resources of €1 billion for the disaster relief fund, as well as the adoption of a legal basis for operational procedures. Some experts believed that such talks, the signing of a comprehensive agreement, and the issuing of regulations could take a couple of years despite the agreement in principle among the parties. Particularly time-consuming would be deciding on issues regarding what event would constitute a disaster and what institution in Brussels should serve as a final arbiter in making this assessment so that money could be released to the affected area. To this time period should be added the delay of a few years from the first joint funding talks to ascertaining how ready and willing the parties were to set up an institutional mechanism to reduce the risk of a major natural hazard. Under Council Regulation (EC) No 2012/2002 of 11 November 2002 the European Union Solidarity Fund was set up so that the EU can respond in a rapid, efficient and flexible manner to come to the aid of any member state in the event of a major natural disaster (http://europa.eu/scadplus/leg/en/lvb/g24217.htm) (last accessed 24 June 2008).

However inadequate these efforts might be, they exceed those intended to reach agreement on implementing mechanisms to handle the huge environmental risk in the Baltic Sea region associated with the increasing oil transport and potential oil spills, along with the storage and dumping of toxic chemicals both on land and in the sea. For details, see Osokina (2003). Of particular concern is the issue of the chemical weapons dumped in the Baltic Sea after World War II in 1945 when the Allied armies seized more than 302,000 tons of German chemical weapons containing yperite (mustard gas), lewisite, and other extremely toxic substances. What is now known and increasingly worries both the governments and people, in particular, fishermen, in the Baltic Sea states, is the increasing threat to human and environmental health associated with such time-bombs ticking away on the sea bed.

In fall 1997 extremely high concentrations of yperite, arsenic, and heavy metals that had leaked from a dumped submarine were detected in waters off the southwest

of Sweden. That the pollution had shown a tendency to spread beyond the borders of the dump site constituted a major threat to the environment and potential disaster for the population of both the Baltic Sea and North Sea states, primarily its fishermen, who had to stop fishing. Given that these waters provide almost 2.5 million tons of fish and seafood annually, such a crisis was estimated to be damaging the interests of 80–250 million people living in Europe and outside.

This high risk called for intensive talks and energetic coping and mitigation measures by the parties concerned. However, to date, these have been insufficient and inefficient. One could mention only a few joint Russian–European surveys of the dumps in 1995–1997 and a couple of valuable high-level discussions between Russian officials and NATO chiefs in 1997. These negotiations were held within the Partnership for Peace framework that contemplated proposals made by Russian technical experts to stop hazardous leaks from the dumped chemical ammunition. These proposals involved using concrete pumped directly to the seabed to encapsulate the submerged vessels.

There was uncertainty among European experts as to whether this technology was the best available. Discussions then gave rise to the idea of international cooperation within a new project called *Skagen*. However, the political changes in Europe and the continuing economic crisis in Russia prevented this being implemented, and the joint dump surveys and multilateral consultations were suspended. While the negotiations resumed in 2000, only slight practical progress had been achieved by 2002. Different interpretations of the risk priorities by the concerned parties led to the wealth of data on the dumps collected in Russia and other Baltic Sea states in previous decades being incorrectly estimated, and this delayed the development of international legislation for handling such specific hazardous objectives. It also inhibited the development and implementation of safe technical solutions acceptable to all the parties to reduce the risk and prevent a major disaster occurring (Porfiriev and Vyalishev, 1999).

These examples show that a superior knowledge of and familiarity with natural as opposed to technological risk sources do, in fact, better prepare the parties to start negotiations on natural risk sources and improve mutual understanding during the talks. Such familiarity increases the odds of reaching an agreement and/or compromise and of parties sticking to the agreed terms. The odds of this happening in negotiations on technological risk sources are lower. Unlike in cases where dread risk factors are involved, as discussed above, familiarity improves identification of the risk sources and risk assessment; it also facilitates an earlier start to the talks regarding the mechanism of risk reduction and leads to a better understanding of the generic design of such a mechanism. However, it does not automatically guarantee that an agreement will be comprehensive, that it will be signed in a timely fashion, or that parties will show willingness to stick to the agreed terms and implement the agreement efficiently. These factors depend on another set of other conditions associated with the negotiating parties and their behavior.

This is particularly true if another type of man-made risk is considered, namely, social and political conflicts, among which modern terrorist attacks such as those by al Qaeda in the last decade should be particularly singled out. In terms of origin

these attacks have much in common with technological hazards. However, they are also just as familiar to the public as natural disasters; in fact, while supporters of terrorist attacks believe that they are a struggle for liberation and/or acts of retribution, the attacks are perceived by affected nations as being much more dreadful than natural disasters. The duality inherent in terrorism risks causes ambiguity in the way nations perceive and handle these risks. On the one hand, the perception leads to an increased readiness to negotiate and compromise, to the drafting and signing of international counter-terrorism agreements, and to the initiation of procedures usually used to confront natural disaster risks. On the other hand, however, there is less willingness to stick to the agreed terms and a frequent desire to reconsider the terms and make them less binding and more flexible. This puts the issue of negotiation on terrorist attacks close to that of technological risks. Particular examples are the case of Spain, which pulled its troops out of the coalition forces in Iraq in April 2004 after the Madrid train attacks, and other members of the coalition that have tried to do the same.

However, we argue that the reduced willingness to stick to the agreed terms and thus the efficiency of negotiations in the wake of major terrorist attack risks, as compared with agreements in respect of natural hazards, are primarily associated with the issue of equity and the equality of the distribution of risks and benefits among the specific parties rather than the hazard's "dreadfulness," familiarity with the hazard, and the knowledge of what it involves. It is for that reason that this issue is considered in more detail in the next section on party-related factors of risk negotiation modes.

Party-Related Factors: Possible Implications for Negotiations on the Major Risk Issues

The two surveys of experts in the Baltic Sea region, outlined above, involved two kinds of crisis management actors that play a key role in handling the major risk issues. One of these is institutions, primarily governmental bodies and organizations represented by negotiation teams that dominate as parties at the negotiation table. The other actors come from crisis research and teaching communities, which provide decision support to and training of the specific parties' negotiation teams. The surveys also provide data on the partnership preferences regarding the way crises should be handled. among the nations within the region and between the parties themselves and specific European institutions.

Given the discrepancies in risk perception and risk management modes among the crisis management actors caused by the various cultural, political, and socioeconomic conditions mentioned above, it would be logical to expect these discrepancies to have significant implications for the parties' behavior and for the negotiation process as a whole. In this connection, two further propositions are worth making, one concerning the types of crisis management organization that are parties to negotiations, and the other concerning these organizations' negotiating counterparts and the

experts and advisors to the negotiating teams. The brief comments on the propositions provide observations on and early testing of the hypothetical parties' behavior model which is based mainly on the cultural theory of risk perception vis-à-vis actual experiences. Though preliminary and generic, we believe that these comments will facilitate understanding of the degree of influence that party-related interpretations of risk have on negotiations.

Proposition 3. Given that most international negotiations on major risks are held by bureaucratic organizations at the intergovernmental level, the talks will tend to focus on rules and procedures to reduce or avert the risk in compliance with existing international standards or on the development of such standards. If an early compromise or consensus is reached and an agreement is signed, the residual risk will be considered as negligible or even zero.

The available experience of crisis management, in principle, proves the validity of the hypothesis. The respondents' replies to the questionnaires summarized in Table 4 show a number of governmental agencies that play a major role in development and implementation of national crisis policies, as well as in regional and international cooperation in this area. Common to all these agencies is that they are bureaucratic organizations with a world view and way of doing things that is typical of such institutions, and risk perception and handling is no exception. As the core cultural function of such organizations is to be functionaries, and the core work-ethic values are punctuality, diligence, and discipline, they cannot be anything but hierarchical and cohesive in their relations as a group.

This suggests that these organizations' interpretation of negotiated risks should be treated using a set of rules and procedures as in any other uncertainty. These rules are either established by existing standards and agreements or have had to be developed by special agencies and/or experts. Sticking to the rules and procedures is considered paramount for reducing or averting the risk perceived which is first and foremost seen as a debilitating factor for the bureaucratic organization and only then to society or to the international community. Negotiations on the risks posed by or associated with EU enlargement, particularly those concerning the Kaliningrad region of Russia, may serve as a case in point.

The EU accession process of the ten countries, including Baltic Sea countries, that joined the EU in 2004, brought with it several problems, some concerning the far-western Russian exclave of Kaliningrad. Kaliningrad has serious socioeconomic problems, including high rates of unemployment, crimes, and prostitution that are perceived by the neighboring EU applicants as a spillover risk. This, in turn, raises questions about the border regime, which is a significant problem in itself. The 1985 Shengen Agreement established a visa regime between the EU member and non-member countries. In the specific case of the Kaliningrad region, this implies that Russians coming to and from this region, mostly by rail and road across Lithuania, should apply to Lithuania for a visa.

This problem is further compounded by the issue of freight transportation between the region and "mainland" Russia across the EU border and thus, in theory, subject to EU customs regulations. The implication of this is that tariff fees are

being imposed on freight transportation between the two parts of Russia. The political circles and the majority of the public in Russia consider both issues a risk to the national sovereignty. In the immediate or short-term perspective this could violate the right of citizens to move freely and that of trading companies to freely transport goods from one part of the country to another. In the long-term perspective it could lead to the alienation of the Kaliningrad region, with it no longer forming an organic part of the Russian Federation. It is hardly surprising, however, that Lithuania and the EU looked at this problem in different ways and used arguments of their own (e.g., risk of increasing rates of criminality due to illegal immigration) to bolster their negotiating position.

This discrepancy in risk perception created a complex issue to be negotiated by the concerned parties. These were represented by the teams of professional diplomats from the European and Russian parliaments, foreign and interior affairs ministries, border control, and other institutions. The hot talks on the options for conflict resolution focused almost exclusively on procedural issues. As the Russians unequivocally rejected the existing standard of using visas, a compromise was found in introducing a special permit issued by Lithuania to those coming to and from Kaliningrad region via this country. When the new travel "standard" was agreed in 2003 the EU no longer considered this problem as a negotiated risk to the EU but as a bilateral issue between Lithuania and Russia.[5]

Proposition 4. The cultural commonalities that exist among nations and the particular professional areas of expertise of the actors involved in negotiations will reinforce each other, providing coherent or similar modes of risk perception on the part of the parties and thus facilitating understanding and an agreement or compromise by them. The professional experts' increasing involvement as policy decision-making advisors and consultants will add to the efficiency of the parties' talks and cooperative efforts to reduce the risk of major crises or disasters that may happen in the future.

The Baltic Sea states have a number of common features, including a shared geographic and historical heritage, that foster their cultural proximity within a wider European context. These play an important role in the development of cooperation in the crisis policy field among the countries themselves, especially neighboring states, and between the Baltic states and other European nations, including collaboration within the established regional institutions (See Table 5).

[5] Though formally correct, this could not but lower the level of negotiations. Given the complexity of the issue and the existing Russia–Lithuania border complications, this was bound to disturb the EU–Russia dialog and cooperation in the near future. We made this forecast in the draft of this chapter provided for discussion by the steering committee members of the Processes of International Negotiation (PIN) in June 2003, and it soon eventuated. On 21 May 2004 the EU and Russia signed a joint protocol at the end of negotiations on Russia's accession to the World Trade Organization, which suggests that the visa regime between the parties and solution of the main issues of the Kaliningrad region issue will be very quickly resolved. However, there remains a "residual" risk for implementation, given the significance of the remaining differences between the negotiating parties.

Moreover, the surveys of experts show the similarity between the key national coordinators or decision makers in this field; the background of all of them is the same institutional and professional type of law enforcement agency (See Table 4). These personnel tend to share basic professional values and world views despite an array of cultural and political differences; moreover, professional identity governs the behavior of group members to a greater extent than respective cultural prototypes. Some sociological studies even assume that, as disparities in risk perception among the countries are less pronounced than those among the different professional groups within a single country, the process of globalization may be causing national identities to be partially exchanged for professional identities (Renn and Rohrmann, 2000).

When, in negotiations on a possible or actual crisis or disaster, there is a professional and cultural overlap in the risk perception modes of the parties involved, as in the Baltic Sea region, it would be logical to expect a reinforcement effect that would facilitate the talks. Practical experience shows that this often does happen when professional crisis and/or emergency managers communicate directly or mediators are involved face to face.

One example is of the successful talks and cooperation built on the agreements reached in the late 1990s between high-ranking police officers on reduction of the increasing risk of drug trafficking and money laundering through Interpol. Another involves negotiation and cooperation between the national sanitary and veterinary services on minimizing the risks of outbreaks of bovine spongiform encephalopathy (BSE) and foot-and-mouth disease. Particularly worth mentioning are simulation seminars within the international crisis policy conferences organized in 1999–2002 by Crisis Management Research and Training Center in Stockholm under the aegis of the Swedish Emergency Management Agency (then ÖCB). The seminars modeled the decision making and negotiations among international teams from the Baltic Sea states on reducing fictitious risks and political crises (hostage taking, nuclear-powered spaceship accident, etc.). All team members, although coming from different backgrounds, had practical crisis management experience as either political advisors or, mainly, trainers. The seminars proved that professional commonality helps the parties to understand each other and to reach an agreement or compromise, whatever the risk being negotiated.

However, there is also evidence that this reinforcement effect fails to facilitate talks once political affiliations and negotiating team or party maneuvering outweigh professional competence and skills. Some scholars consider such maneuvering to be a specific part of political culture. Although this is not in dispute, we prefer to interpret this in terms of risk redistribution (i.e., the willingness of a party to shift the risk and thus make the benefit/ residual risk ratio acceptable). One example underpinning this observation was the official talks on the risks involved in going to war in Iraq.

Despite the undoubtedly high level of competence, as well as various common features in the professional and cultural backgrounds of the European parties, they disagreed in their evaluation of the expediency and the risks of a major military operation and its future implications. The key reason lay in the qualitatively varying

degree of political affiliation of different European nations with the United States. Within the Baltic Sea region, at the onset of war, Latvia demonstrated the highest level of support for the operations proposed by the United Kingdom, remaining a key European stakeholder in this issue along with Bulgaria and Spain. At the same time, France, Germany, and Russia were the key European opponents to this operation (the latter two being in the Baltic Sea region) and considered it a major political mistake.

The discrepancy in the interpretation of the risks involved is linked to different political affiliations. Judging by official statements made both unilaterally and during international talks, one could assume two completely different conceptualizations or images of risk (Renn, 1990). These comply with the key finding that people are risk-prone if the stakes are high in terms of gains and risk-averse if high in terms of losses (Kahneman and Tversky, 1979). Such conceptualizations are embedded in and guide the political thinking of the two sides.

Conceivably, decision makers within the relevant party apply a rational quasi-deterministic approach to evaluation of the operation. This reinterprets the above-mentioned "zero-maximum" concept in risk–benefit terms as maximum political and economic gains against acceptable and voluntary risk. One party might liken it to financial risk management, while the other might believe it to be closer to chess (Brzezinsky's "grand chess-board" of world politics) and even gambling (Brzezinski, 1997).

The opponents of this theory follow the precautionary approach to risk and risk management, at the core of which is the "do-no-harm" principle. This suggests the involuntary nature of the risk of war and results from a much deeper consideration being given to public perception and anxiety about the risks involved in war. This party perceives even the risk of triggering a chain of events with huge catastrophic potential, including a wave of new major terrorist attacks, as a random threat. The example of Spain's withdrawal from Iraq, cited above, shows that parties may occasionally reconsider their initial premises and that their perception of the "dreadfulness" or fairness of the risks involved can undergo a drastic change and move them to the opposite risk paradigm.[6]

Worth a special mention is the role of professional expertise and experts in shaping these two risk conceptualizations and their respective implications for policy-making, in particular, negotiations. Judging by the official statements and the comments of the proponents concerning a post-war future, one could infer that most of the decision making relies on expertise provided primarily by military, political, and

[6] To overcome this and other cleavages and to facilitate the negotiations on and the handling of such major risks, some experts propose setting up an EU security council. Its organization and composition could combine elements of the UN Security Council, where some countries are recognized as "more equal" than others and some of the United States, where all relevant agencies of the executive are represented. This idea is in tune with the political compromise to set up a modest military headquarters for EU-led operations, a deal first agreed by the "Big Three" (France, Germany, and the United Kingdom) and later accepted by all the EU member states. For more details see Everts and Missiroli (2004).

economic analyses. The earlier experience shows that expert assessments made by analysts of this kind tend to be technocratic (mission-and-means focused) and short-term- or, at best, medium-term-oriented. This makes such assessments volatile, with the value of risk often being reconsidered, sometimes as the complete opposite. Within the Iraqi war context one immediately thinks of the case of Dr David Kelly, the acknowledged United Kingdom defense expert whose dossier claiming that there was no real evidence of weapons of mass destruction in Iraq was made public in July 2003. His subsequent mysterious death considerably changed the public perception in Britain of the validity of the war and the risks in which they were involved.

These assessments contrast with the systemic and long-term approach typical of experts from the social and political field who are more concerned with the uncertainty of global implications in the more distant future as a result of change and associated risks provoked by the crisis in Iraq. Such expertise also actively uses cooperation within the research community and the knowledge and databases provided by academia and universities rather than isolated small "think tanks" and information limited to government agency sources.

The expert surveys (in Tables 7–9) reveal the different degree of development and the spectrum of research institutions involved in crisis policymaking in the countries of the Baltic Sea region. As the data provided do not distinguish the disciplinary area of the relevant crisis research community, there is no way of hypothesizing about what impact this particular aspect might have on negotiations, nor of using it as evidence in support of either of the two kinds of decision support mentioned above. However, from these data one could reasonably assume the active participation of the more established and active research community in Germany, Russia, and Sweden in discussions and talks about the major crises involving more comprehensive consideration and handling of risks, for example, the crisis in Iraq. These talks occur both at the official and public level, the latter providing the former with feedback that is crucial for decision making.

The point here is twofold. As the public perception and assessment of risk is more intuitive and less formal, its "basic conceptualization of risk is much richer than that of experts and reflect legitimate concerns that are typically omitted in expert risk assessments" (Slovic, 1987). Thus, to obtain the level of trust from society necessary to carry out crisis policy, political decision makers should consider not only the public's perception and assessment of risk as such but also the public level or degree of trust in experts, or more generally in scientists and government officials. This means that the professionalism per se of risk experts as policy advisors and consultants during negotiations guarantees neither more efficient talks nor cooperation among the parties in terms of reducing the possible ramifications of the major crisis or disaster. This makes the above proposition in this respect controversial, at the very least.

Closing Thoughts

This study of the interrelationship between risk interpretation by major crisis policy actors and negotiations on major risks in which these actors are involved as parties reveals an ambiguous picture. This ambiguity stems from the complexity of and also the lack of investigation of negotiated risks as a research subject, as well as from the pilot character of this study. Its findings should be considered as preliminary ones needing further in-depth exploration. However, some observations are already worth making at this stage of the investigation.

Above all, as risk perception and interpretation make up the core of risk communication among the parties, they should be considered as the key independent variables or factors of the negotiation process and its policy implications. This suggests that the parties' negotiating teams need to make additional and increasing efforts to study the issue in advance and learn from earlier experience in order to cope with the uncertainty and complexity. These requirements are coupled with the specificity of both the substance (risk) and its conceptualization by the parties that distinguish such negotiations from talks on "ordinary issues." A change in the composition of advisory teams is thus also required, so that teams comprise a greater proportion of social scientists, in particular, those who are expert in the sociology and psychology of risk.

The substance-related factors of risk perception and risk management are a salient issue for negotiations in two respects, the first being the risk sources. The study findings show that the delineation between natural and man-made risks—used traditionally in sociological studies of disaster risks to explain the variations in the way they are conceptualized and the behavior that they provoke—helps to only partly elucidate the peculiarities of the parties' activities. Instead, the distinction between, on the one hand, the risks associated with or fraught with conflict and, on the other, major crises where no conflict is involved is more important and productive in both analytical and policy terms.

It is additionally worth stressing that if one considers the substantive issue in a more generic way, the uncertainty and the complexity of risk as such provides a unique opportunity for political maneuvering (Renn, 1992). This brings the issue closer to the party-related factors of risk perception and risk management modes, which have even more significant implications for negotiations. The argument here is that, driven by specific political affiliation and preferences, a party or parties exploit the probabilistic nature of risk to place the responsibility on the opponent or to protract negotiations. This may involve the second-order risk of making negotiations, as such, a creeping crisis. This factor often outweighs the possible commonalities that exist between the cultural type and professional area of the parties and specific actors, which in other circumstances should reinforce each other, helping the parties to bridge the risk of perception discrepancies.

To some extent this problem could be mitigated by the bureaucratic type of organizations that dominate the negotiated risks scene, in particular, at intergovernmental level where most of those are disputed. The organizations of this type normally tend to reduce or avert the risk by focusing on rules and procedures that are in

compliance with existing international standards or by developing such standards. However, excessively sticking to procedural fine-tuning involves the second-order risk of losing the flexibility and creativity that are greatly needed by the parties to handle the uncertainty and complexity typical of international talks on risks.

This brings to the fore two more requirements for negotiating risks. One of these concerns the organization of the talks, in particular, the development of realistic criteria for reaching acceptable and timely agreement. A possible, but in no way unique, solution here could be the deliberate establishment of a low number threshold for agreement ratification.[6] The other requirement for negotiation on risk issues concerns the party's teams, both decision makers and their advisors. The available experience and data prove that these should be trained to a greater extent or talented in applying heuristic tools in addition to the usual procedures involved in talks on routine issues.

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The Multimodal Character of "Talk" and the Negotiation of Joint Financial Risk Management in an International Context

Bev Sauer

Introduction

In 2005 the World Bank published its (draft) *Principles for Effective Insolvency and Creditor Rights Systems (Revised)* to help countries "evaluate and improve core aspects of their commercial law systems that are fundamental to a sound investment climate, and to promote commerce and economic growth" (World Bank, 2001/2005, p. 1). The *Principles* are grounded in an "integrated" approach to debt insolvency and creditor rights systems that emphasizes transparency, accountability, and predictability as "fundamental to sound credit relationships" (p. 2).[1] To achieve this integrated approach, communication and full disclosure of information must be "combined with the good behavior of corporate citizens" in order to create "an informed and communicative environment conducive to greater cooperation among all parties" (p. 7). "Without transparency," the *Principles* warn, "there is greater likelihood that loan pricing will not reflect underlying risks, leading to higher interest rates and other charges" (p. 7). In the World Bank's terms, however, transparency exists only in *written* documentation. An agreement does not exist until "information is *assembled and made readily available to other parties" (author's italics)* (e.g., formalized in writing) (p. 7).

As the Bank's (2005) idealized *Principles* recognize, transparency is critical to successful joint risk management. Emerging markets show high levels of volatility and uncertainty that may undermine the lender's confidence in the negotiation. Because interest rates and currency valuations can change rapidly, it is to the creditor's

Bev Sauer
Johns Hopkins University, Baltimore, Maryland, USA, e-mail: bas65@georgetown.edu

[1] The principles are grounded in three fundamental 'propositions': (1) Effective systems respond to national needs and problems . . . rooted in the country's broader cultural, economic, legal and social context; (2) Transparency, accountability and predictability are fundamental to sound credit relationships; and (3) Legal and institutional methods must align incentives and disincentives across a broad spectrum of market-based systems—commercial, corporate, financial and social. (World Bank, 2001/2005, p. 2).

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advantage to conclude negotiations as quickly as possible to save money, increase confidence in the decision making, and avoid the costs of a lengthy legal process (p. 7). The more quickly creditors can come to an agreement, the better. Kargman (2004) argues that borrowers can leverage delays to their advantage, but delays can create distrust that undermines efforts to control and manage risk. As the debt crisis in Argentina demonstrates, codes of conduct too often lack transparency (Lavagna, 2005). Written reports that might have helped decision-makers were labeled "confidential" or simply not published (Lavagna, 2005, p. 122). In Indonesia, delays jeopardized the "renewed flow of credit" necessary to sustain growth in the economy as a whole (O'Sullivan, 1999, p. 2). Kargman (2004) thus outlines the "very significant transaction costs for the creditor institutions," including "a substantial investment of staff time for the respective creditor institutions"; legal and professional fees; and losses incurred because of legally imposed moratoriums on debt collection during the process (p. 1). Unfortunately, Kargman (2004) argues, even the most responsive foreign creditors "may not be fully prepared for some of the obstacles that they may encounter in some emerging market debt restructurings" (p. 1). Post-agreement documentation practices can delay a final resolution even after parties have reached a verbal (informal or formal) agreement if (a) the debtor revisits old issues or raises new issues; (b) the debtor introduces new issues (or reintroduces old issues) into the equation; (c) parties argue about whether the issues raised by the debtor fall within the scope of their original understanding as reflected in the term sheet; (d) debtors threaten to leave the negotiation table until all concerns are addressed; (e) debtors test creditors' "resolve" by introducing new issues that might delay the process (Kargman, 2004).

This chapter brings together research in risk communication, risk and decision science, negotiation, and linguistics in order to examine how the special circumstances of international financial risk management are influenced by the multimodal character of "talk" in the negotiation process. Part I provides an overview of the multimodal character of talk for those unfamiliar with linguistic and cultural research in speech and gesture. Part II describes the role of multimodal representations in international negotiations involving joint financial risk management. Part III discusses the special character of financial risk management as it relates to problems of documentation and transparency.

The questions at the heart of this volume ultimately examine how domain-specific discourses affect the outcomes of negotiation (a) at the conceptual level and (b) in practice (cf. Zartman, 1977; Neale and Bazerman, 1991). In applying research in linguistics to the understanding of talk in the negotiation of joint financial risk management, this chapter shows how the special character of domain-specific discourses may silently or saliently affect the negotiation process. These findings have particular importance for understanding the role of talk in domain-specific negotiations more generally.

The Multimodal Character of Talk

Talk matters in negotiation—so much so that the term "talks" is often synonymous with the negotiation itself. Talk helps participants open lines of communication, question stereotypes, and reduce misperception and miscommunication (Hazan, 2002; Spangler, 2004), but talk can also derail successful joint risk management if back-door discussions, behind-the-scenes consultations, and off-the-record meetings raise ethical and legal concerns about the transparency of the negotiation process, the goodwill of the negotiators, or the legitimacy of off-the-record promises (cf. Spangler, 2004; Stiebel, 1990).

In linguistics, "talk" entails both words (the semantic content of speech) and pragmatic speech acts that affect the outcomes of real-time social interactions in different social contexts.[2] More recently, linguists have investigated the multimodal character of talk. This research demonstrates that any single modality (spoken, written, visual, verbal, gestural, or tonal) provides an incomplete representation of the full range of semantic meanings that can be embodied in speech, gesture, and visual representation simultaneously.[3]

The multimodal character of talk helps explain why the choice of a communication medium ultimately influences the outcome of a negotiation (cf. Bazerman et al., 2000).[4] Despite calls for increasing transparency in international joint risk management, for example, written accounts may fail to capture the tacit understandings and contextually supported meanings that produce agreement (Eisenstein, 1993; Olson, 1994; Johnstone, 2000). Elaborate coding schemes may capture tonal variation, facial gestures, pauses, and dialectical differences, but these methods may be impracticable in official negotiations—even though different transcription methods can produce radically different representations of speakers' actual or intended meanings (cf. Johnstone, 2002). In international negotiations, poorly planned risk communication messages can increase distrust.[5] Second- or third-party negotiators and differences in first- and second-language competencies complicate the process (Babcock and Du-Babcock, 2001). Third-party agents may increase the likelihood of agreement, however, if they facilitate problem solving while keeping a low profile in the negotiation (Zlotkin and Rosenschein, 1996, p. 152; cf. Bazerman et al.,

[2] See Sacks et al. (1974); Goodwin (1981); Cassell et al. (1999); Schegloff (2000); Johnstone (2002).

[3] Roth (2002) provides an excellent review of psycholinguistic research in gesture.

[4] As one might expect, face-to-face negotiations are rich in social cues that have both positive and negative effects on the negotiation (Bazerman et al., 2000). In face-to-face communication, negotiators have access to signaling cues, information about the status of the negotiators, and information about tone and gesture that improve clarity in communication (DePaulo and Friedman, 1998, cited in Bazerman et al., 2000). Bazerman et al. (2000) cite several studies that show that negotiators achieved better outcomes (and higher joint profit) when they could not see one another (cf. Lewis and Fry, 1977).

[5] cf. Slovic (1999) if negotiators view culturally specific visual or verbal cues as rude or intentional (Fessenden-Raden, 1987; Fischhoff, 1998; Fischhoff and Manski, 1999; Fischhoff et al., 2003; Goldstein, 1998; Jacobson and Aaltio-Marjosola, 2001; Johnson, 1999; Lundgren and McMakin, 1998; Maylath and Thrush, 2000; Weiss, 1997).

1992). Gestures may also contribute to confusion if the semantic content of speech conflicts with the semantic content of gesture or if negotiators apply culturally coded or domain-specific gestures in new semantic contexts (Alibali and Goldin-Meadow, 1993; Calbris, 1990; Sauer, 2005). Finally, speakers gesture even in the absence of a visible audience (Alibali et al., 2001). As a result, listeners may not see important information conveyed in gesture in a conference call or long-distance negotiation.

Research in gesture thus challenges the primacy of speech (spoken or transcribed) as the unit of analysis for understanding the effect of communication media on risk decision making in an international context (Morgan et al., 2002; Sauer, 2003, 2005; cf. Goldin-Meadow et al., 1996; McNeill, 2000; McNeill and Duncan, 2000). As McNeill (1992) and others demonstrate, gestures convey semantic or iconic (visual) meanings that may be rendered invisible in written transcriptions of speech alone (cf. Levinson, 1996; Poyatos, 1981). Researchers have developed lexicons of culturally specific gestures (see Brookes, 2001; Calbris, 1990), but these lexicons are inadequate for understanding the function of idiosyncratic (individually produced) gestures (Kita and Özyürek, 2003); their role in communication (Kendon, 1981, 1992, 1996; Johnson et al., 1981; Krauss et al., 1991); and the audience's ability to interpret meanings in gesture in difficult cross-cultural situations (Brookes, 2001, 2004, 2005; Calbris, 1990).

The meanings conveyed in speech and gesture are not equivalent (Goldin-Meadow et al., 1996). Gestures convey features of manner and motion not possible in speech alone (McNeill and Duncan, 2000). Speakers can use gestures to demonstrate shifts in perspective along new dimensions of time, space, and form (Goldin-Meadow et al., 1996, p. 37; cf. McNeill, 1992; Sauer, 1999). Real-space relationships are not arbitrary, but speakers can use gestural space to represent dynamic systems, three-dimensional mathematical constructs, and abstract processes (McNeill, 1992; Liddell, 1995; McNeill and Pedelty, 1995).[6] Speakers may also represent two or more different perspectives of the same "real space" (McNeill, 1992; McNeill and Pedelty, 1995). These perspectives correspond to mathematically different conceptions of the (same) physical space that must be reconciled to achieve mutual understanding in the negotiation (Sauer, 2005; Gumperz, 1992; Gumperz and Cook-Gumperz, 1982; Hanks, 1992).[7]

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[6] Following Levinson (1996), researchers in gesture have described many different frameworks for categorizing gestural space: concrete and referential (McNeill and Pedelty, 1995); real space, surrogate space, and token space in American sign language (Liddell, 1995); topographic and referential (Emmorey et al., 1995). In real-time interaction, speakers use gesture to signal contextualization frameworks that must be continually recalibrated ("attuned") for new audiences and situations (Emmorey et al., 1995, p. 42). Real-space relations are "non-arbitrary" (Emmorey et al., 1995, p. 44), but gestural space can function on different (virtual, figurative, semiotic, referential, topographic, surrogate, and indexical) levels.

[7] According to McNeill (1992), speakers can assume two distinct viewpoints in gesture: an observer viewpoint and a character viewpoint. In the observer viewpoint (OV), the speaker keeps some distance from the narrative. In the character viewpoint (CV), the narrator is inside the story. The difference is apparent when a speaker describes someone running. In the character viewpoint, a speaker might move arms and legs like a runner. In the observer viewpoint, a speaker could represent another person running by wiggling the index and middle finger in rapid succession.

Unarticulated differences in gestural viewpoint may create misunderstanding if speakers do not share similar education or experience (e.g., in negotiations between workers and management). In long-standing intractable negotiations, differences in viewpoint may exacerbate underlying ethnic and economic conflict—particularly when one person's idiosyncratic gestures have highly specific, culturally codified meanings in another culture (cf. Brookes, 2005). Multimodal representations may facilitate inter-cultural and intra-cultural learning, however, to the degree that negotiators are free to try out multiple viewpoints rhetorically before settling on a final (written) agreement. This argument supports the Harvard Business School's construction of negotiation as a three-dimensional (3-D) strategy that entails interpersonal interactions (in 1-D negotiation); "dealcrafting" (2-D negotiation); and Big Picture thinking (3-D negotiation).[8]

The Role of Multimodal Representations in International Negotiation Involving Joint Financial Risk Management

As Salacuse (1999, p. 217) argues, "negotiating a purely domestic business deal and negotiating an international transaction have much in common." In this sense, negotiation is fundamental to (and often synonymous with) the processes of formalizing a joint risk management strategy.

Joint financial risk management implies that one or more parties find it to be in their mutual interest to cooperate in managing risk. Given a common culture, partners can focus on developing the most effective management strategy to address key variables and perceived risks. In any particular instance, this common culture might include agreement about economic fundamentals, common goals in the negotiation, and common economic outcomes. Both parties can then proceed from the trust that future difference can be litigated within a common legal, regulatory, and economic framework. In this sense, talk facilitates joint financial risk management to the extent that talk enables parties to (a) articulate obstacles to a successful negotiation, (b) resolve perceived differences, and (c) construct a mutually agreeable resolution.

As the examples at the beginning of this chapter suggest, international negotiations involving joint risk management may reflect less visible economic, linguistic, and political power differentials that affect how both parties define and work towards a mutually agreeable risk management strategy. To achieve successful joint risk management in an international context, parties must first agree upon a framework that enables mutually defined (joint) collaborative interaction, mutually acceptable definitions of risk, and mutually practicable management practices. The degree to which culturally dependent conditions, attitudes, and beliefs about risk are, in fact, negotiable will affect both the character and outcome of the negotiation.

[8] `http://www.exed.hbs.edu/programs/sn/`. See Harvard Business School. Strategic Negotiations: Dealmaking for the Long Term. Program Category: Negotiation and Managerial Decision Making, 4–6 June 2006.

Moreover, as the examples at the beginning of this chapter suggest, social and economic inequality may threaten the cooperative, collaborative, and conciliatory stance necessary to achieve mutually agreeable (joint) outcomes. Partners with greater resources may attempt to dictate terms to manage what they perceive as risky attitudes and practices in their negotiating partner. Economic fundamentals critical to successful risk management may not be negotiable (e.g., regulatory, legal, and tax structures). Currency valuations in unstable markets may derail attempts to fix terms in the negotiation. Well-meaning attempts to articulate social difference may destabilize already fragile cultural and economic relationships.

Even when negotiators believe that they have settled on a mutually agreeable resolution, word-for-word translations may misrepresent financial and economic practices. One official of the International Finance Corporation (IFC), for example, never translated the word "mortgage" in international deliberations. Instead, he used local terms to remind English-speaking participants that the "mortgage" they believed they were getting was dependent upon the structural and social frameworks that partners brought to the table.

Even when participants are aware of the linguistic and social nuances of speech relevant to the negotiation, the multimodal character of talk necessarily complicates the negotiation of joint financial risk management in an international context. First, national and international credit systems reflect underlying structural, institutional, legal, and social practices that are not easily communicated in real-time negotiations or, more important, captured in writing (World Bank, 2001/2005, p. 2). Second, there are rational limits to full disclosure in oral, written, and gestural communication. High and low context cultures, for example, differ in the degree to which information may be assumed to be present in the semantic and para-syntactic acts (linguistic behaviors that provide context or clues to meaning, including tonal variation, speech, and gesture) that constitute the negotiation (cf. Funakawa, 1997; Hall and Hall, 1990). As the previous discussion suggests, moreover, individual decision-makers may misinterpret gestural meanings in new situations, create idiosyncratic meanings, or extend culturally specific (quotable) gestural forms to new contexts. Gestural forms are ephemeral in real-time negotiation. As a result, they may not convey meaning to individuals preoccupied with other aspects of financial risk management (e.g., reading data on a spreadsheet). In the best-case scenario from a linguistic standpoint, negotiators would have access to video or digital recordings that could be replayed to decipher and identify gestural meanings, speech gesture mismatch (see Church and Goldin-Meadow, 1986; Bower, 2005), or shifts in gestural viewpoint (see Sauer, 2003), but negotiators may resist the use of recording devices in the early stages of a negotiation when ambiguity, amorphous representations, and flexibility work to their advantage.

Although the World Bank (2001) *Principles* define transparency in terms of full disclosure, transparency can also derive from structural coherence that produces conceptual understanding. Because full disclosure can also overwhelm decision makers and decision systems, negotiators must work to identify key variables that reveal trends and assist decision making in the negotiation.

Graphical representations, spreadsheets, and automated financial decision tools improve communication because they simplify the enormous task of making sense of rapidly changing data in international contexts. Gestures may also help individuals construct flexible, spatially and temporally dynamic representations of underlying social and institutional structures not possible in speech alone. Idiosyncratic gestures provide insight into the cognitive maps and decision frameworks that help individuals order and interpret information in the negotiation. Speakers may use gesture to represent literal institutions, figurative models of corporate liability and accountability, or invisible but no less influencing cognitive mental models that may not be apparent to participants in the negotiation. These gestures may represent three-dimensional systems-level structures, two-dimensional cognitive maps, as well as chronological (linear) structures that represent the "costs, complexities, and uncertainties" of the legal process, the allocation of risks, and options for restructuring debts in the negotiation (cf. World Bank, 2001/2005, p. 8). These structures may emerge collaboratively in the negotiation as negotiators work together to construct a common framework for joint risk management. As Larkin and Simon (1987) demonstrate, however, "a diagram is (sometimes) worth 10,000 words" if and only if speakers understand the underlying cognitive and spatial frameworks, cultural and linguistic norms, and disciplinary standards that make interpretation possible. If a multimodal analysis yields clues to these underlying interpretative frameworks and supporting assumptions, the methods for capturing such information and the methods of interpretation must be negotiated as part of the decision processes and evaluation systems that underpin written resolutions and formal agreements in the negotiation.

Moreover, as the language of the World Bank (2001) *Principles* suggests, the notion of structure is both explicit and implicit in joint financial risk management. The resolution of debtor–creditor relations, for example, involves debt restructuring and the creation of new debt structures. Because speech and gesture together can provide more robust conceptual structures than speech alone, multimodal communication may thus facilitate the processes of negotiating verbal agreements. Gestures define professional knowledge (Goodwin, 2003). They facilitate thinking about three-dimensional dynamic constructs (Goldin-Meadow, 2003). Speakers can "try out" new ideas in gesture just as they try out new ideas in words.[9] These new gestural structures provide a range of problem-solving strategies that individuals can apply to reduce and manage risk. These gestural representations can also facilitate debt restructuring if speakers attend to the visible gestural structures created in the negotiation. Bazerman and Neale (1992) argue: "Restructuring how information is used in making decisions ... may make thinking rationally about negotiation more

[9] As Alibali and Goldin-Meadow (1993) suggest, moreover, gestures play an important role in children's learning during periods of transition from one state of knowledge to a new understanding (see also Goldin-Meadow, 1998; Gentner and Goldin-Meadow, 2003). Sauer (2003) suggests that it is equally possible that adults can use the dynamic three-dimensional spatial and temporal flexibility of gestural representations to try out new ideas and explore new solutions to problems that resist the linearity of verbal (written) solutions.

effective in reducing bias. We found that simply changing the way information is presented can limit the impact of the anchoring-and-adjustment bias" (p. 114).[10]

When negotiators attempt to capture verbal agreements and gestural decision frameworks in writing, they may inadvertently create the kind of delays that Kargman (2004) describes as derailing negotiations (above). More important, these delays may be interpreted (or misperceived) as deliberate attempts to stall or undermine the negotiation in a seemingly unending cycle of documentation, interpretation, misunderstanding, and the elaboration of context (see Witte, 1992).

Ultimately, the linguistic complexity of international financial risk management complicates the processes of negotiation to the extent the speakers use multiple languages to construct meanings in speech and gesture, but complication itself does not necessarily create obstacles in the negotiation. From a linguistic perspective, the delays that occur in the report-writing phase of the negotiation (cf. Kargman, 2004) are not necessarily disruptive attempts to rethink previously agreed-upon resolutions, but rather the necessary rethinking that must occur as negotiators attempt to toggle between oral and written representations of the same event.[11] The processes of transformation are difficult (and thus create delays) to the extent that *speech and gesture* (e.g. talk) or *speech and writing* (talk-transcribed) convey different dimensions of the agreement that require different forms of elaboration in written reports and summaries of the negotiation for different audiences with different purposes. Talk matters, in short, because it embodies dimensions of joint financial risk management—its spatial and temporal dynamism, the speaker's viewpoint in relation to events, the tension between systems-level and local perspectives, and the three-dimensional cognitive frameworks that negotiators apply to structure agreements in the negotiation—not possible in any single modality (speech or writing) alone.

The choice of communication media also affects the outcomes of negotiations to the extent that each medium embodies different modalities (oral/written; visual/verbal; gestural; spoken) that in turn shape and reflect the speaker's perspective and the structures of decision making at different points in the negotiation. As a result, ordinary notions of translation as a one-to-one equivalence of semantic meaning may not represent the more complex processes of reconciling local and systems-level perspectives embodied in speech and gesture. Semantic meanings embodied in gesture may also create misunderstanding and misperception if (a) the semantic content of speech conflicts with the semantic content of gesture or (b) negotiators' gestural viewpoints create confusion. Third-party translators and mediators may also increase the communication complexity of meanings conveyed in speech and gesture. Finally, ordinary verbal ambiguity and faulty or inaccurate translations add further complexity.

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[10] Preliminary studies at NASA Goddard Space Flight center demonstrate that systems-level thinkers produce complex three-dimensional gestural representations that they can use to refigure linear (written) solutions to difficult and uncertain problems (Sauer, unpublished data).

[11] Sauer (2003) describes the processes as rhetorical transformation that occur when individuals transform information designed for one audience into new modes of communication for new audiences with different expectations, education, experience, and institutional assumptions.

The Special Character of Financial Risk Management

In the United States, both the Sarbanes Oxley Act of 2002 and the International Financial Reporting Standards (IFRS) have placed new demands on financial risk managers to improve transparency and accountability in financial risk management (Cearns, 2005; Hansen, 2004; Jermakowicz et al., 2005; Pennsylvania Bar Institute, 2002; Rieger, 2006). These new regulations have increased the burden on companies to improve communication and documentation practices related to risk. Unfortunately, many risk managers view compliance as "filling in the boxes" on complex accounting and auditing schedules that seem unrelated to the intentions of "full disclosure" and ethical practice articulated in the World Bank's (2001) *Principles*.[12]

As with other terms in the negotiation, linguists and financial risk managers lack commensurate vocabularies to talk about accountability, risk, transparency, and compliance. These differences can be reconciled, but these differences reveal how domain-specific communication practices affect both the process and the outcomes of negotiation.

For financial risk managers, transparency and accountability are embodied in "documentation"—discrete documents designed to comply with IFRS and Sarbanes Oxley reporting standards—or costly internal controls designed to insure the integrity of financial information. From this perspective, (1) the writing processes that produce "documentation" are "reporting functions" that sum up the (already-completed) work of the negotiation process; (2) both the written agreement and its documentation are external to the processes of negotiation; and (3) the writing process is "black-boxed" in both the decision-phase and the reporting phase of the negotiation process. Fig. 1 depicts the separation between the decision-phase and the reporting phase of the negotiation.

For linguists, the communication modalities and decision structures that threaten to derail the real-time negotiation of financial risk are, of course, rendered invisible in the final written documents, financial reports, executive summaries, and final recommendations that constitute the formal endpoints of the negotiation. In rationalized models of negotiation, details of contents and idiosyncratic communication practices are black-boxed in graphical representations that conceal the real workings of individual negotiations (cf. Stole and Zwiebel, 1996). In idealized (rationalized) financial systems, "debtors do not stall the negotiation, and cross-cultural misunderstandings do not interfere with the movement of information between human agents in the negotiation" (Stole and Zwiebel, 1996, p. 385). Differences in underlying mental models are also rendered invisible in both graphic and mathematical

[12] The World Bank (2001) *Principles* require "full disclosure of basic information—including financial statements, operating statistics and detailed cash flows" (World Bank, 2001/2005, p. 6). The Bank (2001) assumes that "auditing standards [on both sides] should be compatible with international best practices so that creditors can assess credit risk and monitor a debtor's financial viability" (p. 6).

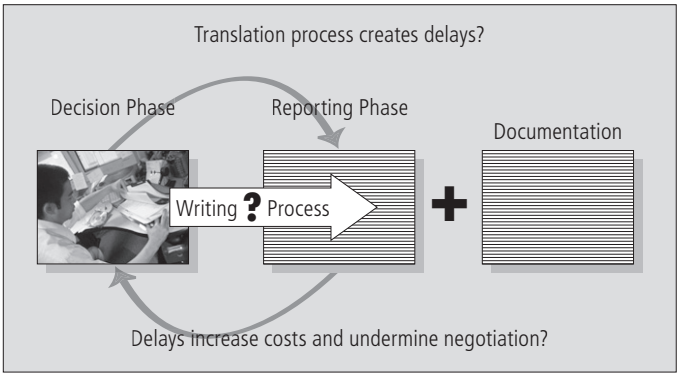

Fig. 1. The separation between the decision and reporting phases of the negotiation

formulations of the process.[13] Because communication is invisible in the design of the ideal financial agent and communication is assumed constant, researchers have not investigated how domain-specific communication practices intersect with critical factors like timing in the negotiation process.

Historical pressures and recent scandals in the United States and Europe have challenged purely rationalistic notions of financial risk management. The demand for transparency has also changed the character of financial risk management, focusing greater attention on the decision strategies, ethical rationales, and explanatory accounts that justify particular risk decision models. As the World Bank (2001) *Principles* recognize, "insolvency and creditor rights systems ... lie at the juncture of this duality" between communicative (e.g., cultural as well as cognitive) and rationalistic financial systems. In emerging financial systems, "new methods of commerce, communication and technology are constantly reshaping national markets and redefining notions of property rights" (p. 1). "Credit and investment risks are measured by complex formulas, and capital moves from one market to the next at a computer key" (p. 1). Despite the increasing computerization, "capital flows are driven by public perceptions and investor confidence in local markets" (p. 1). As the World Bank (2001) recognizes, "national financial systems operate autonomously and respond to domestic needs" (p. 1). At the same time, "national systems are tied to and interact daily with the systems of their trading partners" (p. 1). If "effective systems are ... rooted in the country's broader cultural, economic, legal and social context, credit delivery is [equally] handicapped by lack of access to accurate information on credit risk and by unpredictable legal mechanisms for debt enforcement." (p. 1). To achieve transparency in this sense, negotiators must be able to articulate their underlying rationalistic conceptualizations of risk in real-time (unbounded) naturalistic situations; identify critical variables in the decision process (cf. Hastie

[13] In artificial intelligence models, individual agents are given "utility functions" that do not allow them to relax their goals, compromise, or achieve partial but lasting success (cf. Zlotkin and Rosenschein, 1996, p. 153).

and Dawes, 2001); work closely with stakeholders to understand risk perceptions; and develop collaborative Big Picture (systems-level) strategies to guide the negotiation (cf. Neale and Bazerman, 1991, pp. 89–90). They must develop a reflexive understanding of the effects of different communication media and the role that modality plays in conveying cognitive structures and semantic meaning.

Unfortunately, most people face cognitive limitations that prevent them from achieving pure rationality in real-time interactions (Simon, 1957, cited in Neale and Bazerman, 1991, p. 13). Despite their best intentions, individuals misread situations because (a) their own cognitive biases create barriers to understanding; (b) they lack "information search techniques"; or (c) they use "unaided memory for coding, storing, and retrieving information" (Neale and Bazerman, 1991, p. 83). Neale and Bazerman (1991) thus outline a set of communication strategies to help negotiators "identify what constraints might keep the negotiators and their opponents from acting rationally . . . [and] . . . improve their cognitive assessments of their opponents" (p. 14). "Absent legally enforceable rights," financial risk managers must resort to persuasive methods to achieve their goals in the negotiation. As Kargman (2004) argues, "Creditors have been forced to face borrowers from a position of extreme weakness, and, as a result, many borrowers have found themselves under no real pressure either to pay their debt or to restructure" (p. 4).

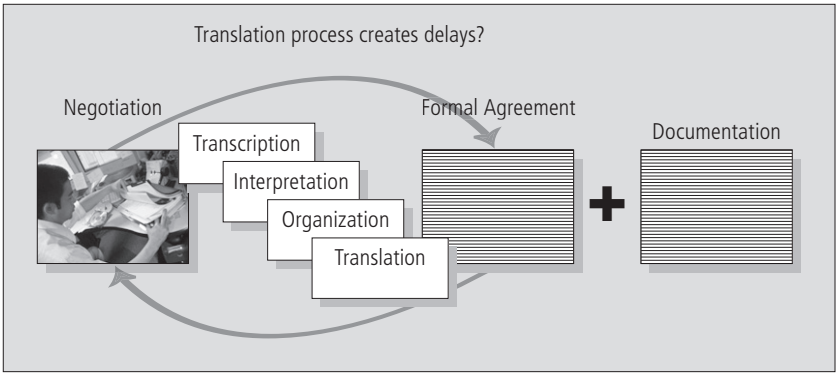

Fig. 2. The negotiation process as an ongoing process of multimodal communication interactions

Fig. 2 refigures the negotiation process as an ongoing process of multimodal communication interactions that must be continually transformed, reinterpreted, and translated across disciplinary and cultural boundaries for new audiences with new purposes. In Fig. 2, transparency emerges as a continuous (kinetic) process of rhetorical transformation and renegotiation leading to a final (but frequently unstable) moment of stasis. These transformations enable audiences to make judgments that support the decision processes that constitute joint risk management. Each transformation enables negotiators to explore new dimensions of risk from new perspectives. The written agreements that constitute the endpoint of the negotiation produce explicit agreements—financial statements, creditor and debtor promises,

repayment schedules, balance sheets, and monitoring—and supporting documentation that must articulate the explicit tacit processes, assumptions, predictions, evaluation procedures, and assurances that warrant the predictions, findings, and recommendations in the negotiation. These underlying processes may be "documented" in written "documentation" or they may be tacit in the norms and assumptions of disciplinary and institutional practice.

Financial risk management takes this process one step farther, rendering written agreements into formal metrics and formulas that can be automated and monitored to assure future compliance. On the one hand, rationalized financial models misrepresent the dynamic complexity of real-time negotiations by under-specifying the assumptions, communication problems, and idiosyncratic differences that constitute the context of the negotiation. On the other hand, rationalized financial models have predictive power because they help negotiators identify key variables that affect the outcomes of the negotiation, provide metrics for assessment and evaluation, and facilitate continuous computer-assisted monitoring of large numbers of financial transactions. The special character of financial risk assessment may thus increase the burden on negotiators to the extent that risk decisions are highly uncertain in the best circumstances and additionally complicated by rapidly deteriorating institutional and social conditions that accompany international negotiations regarding insolvency and bankruptcy.

Conclusion

Financial risk negotiations are most difficult when negotiators seek to create autonomous systems that reduce or eliminate human complexity in the risk equation. If this goal constitutes the special character of joint financial risk management, then financial risk managers have indeed set themselves apart from the institutional uncertainties and cultural complexity that characterize ordinary negotiations. This chapter demonstrates the degree to which the taken-for-granted multimodal cognitive and communication practices that constitute talk may be invisible in written transcripts of the negotiation and thus absent from research in negotiation as well. The less visible but nonetheless critical multimodal processes that constitute talk play an important—if unrecognized—role in risk perceptions and risk decision making in the negotiation. They explain why particular media have particular effects in the negotiation. Finally, they provide a model for understanding the special character of disciplinary discourse more generally.

As McCloskey (1985) demonstrated in her groundbreaking work in the *Rhetoric of Economics*, the communication practices that constitute financial risk decision making—axiomatic reasoning, metaphor, stylistic complexity, narrative form—are not "mere" rhetoric. They are the fundamental tools that economists deploy in economic reasoning. Style matters as argument; metaphors are apt because they fit the data as well as please the ear. This chapter is thus not news to most rhetoricians and linguists, for whom the rhetoric of the disciplines is an object of empirical and

qualitative study, but it opens the door to new empirical research investigating how specific modalities intersect with rationalistic and cognitive studies at particular moments in the negotiation process.

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Negotiating Risks across Cultures: Joint Ventures in China

Guy Olivier Faure

"There are more things ... likely to frighten us than there are to crush us."
(Seneca, Epistles, Book 1)

Introduction

If "politics is the art of taking good decisions on insufficient evidence" (Benedick, 1993), then international negotiations and the joint decisions they produce come under much the same heading. Many decisions in international negotiations involve risks, but negotiators are often unable to evaluate how significant the risks actually are because of a lack of data. In addition to the concrete aspects of risk, the perception of risk plays an important enough role for it to affect the way actors conduct negotiations.

Risk should be considered as a social construct, a complex product of society, a combined human/mass media phenomenon that integrates rationality at several levels: factual, psychological, and cultural. The attitude toward risk varies depending on the society or the culture, but the notion of risk—the way it is understood—changes drastically from one culture to another. Attitudinal differences regarding risk, with all the uncertainties that they embody, have found their way into the communication and consumption of information. Indeed, over the years media orchestration of the ways in which society consumes information on risk has become a major element of public life.

Those involved in negotiations about issues with inherent uncertainty often have to take a certain amount of risk themselves when they negotiate. No one knows, or can know, what the ultimate outcome of such a negotiation will be or how it will affect oneself or others (Sawyer and Guetzkow, 1965). In this chapter we will

Guy Olivier Faure
Sorbonne University, Paris, France, e-mail: guyolivierfaure@yahoo.fr

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consider how people from different cultural backgrounds—national, ethnic, organizational, or professional—handle negotiations on fuzzy issues or those that address unpredictable outcomes. To do this, we will study a typical case: the joint venture investment scenario, where two parties wish to pool resources to enter a new market. A classic illustration is the establishment of a joint venture that includes technology transfer. The promising but risky context is the Chinese market.

At the end of the chapter, we will draw lessons from the various ways of coping with risk in this type of context and evaluate the major difficulties that these approaches raise. Special emphasis will be placed on the cognitive aspects as they develop on both sides and their strategic consequences.

Risk as a Social Construct

Whenever data are ambiguous or in a state of flux, risk becomes part of the human behavioral dimension. To reach a desired outcome, the individual organizes his/her actions by setting objectives and defining a way forward in line with the risk involved and its associated costs. In any activity, whether a certain outcome has been achieved is determined not only by objective data but also by the manner in which the outcome is portrayed, that is, in terms of constructed social images. What actually constitutes reality for an individual is formed by the social experiences that shape his thinking (Berger and Luckmann, 1966; D'Andrade, 1984). Thus, risk, as internalized by actors, is a social product born of experience and culture.

In some cultures, risk is simply viewed as a statistical value, a probability. In other cultures when risk becomes reality, it is often interpreted as God's Will, the implementation of Divine Justice to punish the unfaithful. Natural catastrophes are viewed in some societies as a manifestation of supernatural forces, an intervention of evil spirits that inflict upon people the treatment they deserve. If a risk becomes reality, this may also suggest destiny, a preordained fate that balances the good and the bad, rather like the act of some silent court of justice.

The concept of risk used in this chapter is taken in its most universal formulation, as suggested by Avenhaus and Sjöstedt in the introductory chapter of this book: "A risk represents the possible negative consequences of current or potential phenomena or events." Risk, however, does not just relate to an action that can be performed by an autonomous decision maker. It also applies to a situation that is outside a person's own control, such as an earthquake, a stock exchange slump, or the seizure of assets by a government for political reasons.

It is the intransitive concept of risk that is considered here. Our focus is not on ways of behaving that can generate risks but on situations whose outcomes lies outside the actors' control. A risk will have a bearing on whether an outcome is negative or not. Yet although individuals, groups, organizations, or governments can be offered an incentive or dealt a deterrent so that a given outcome can be achieved, no one can prevent a tidal wave or stop a volcano erupting. Thus, a risk in this sense

is not only something beyond human control, it is also something hypothetical, a possibility.

Culture and its Influence on Risk

The French writer and politician, Edouard Herriot (1948) defined culture as being that which remains when everything else has been forgotten. This paradoxical proposition captures one of the most salient properties of culture, namely, that it is not a matter of substance but a way of thinking or acting of which the individual is usually unaware. To be more specific, culture can be defined as "a set of shared and enduring meanings, values, and beliefs that characterize national, ethnic, or other groups and orient their behavior" (Faure and Rubin, 1993). Culture may be understood as a system of widely accepted beliefs and assumptions that are transmitted from one generation to the next through a learning process. These pertain to individuals and their interactions, the relationship between people and their environment, as well as the way people consider nature, space, time, or major events in their lives. Clearly, we are influenced both by reality and by our perception of reality. We tend to act according to beliefs and values provided by our culture. "The role of culture is to answer questions even before they are raised," observes the French sociologist Akoun (1989). However, culture cannot just be treated as if it were computer software, for it provides not only orientations for action but also meanings; and it also contributes to establishing, asserting, and preserving identity. In a short-term perspective, culture can be viewed as a kind of structural component that conditions human behavior and operates in a deterministic way, leaving an enduring imprint on people. In a long-term perspective, it is a dynamic social phenomenon that provides changes over time through the integration of new values and the rejection of old ones.

Culture may influence the process and outcome of a negotiation at different levels of cognition, beliefs, behavior, and deep-rooted stakes.

Cognition

Culture affects how problems are framed and how negotiation itself is perceived and assessed; culture will influence, for example, how a negotiation is structured, the type of encounter that takes place, the nature of the game being played by the actors, and what the rules of the game are. Diverse elements such as historical memory, stereotypes, and personal experiences may strongly influence the actors' perceptions; they can reveal where possible compatibilities among cultures may lie as well as influencing how productive each partner is likely to be in a joint project. To optimize the negotiation, both similar and converging viewpoints need to be found so that the interaction can be enhanced. If this is impracticable, rules of compatibility will have to be constructed to allow negotiators to pursue their task as efficiently as possible.

Beliefs

The stakes in a negotiation are framed—both actually and symbolically—by the beliefs and values inherent in a culture. One example is the way in which some types of situational power have been culturally legitimized: in an African village, the elders always have the final word; in the former Soviet Union, the Party could never be wrong; in a court, the judge is the decision maker.

Such values operate as instrumental goals and strongly influence negotiators' attitudes toward the process, the other parties, and the possible outcome. The values emphasized, however, can vary considerably according to the culture and society; and the norms of justice that should apply to the building of an agreement may be viewed very differently from one culture to the next. For instance, the polluter-pays principle is viewed by some societies as unfair because it does not take into account the financial circumstances of the polluting party concerned. In a case like this, the efficiency of a negotiation would not be measured by evaluating the substance of the outcome in cost–benefit terms; it would be assessed according to the fairness criteria applied at the start of the negotiation.

Behavior

Behavior includes all elements intrinsic to the act of negotiating, including the strategies and tactics based on the cultural values and judgments of the negotiators. Communication, both verbal and non-verbal, is one of the fundamental elements of negotiation. A lack of congruence between the different communicational codes used by the parties will cause misperceptions on each side regarding the behavior of the other.

Deep-Rooted Stakes

In an asymmetrical relationship, the weakest often feels culturally vulnerable and becomes defensive, and this may make him identify very strongly with a particular stake in the negotiations, with the result that the stake in question changes to assume his external identity and his self-image.

Hofstede (1980) shows that the behavior of negotiators may be classified according to four basic cultural dimensions: 1) the power distance between actors; 2) the tendency to avoid uncertainty, which is narrowly related to stress and instability; 3) individualism, which deals with the relationship between the individual and the collectivity; and 4) masculinity, which relates to ambition, defined as the desire to achieve, to compete, to improve one's position, or to earn more. For comparative purposes, national cultural profiles can be characterized with the help of these indicators. For instance, the Swedes have less respect for authority than the French (with a score of 31 to 68); they are more collectively minded than the British (89 to 71); and their desire for achievement is considerably lower than that of Americans (5 to 62).

We can consider the tendency to avoid uncertainty as a way of scoring low on a risk-taking scale. Hofstede (1980) used three indicators (rule orientation, employment stability, and stress) to isolate clusters of countries that are low risk takers (such as Latin American or Asia–Pacific countries) or, in contrast, high risk takers (Scandinavian and Anglo-Saxon countries).

Risk and Negotiation in the Cultural Prism

An examination of the two concepts, risk and negotiation, and the use that is made of them raises a number of questions. Is there any overlap between these concepts? What could possibly link them together? In what specific fields could each of them be applied?

The concept of risk, as the French generally understand it, is a danger that is more or less foreseeable. Uncertainty is the state of being uncertain or unpredictable (Pruitt and Rubin, 1986). Uncertainty appears when the information needed for decision making is difficult or costly to obtain or when it is simply unavailable. Where several options exist, uncertainty may deal with the value of alternative solutions. Decision making under uncertainty also entails risks, as underlined by Winham (1977).

As far as decision makers are concerned, the risk avoiders are described as "unadventuresome" and "unwilling to expose themselves to dangers or hazard risks of either a material or physical character" (Touzard, 1977). Clearly, the concept of risk in the social sciences derives from that of uncertainty. It is because uncertainty cannot be eliminated that a risk may be incurred. Uncertainty has to do with the lack of information available regarding the occurrence of an event, the state of nature, or a facet of human behavior. In negotiation theory, risk itself is conceived of in terms of action. It can be described as the degree to which there is a possibility of achieving a certain outcome and what the corresponding cost would be. Risk refers simultaneously to the attainment of the objectives and to failure or catastrophe.

In behavioral terms, relationship with risk varies according to culture, as shown by Hofstede (1980). The concept of risk as a social construct may also vary according to culture, in common with other concepts belonging to the negotiation domain such as conflict and negotiation (Faure, 1995). As noted previously, in the French culture, risk is associated with danger, which shows how highly subjective such a notion is—it conveys the idea of trespassing beyond safe limits to get into the unknown, the uncontrolled, the non-understandable, or the irrational.

As far as conflict is concerned, Deutsch (1973, p. 10) indicates that "a conflict exists whenever incompatible activities occur. . . . An action that is incompatible with another action . . . in some way makes the latter less likely or less effective." Pruitt and Rubin (1986), building on various definitions from Webster's dictionary, adopt a more restrictive meaning of conflict as a "perceived divergence of interest or a belief that the parties' current aspirations cannot be achieved simultaneously." Both these Anglo-Saxon definitions are part of the same approach, namely, that of identifying

as conflictual any situation in which one of the actors is perceived as not entirely capable of reaching the goals he is seeking on account of the other actor.

Hubert Touzard (1977), working within the French culture, gives a perceptibly different meaning to the word conflict. For him, a conflict is a situation in which actors aim for goals that are different and that support contradictory values—essentially, a situation in which the goal sought or the means chosen to attain it is total control of the other's behavior. There is, in such an understanding of conflict, a necessary degree of antagonism between actors that is much higher than that inherent in the Anglo-Saxon concept. A reference dictionary such as *Le Robert* confirms this assumption, by defining conflict as a war or encounter between contrary elements that oppose each other and by giving, as synonyms for "conflict," "antagonism" and "fight." In the French language, the verb "to oppose" is a strong term, connoting powerful antagonism. In some way it is the antonym of the English verbs "to compromise" or "to come to terms with."

The Chinese have a similar understanding of the word conflict that is usually translated with the sense of fighting or struggling. Here again, it is quite clear that the concept of conflict covers quite distinctive meanings. Cultural bias is thus already firmly anchored in basic linguistic tools. One can posit cultures where, semantically, risk integrates not only dangers but also opportunities, and others where it refers to something much more negative, such as a threat to life or an unrecoverable loss compared with the original status quo.

Biologists, ecologists, social scientists, lawyers, engineers, politicians, and businesspeople all have their own definition of risk. Moreover, when a problem occurs, each professional culture makes its own type of diagnosis. For instance, if someone is hit and killed in the street by a car, a great variety of causes will be invoked. A medical doctor may state that the person died because he lost too much blood; a psychologist may declare that the person had an unconscious death wish; a sociologist may blame modern society for killing him; a lawyer may explain the cause as a lack of compliance with regulations because he did not cross the street at a traffic light.

The point is for each profession to tackle risk in a way that makes it at least partially controllable while at the same time demonstrating that one is capable of tackling risk and thereby reassuring oneself. Demonstrating capability is a way of justifying one's approach, legitimizing one's discipline, showing one's skills, and validating one's status. The reassurance function is part of the psychological dimension. The point is to convert internal anguish deeply rooted in the personality into a fear that can be anchored to concrete objects and thus given the appearance of being controllable.

The acceptance of the reality of a problem, its recognition, and acknowledgment, are widely culturalized because they depend closely upon predominant values, beliefs, and social norms. What is seen as acceptable in one society, however, may be viewed as intolerable in another and elicit extremely different types of reaction. Compare this with attitudes to violence, lies, and death which are more easily accepted in some cultures than others.

When can we consider an event as a real problem, as the failure of a project? Taking water as an example, and depending on the society concerned, a failure could be acknowledged when water tastes bad, or creates health problems, or causes fish to die, or causes people to die. Again, social values set the stage for assessing when a concept can be applied.

The focus of the evaluation may also be based on discriminating factors, as in perceiving the glass to be half-full or half-empty. Some societies put the emphasis on the outcomes of actions and their related benefits, while others tend to prioritize costs and inconveniences. It is when these ways of looking at things are collective that they leave the individual psychological domain and pass into the realm of culture.

The case of the Louvre Pyramid (which serves as the main entrance to the Louvre museum in Paris) is typical of negotiations on issues that obviously include risk. The design concept was based on the principle of colorless glass covering the entire structure. However, at that time (1984), no suitable material existed. Nevertheless, the project finally got off the ground because the parties to the decision considered that technical research could meet this challenge on time, and they were proved right.

In the same way, one Western company operating in China successfully negotiated to buy equipment that was still at the prototype stage, even though there was no assurance that mass production of the components could be achieved, especially within the very tight cost framework envisaged. Here the divisional organization of the company selling the equipment came into play. Although the engineering department was reticent about finishing the testing on time, the sales department was committed to winning the contract.

Different meanings of the notion of risk are revealed even where the same phraseology is used. The way people in different cultures behave when confronted with risks also provides useful insights. Where, for instance, should a "safety net" be put? When, exactly, does one consider that one is entering a "danger zone"? To what extent does a culture or a social group consider it has to apply Murphy's Law (i.e., plan for the worst, as the worst will always happen)? The case of road traffic in a city illustrates this point in a particularly relevant way. In the West, the space left between vehicles when one overtakes another is far wider than it is in China, where drivers do not think twice about brushing against each other. In the same way, a Chinese pedestrian will cross a street with very heavy traffic that no Westerner would dare to. Neither case shows Chinese people to be more reckless than Westerners. The Chinese see no special risk in dealing with heavy road traffic in circumstances where Westerners would clearly see one. However, they have done very little in terms of exploring the world down through the ages, even though they have always possessed the requisite technology to do so. Westerners, however, have traditionally been much more daring explorers.

The psychological process whereby the Chinese easily handle what would be considered a risky situation by Westerners is called occultation. Occultation is more often than not what gives the Chinese their hyper-optimistic view of the economic evolution of market trends and also what makes it extremely difficult to get them to

agree to costly measures to prevent risks that they themselves consider imaginary. For them, a situation like this could be framed as "negative entrapment," as conceptualized in the chapter of this book by I. W. Zartman. Being asked to weigh a real cost against a hypothetical possibility may seem to them like taking part in a *marché de dupes*.

For the Chinese, the notion of risk is more strongly related to imagination than to objective reality. That, for instance, is why so many people are killed by trains on railroad tracks in China. In the Chinese language, risk is expressed by two associated characters, *feng* and *xian* (literally "wind" and "critical point"), and means both danger and opportunity. Thus, risk has a much more ambivalent connotation than in Western cultures, where it is systematically associated with the idea of danger.

Risk and Negotiation

Risk assessment is part of the information normally available to negotiators. In the Sawyer and Guetzkow (1965) model, the authors include risk assessment among the conditions concurrently influencing the negotiation process through the actors' strategies and the tactics that they implement. In Zartman's three-phase sequential model (Zartman, 1986), the determination of risks and costs belongs to the diagnostic phase, before the formula reached for closing the deal is translated into specific details. In Zartman's model, the transition from the pre-negotiation stage to the negotiation table is conditional upon risk-and-cost determination—a condition whose importance is widely validated by empirical studies and field observations. During the two following phases, formula and details, negotiations cover how to handle the issues involved, including risk.

Risk management usually involves negotiation among the various parties concerned. In the West, negotiation is defined as a way of accommodating diverging interests within a mutually acceptable formula. Thus, bargaining is viewed as a very broad activity dealing with issues such as family plans for the coming weekend or how to share a cake among children, as well as freeing hostages or bringing war to an end. From cooperative activities to highly conflictual interactions, the concept of negotiation has a very broad scope.

A non-Western culture, such as the Chinese culture, radically contradicts such a view, linking negotiation to a much narrower and more specialized understanding, namely, conflict settlement. To capture the precise content of the concept of "negotiation," one must distinguish it from its cooperative aspect, discussion. In the Chinese language to negotiate (*tan pan*) is literally a combination of two ideas, talking and making judgments. While the global orientation is basically conflictual, to discuss (*tao lun*) connects two activities, searching and exposing, and is thus primarily a communication exercise that aims to achieve a cooperative end. In a case like this, harmony, a central value in the Chinese culture, is never challenged, whereas, in the case of a negotiation, it is broken. If negotiation is suggested to a Chinese person, he will interpret it as acknowledgment of an adversarial attitude. Thus, in the Chinese

culture, not only does the concept of negotiation fail to coincide with its Western equivalent in the linguistic sense, it is also highly value-loaded and incorporates a social judgment.

Similarly, there is evidence of a semantic disjunction between the Arabic and Western concepts with regard to the number of ways of expressing what, in the West, is called negotiation.

Business Risks in China: The Case of Joint Ventures

The setting up of a joint venture is a typical case of negotiation on a risky subject. To invest in a foreign country may be considered as a case of decision making under uncertainty, but to create a joint venture is a negotiation intended to confront a high number of risks. These risks do not just relate to the market and its evolution but also the legal/administrative context within which the new entity will operate. Moreover, one of the most important risks to be faced is the would-be partner, whose intentions, capabilities, and solvency can never be taken for granted. The topic studied here is negotiation regarding the establishment of joint ventures in China, which integrates the highest number of risk factors that can be met in any business investment.

A joint venture in the context of China may be defined as an independent Chinese legal entity with limited liabilities that is jointly funded and operated by Chinese and foreign partners. The foreign party must provide a minimum of 25 percent of the total investment; the parties can make their investment in cash or in the form of technology, equipment, land-use rights, or other assets. There is no shared capital; the parties' actual equity contributions make up its registered capital, which is held by the parties in proportion to their contributions. Profits, risks, and remaining assets must be shared in the same proportion (Faure, 2000c).

The slogan "getting rich is glorious" has found deep resonance at all social levels in China (Faure and Bouteiller, 2005). Since China first began opening up to foreign investment, it has made foreign investment one of its main axes for development. Over 400,000 joint ventures have been approved by the administrative authorities during the last two decades "in conformity with the principles of equality and mutual benefit" and "in the spirit of friendly cooperation." These enterprises are a key element of the strategy of transition from a formerly centrally planned economy to a market-oriented economy. The capital investment brought in by foreign parties, as well as their technology and know-how, gives China substantial advantages in terms of industrial modernization. In return, foreign companies are attracted by the potential size of the domestic Chinese market and the low labor costs.

From a corporate point of view, a joint venture plays the role of "gap filler." Through such ventures, Chinese companies acquire competencies that they would otherwise lack and that they are unable to develop on their own. Typically, they seek out partners experienced in entering new markets, expanding their technological capabilities, gaining access to local resources, obtaining political support, and sharing financial risk. In practice, the Sino–foreign joint venture appears to be quite complex

in nature. It is the product of two enterprises from different cultures (both national and organizational), with dissimilar levels of technological development and management based on very different principles. Furthermore, the basic question of the autonomy of the joint venture is constantly challenged because it lies at the confluence of two rationales: 1) the market, which presupposes self-determination; and 2) filiation, which involves a strong hierarchical dependence on the parent enterprise. These particular features make it a unique type of organization characterized by a high level of uncertainty, and this raises a number of questions concerning its capabilities in terms of performance optimization. Keeping business costs to the minimum is the responsibility of the owners and managers of the joint venture. However, this creates a situation which is beneficial to both sides in that it creates "mutual hostages" (Kogut, 1988) in terms of operational control and cost regulation.

The negotiation to set up a joint venture is a crucial stage because it foreshadows how the joint venture will operate in terms of process (based on relations between the parties) and outcome (a fair distribution of resources). If serious, solid, sustainable foundations have not been laid during this phase, if misunderstandings have not been cleared up, and if a common mindset and cooperative values have not been established, then the huge basic risks inherent in such a project may simply challenge its existence.

The Method

There are risks for both parties in a joint venture; however, the company operating far from its home base in a still unknown land will be inclined to consider that it is running the highest risks. While the research outcomes here are presented from the viewpoint of the Western negotiator, we have observed that interacting with Westerners also raises a considerable number of problems for the Chinese. Thus, wherever possible, we have also striven to reflect the risks perceived on the Chinese side and the way the Chinese tend to handle them. Sometimes, the trepidation felt by one of the parties regarding risks is ignored by the other party or perceived very differently. The uncertainty inherent in this type of project may thus lead to classifying the joint venture as more of a joint "adventure."

Conceptually speaking, the difference between risk and uncertainty is usually considered to be as follows: with risk, the various possible options can be probabilized; with uncertain events, they cannot. In the type of situations investigated here, we consider that there is still a strong connection between both concepts, given that a risk can be defined as an uncertain success or as an uncertain negative outcome. Consequently, under the concept of risk we are dealing with dangerous events that are subject or not subject to probabilistic calculation.

The report that follows is the result of field research conducted in China in the areas where most of the Sino–foreign joint ventures have been established: Shanghai, Beijing, Suzhou, Xian, and Tianjin. Altogether, 89 interviews were carried out with negotiators. These were in-depth interviews in which the negotiators were free

to disclose whatever issues they considered as risky, to structure their own perceptions, and to recount them in their own words. The interviews were conducted either in English, French, or Chinese. No questionnaires were used at any time.

The Context

The Chinese context presents a number of characteristics that de facto involve many risk factors. China is a market that is potentially huge but also highly uncertain because, except for a few very large urban centers, it is not well known. Thus, it is very difficult to accurately anticipate the evolution of consumers' needs. The legal framework in which the economic activity unfolds remains fuzzy and subject to arbitrary interventions from the public administration and the political authorities. Authorities interpret and enforce the laws in rather unpredictable ways in China. Laws are often incomplete, and the decrees needed to put them into practice can take years to be issued. Furthermore, there are regulations or internal laws (*nei bu*) that cannot be invoked by foreigners but can be used in matters that concern them directly (Faure and Bouteiller, 2005). However, some memoranda written to enforce regulations simply contradict these rules. In the domain of customs duties, for example, it is not unusual for permission not to be granted based on a simple memorandum that opposes an international agreement.

The cultural context also has certain peculiarities that make the negotiation difficult and the outcome uncertain. Chinese culture with its opacity and inherent linguistic ambiguities makes the negotiation process far more difficult to understand and to manage in China than in the West (Fang, 1999). It is, in fact, impossible to rigorously clarify a situation, which is a necessary precondition if one is to grasp all the variables influencing the action and to—at least partially—control them. As, in the Chinese tradition, only devils move in a straight line, the level of underlying uncertainty is always quite high, irrespective of efforts made to reduce it. The Chinese rank very highly on the scale of what, in the West, is called Machiavellianism. A classic test used to assess Machiavellianism (Christie, 1999) includes such statements as:

- The best way to handle people is to tell them what they want to hear.
- Anyone who completely trusts someone else is asking for trouble.
- Never tell anyone the real reason you did something, unless it is useful to do so.
- It is wise to flatter important people.

Thus, in China, as well as all the objective risks a company can run, there are cultural risks that need to be dealt with. The concept of risk is among the most significant elements of these cultural risks, operating as an invisible Great Wall. The Chinese tend to understand the fuzziness of the context as a source of opportunities, while the Westerner who is not as used to operating in "gray areas" has a much more negative view. This makes the Chinese side promote what its Western counterparts consider as a hyper-optimistic if not dream-like vision of market potential.

The rationale of saving face is also a vital part of the Chinese culture (Bond and Hwang, 1986). In many cases a deadlock or a breaking off of negotiations is a preferable outcome. If feelings of real humiliation arise at some stage of the negotiation, it becomes imperative for the so-called victim to regain face. Usually this requires the implementation of distributive or coercive tactics that distract the parties from the search for an optimum agreement. The negotiator must also bear costs of a psychological nature. Trying to get into the analytical mindset of the other party is always tedious—for the Chinese, following the lengthy rigmarole of Western logic; for the Europeans, listening to the holistic and metaphorical approaches of the Chinese. Westerners constantly run the risk of making their counterparts lose face without having realized what they have done, thus being unable to salvage a situation that they still view as productive; whereas the Chinese look for an opportunity to exact revenge when they feel they have been offended.

The indirect game typically played by the Chinese also tends to obscure the situation and to occult the usual landmarks familiar to Westerners. For instance, the Chinese custom of never saying no or smiling even if the negotiation does not meet their expectations leads to a number of misunderstandings and an increase in the risks. Viewed from the Chinese side, the difficulties created by Westerners are just as great and just as difficult to manage. Westerners are perceived as somehow whimsical—extremely enthusiastic at first but, once the project is agreed, often reluctant to implement it. In addition to their strategic inconsistency, Westerners are often seen as assuming an arrogant attitude as soon as technology comes under discussion, behaving as if they are the only ones really capable of inventing new technology and applying it correctly. At the same time, Westerners, though wishing to transfer technology to gain an advantageous position in the Chinese market, are often reluctant to share the latest technical developments with their partners or to provide them with the relevant details. Western parent companies, according to the Chinese, also tend to state as a basic principle that the joint venture as a legal entity must have complete autonomy, but then try to design a system that transfers some of the benefits of the joint venture back to themselves. Their reluctance to adjust to the complexities and fuzziness of the Chinese economic and legal context reduces the Chinese partner's maneuvering space, thus creating a considerable number of difficulties for it. Strongly focused on technical aspects and business issues, Westerners do not take enough time to listen to their Chinese counterpart, build a friendly relationship, and take into consideration its views, thereby failing to devote enough care to establishing the solid foundations that are a prerequisite in the Chinese business world. The first consequence is that the Chinese side never knows for sure if the Western side is really a partner or just someone seeking personal advantages (Faure, 2000b). With Westerners contributing so much uncertainty to the relationship, it is no wonder that their real intentions and strategies seem so unfathomable to Chinese counterparts.

The Chinese concept of negotiation, which is essentially a zero-sum game, increases the level of risk for the foreign partner, especially when the establishment of a joint venture is involved—a joint venture, by definition, being a positive-sum game. As the demands of Chinese etiquette, especially in the domains of politeness and face saving, would seem to prevail over the need for truth, the Westerner is left

with the impression that the counterpart is constantly lying to him, and this increases the amount of uncertainty with which he is confronted.

Finally, the Chinese propensity to copy or to counterfeit is such that a foreign investor providing technology, equipment, and products lives under the permanent risk of seeing them diverted or copied, sometimes by the partner himself. An international commission has evaluated the proportion of counterfeited software in China at 98 percent. Counterfeiting affects all types of products, from spare parts for high-tech equipment to drugs.

The Chinese culture generates risks of its own for both Chinese and foreigners. These characteristics make the level of risk so high that few people wish to run it. The cultural differences between the Westerner and the Chinese, with the host of misunderstandings these involve, only add to the risk.

Setting up a joint venture in China may thus be summarized as a negotiation to create an autonomous legal-economic entity whose limits are fuzzy, operating in an opaque context, with unclear goals, and partners involved in an ambiguous relationship. All these elements converge to create a particularly risky situation for the making of joint decisions.

Joint Venture Negotiations

There are several types of problem needing to be resolved when a joint venture is set up, each corresponding to a specific stage of the negotiation process. This lengthy and highly complex process can be divided into four stages, each one resting on a particular rationale: 1) preliminary investigation; 2) business proposal (formula); 3) contract negotiation (details); 4) implementation (Faure, 2000b).

The aim of the preliminary investigation is for the intending investor to become more familiar with the Chinese market and its peculiarities, assess the market potential, develop a network of contacts with companies and public authorities, and, with any luck, find a suitable partner. The selection of a compatible partner is a crucial stage; it is arrived at mainly through collecting data to assess the profitability of the project, the potential counterpart's reliability, its financial situation, technical capacity, the quality of its distribution channels, and the value of its connections with the public authorities. While the technical aspects can be dealt with relatively easily by investigating the plant, checking the production lines and equipment, and testing the final products, this is not the case with the other aspects. A great deal of uncertainty is involved that will disappear only when the joint venture reaches the operating stage. In a number of cases, the risk will turn into a negative outcome. It is not unusual, for instance, to have a partner that ultimately lacks the resources to implement the joint venture contract and whose knowledge of the local market and network connections is insufficient to make the joint venture successful. The opacity and the fuzziness of the business context add considerably to the difficulties.

The business proposal phase is intended to assess the compatibility between the parties' objectives and their common views on market strategy. It concludes with a

joint letter of intent and a feasibility study. The letter of intent aims to show the commitment of each party to the project. It usually deals with business scope, markets, total investment, the contributions of each party, basic joint venture terms, corporate control structure, origin of technology, and duration of the joint venture. The feasibility study is usually carried out jointly by both parties; its purpose is to assess the potential profitability of the joint venture and define its production plan and operating conditions.

The contract negotiation takes place after the public authorities have given their approval to the feasibility study. At this stage, all the conditions for setting up and operating the future joint venture will be discussed, such as rights and obligations for each party and their respective contributions in terms of capital, technology, know-how, and other resources. The negotiation also addresses issues concerning the management of the joint venture, its decision-making structure, its personnel management policy, and the conditions for the termination of the joint venture. Issues such as trademarks and licensing fees, pricing of future products for sale on the domestic market, and export prices are also discussed. This phase is quite complex, as it deals with issues that require very different types of expertise—technical, financial, managerial, and legal. For example, the pricing of products directly impacts the length of time necessary to reach the break-even point, but there are other variables such as the market positioning of the brand compared with the competitor's own brands.

The implementation of the agreement is the last stage in the overall process. After the agreement has been signed by both parties, one might think that negotiations are complete, but this is not usually the case. At this stage, surprises may crop up. For instance, there may be unexpected changes in the business environment, working conditions, or raw material supplies. When doing business in China, one cannot simply rely on the virtue of the written contract; renegotiations are just par for the course.

Risky Issues

To negotiate the establishment of a joint venture is to produce a virtual outcome, to construct something that, at best, will exist only later. Add to this the risk dimension, and the negotiation simply becomes a means of solving a hypothetical problem. In a case like this, therefore, negotiation can be viewed as a virtual exercise regarding a hypothetical object. Its only reality is a written contract, which will come later on in the process.

The range of risks incurred in a joint venture negotiation is extremely broad. These risks relate not only to the object of the negotiation, namely, the legal entity to be created, but also to the negotiation process in terms of the negotiation coming to nothing or the outcome not being viable. Two categories of risks may be distinguished: the first substantial, the second relational. As in any negotiation, the way the process is handled has the most important bearing on the result achieved; in the

same way, the substance of the joint venture is strongly dependent on the way the negotiation unfolds. Thus, it may be quite difficult and somehow artificial to separate these two categories. Taking a risk as a negotiator is sometimes managing the risks to which the joint venture may be exposed in the future.

A number of risks are run and dealt with during a joint venture negotiation. Among them, the most recurrent dangers are:

- The risk of conflict of interests between the partners once the joint venture is operating;
- The risk of cultural mismatch between the Chinese and the Western sides;
- The risk of business failure;
- The risk of technology leakage;
- The risk of downgrading the trademark image;
- The personal costs for the negotiators; and
- The political risk.

The setting up of a joint venture follows a very specific process in which two stages would seem to be crucial: 1) pre-negotiation; and 2) fine-tuning the details of the agreement. During the pre-negotiation phase a potential partner is chosen, the feasibility of the project is investigated, and a more accurate idea is gained of the means and intentions of the counterpart. This applies, of course, to both parties. At this stage, enthusiasm may considerably occult the perception of the project's inherent risks. However, one of the major risks lies in the way a partner views the basic purpose of the company: to address the market together with the other partner or to use the joint venture opportunity to gain advantages at the partner's expense, in the same way that mismanaged development aid, subsidies, and contributions sometimes go into the pockets of individuals rather than being invested in the project.

In joint venture negotiations, the establishment of a formula on which the agreement is to be based is something that is relatively fixed and cannot be greatly varied. In the formula phase, the most obvious risk to deal with is technology leaking. It is legally and practically possible to set up a joint venture that does not include technology transfer, but it does not make much sense for a Western company to enter the Chinese market on that basis, as there would not seem to be any clear competitive market advantage in not transferring technology.

When negotiating the technology transfer, the Western side is caught in a dilemma. To sell its technology to the joint venture at an advantageous price, it has to disclose a certain amount of information to convince the Chinese partner. If it does not do this, the latter will simply consider that the value of the transfer is just the cost of copying a few hundred pages. On the other hand, if it discloses too much information, the Chinese side may think it has learned enough and can now manage by itself. If the joint venture negotiation does not end in agreement, the Western side runs a serious risk of having its technology illegally appropriated and used by its former counterpart. Normally, the technology should be transferred only to the joint venture, and the Chinese parent company should under no circumstances be the recipient.

Using the foreign brand name to market the future products of the joint venture is a basic requirement on the Chinese side and an essential condition to success in the Chinese market, where consumers are very eager to buy famous foreign brands. However, there is an obvious risk for the Western side, for if the quality of the manufactured products is not up to the expected standards, the reputation of all the products sold under this brand name will be harmed. Even if the general manager of the joint venture is a Westerner, he/she is far from being able to totally guarantee the quality of these products no matter how tightly controlled the production line is.

A Chinese saying observes: "A journey of a thousand miles begins with a single step." However, when the negotiations enter the concession-making phase, the enthusiasm apparent at the start and the satisfaction in creating the joint venture are gradually subsumed into the logic of effort, and cost sharing, and making compromises. Here, the Chinese resort to an indirect approach, never saying openly what they want, and this leads Westerners to assume that the Chinese side has a hidden agenda that must be revealed. The negotiation phase, during which the details are dealt with, is often a very antagonistic stage in which third parties may need to become involved as mediators. If a satisfactory balance cannot be found between the resources brought by each of the parties to the joint venture on the one hand and the constraints of the market on the other, the partnership will be characterized by a high degree of risk and the whole project could be in jeopardy because the joint venture will ultimately be ill equipped to adapt to external forces.

There are a huge variety of ways of assessing the financial situation of a Chinese company engaged in joint venture negotiations, and this gives rise to evaluations that are frequently contradictory. For instance, one method of evaluation will make a company look profitable, whereas another will show it to be running at a heavy deficit. To take one example, research can be listed as either expenses or fixed assets; the classification chosen can make a huge difference, especially where high-tech companies are concerned. Thus, when a party clearly does not know the value of what it is planning to buy, this type of situation must be perceived as a risk to be either run or not run, accordingly.

The way many Chinese companies deal with accounting also contributes to increasing the level of uncertainty regarding the joint venture's future balance sheet. The Chinese company will often run an "official" accounting system in parallel with a "real" one that supposedly reflects the actual performance of the company. The first balance sheet will often show a deficit or very little profit, while the second may present the company as highly profitable. The problem is that some of the "real" figures may result from illegal business transactions that leave no concrete traces. This is another indication that Western companies seeking to enter a joint venture with a Chinese company run a very real risk of being the victim of, as noted above, a *marché de dupes*.

The main structural risk inherent in the establishment of a joint venture is that of creating an unbalanced entity, which will trigger constant attempts on the part of each individual partner to gain more power. To counteract this type of situation, a "paralyzed" structure can, of course, be set up under which either party has the

power to prevent a decision being made but cannot make a decision on its own, in other words, where no strategic decision can ever be taken.

On modern stock exchanges, companies' prospects are assessed partly on their performance and partly on what is called human capital. In the same way, setting up a joint venture can entail risk not only in the economic, financial, and technical dimension but also in terms of the people who will make up the human capital of the joint venture. One reason for the failure of many mergers, alliances, and joint ventures is that the partners have been unable to create a common corporate culture. This is a crucial issue in Sino–foreign joint ventures, where it may be impossible to predict if the cultural chemistry will work.

There are probably two factors on which decision makers can base tactical choices regarding the way a joint venture is set up: 1) what they expect to earn; or 2) what they are prepared to lose. The first will make them think in terms of market strategy, encouraging them to negotiate whatever parameters will contribute to optimizing the joint venture's performance. The second will lead to negotiation, where the aim is to control the level of possible losses and thus minimize disadvantages. The risk management issue can then be handled in terms of joint decision making—head office will manage risks, just as a banker would manage a stock portfolio: by distributing investment in joint venture projects according to the principle of diversification. The joint venture negotiator, however, cannot protect himself by resorting to a tough strategy and thus faces a much higher level of risk.

Risk Perception and Communication

Sometimes risks can be perceived only with the benefit of distance. In contrast, in China, risks are discerned clearly only when people are immersed in them, and then the rosy picture of the new gold rush turns into a marathon of challenges with fuzzy rules and unclear objectives. In such a context, risk is Janus-faced. Crucially, it is assessed differently by each party, and that requires not only a number of adjustments but also a harmonization of views, without which there can be no joint project. The differences in assessment, though partly synergistic, can also create a deadlock effect, inducing dynamic and cooperative discussions and also confrontation, conflict, and impasses. Risk thus can simultaneously unite and divide parties.

As already indicated, neither party negotiating on joint venture issues has the same perception of the potential risks. There may be an important cognitive side to this. The dimension of "cognitive complexity" is perceived in a much more relaxed way by the Chinese than by their Western counterparts. The holistic cultural approach developed by the Chinese integrates the various components of the overall situation. In contrast, the Western analytical approach with its sequential chain of moves is worth only its weakest link. In other words, in the Chinese perception the overall value of the whole set is taken as the basis for the overall evaluation of the risk; in the Western perception the weakest element is used as a focal point for

assessing the project. It is unusual for the parties to communicate at all regarding complexity perception and the hidden mechanisms involved in it.

Venture framing is another essential factor that influences perception. Nothing is less certain than that both parties will frame the project in similar terms. The penchant for gambling in the Chinese character, which leads to the stock exchange being seen as a huge casino, incites the Chinese to take risks. They see the joint venture not as an enterprise in the Western sense but rather as a provisional asset that should yield well and yield quickly. When the day comes that it no longer pays, it should be discarded. Undoubtedly, such a disjunction in framing terms will affect the actors' propensity to risk. Again, communication between the parties on this issue is very limited, with the realization that there may be a misunderstanding dawning only when they compare their respective forecasts.

With the scarcity of available data on which to base joint decisions and the often unreliable character of these data, taking a risk on an issue like the market is inevitable. Both parties will work from assumptions that are produced in obviously incompatible ways. Westerners use market studies to take a look at what the competitors are doing. The Chinese prefer to rely on experience, on their broad knowledge of society, and on intuition. The limited availability of technical data on which to base decisions leads to more discussions but not to a very clear consensus on what are the real risks run by the joint venture and their possible related costs.

As the local partner, the Chinese tend to have an overconfident attitude in terms of their own capabilities and the ultimate success of the project, an attitude that is strengthened by their quasi-mystical belief in the power of Western technology. They thus tend to ignore or to underestimate some of the most basic risks involved and make errors of judgment regarding issues such as market/product compatibility. Westerners, on the other hand, are much more cautious and tend to see problems and pitfalls at every step of the joint venture operation. While the two parties do communicate on these issues, the final agreement usually reflects the formality of the situation rather than the reality. If the Western side overemphasizes the difficulties, the Chinese side might ask it to invest more money to alleviate the problems; but if the money argument is stressed too strongly, the foreigner could be deterred from investing in China because the costs would be too high relative to potential profitability. If, on the other hand, the Chinese side puts too much emphasis on so-called market opportunities, it may lose its credibility or could risk losing face when the real facts emerge.

Each side usually has limited knowledge of the other side's cognition. However, as discussing this would touch upon the thorny issue of the other party's identity, each party continues to rely upon its own perceptions of the counterpart, the business context, and the market potential, carrying on discussions as if using a completely shared language.

"The mouth smiles, but money smiles better" is a traditional Chinese saying. For most parties to a joint venture negotiation, the core of the discussion will be the "hard" issues, such as how much the contributions of each party are worth. The Chinese tend to consider that Western technology is already in the public domain and should be transferred free of charge. The view of Westerners is that being obliged

to buy land use rights in China is a way of making "easy money" from foreigners, both in principle and in terms of the price level quoted. Thus, each side strives to undervalue the contribution of the other, engaging in a process of "reactive devaluation." This process introduces strong biases into the assessment of the project risks, preventing both sides from grasping the realities of the situation. There is no specific communication between the parties on the risk of building a project on foundations that each party has assessed incorrectly, because neither party perceives them as such. However, contributions are discussed rigorously and argued over at length, for what is also at stake, and in this case clearly perceived, is the cost of the respective contributions to the joint venture equity.

Both parties also tend to forecast the future based on the few cases that they come to hear of from people they know. Here, because of the relative paucity of information available, the law of small numbers (Kogut, 1988) applies. This will introduce a bias into the perception of the anticipated outcome of which the future partners will not be fully aware. Moreover, the partners will also fail to communicate specifically on this point, either to avoid being unpleasant or to maintain their own advantage.

A party may be tempted to sign an agreement without feeling bound to respect its content. If the negotiation process appears to be going too smoothly, with no deadlock or major difficulties occurring, there are still many reasons for anxiety, and risk perception increases within the negotiation process. This is a typical perverse or counter-intuitive effect, as the negotiation is usually expected to be a common effort for spotting and reducing risks instead of occulting them or, even worse, generating them.

Risk Management within the Negotiation

Parties to the joint venture negotiation have to cope with what is labeled "double ignorance." Westerners will pay the price for being unaware of many of the mechanisms of Chinese culture. However, they should also make sure they are better informed on some of the typical characteristics of their own culture and identity, which is usually so much a part of themselves that they fail to recognize it. The Chinese have a similar shortcoming in this area; thus none of the parties contributes as much as they should to reducing the risks involved in cultural interaction. When a partner comes to realize this, perhaps after having paid a high price (such as a one-month deadlock on an urgent issue), he will probably tend to respond to the difficulties he has encountered by trying to learn more about the other's culture. If the parties assess the behavior of their would-be partners according to their own cultural standards, they will only nurture the misunderstandings and increase the problems—and end up being unable to resolve them.

As decision-making capacity for the future joint venture also has to be negotiated under conditions of uncertainty, operational rules regarding the various decision types that will have to be made must be drawn up. These are: 1) the daily decisions

needing to be made by the general manager on a daily basis; and 2) decisions to be taken by the board of directors, some of which will require a qualified majority and others unanimity. In the unanimous category will be decisions considered to be strategic for the company, such as capital increase, change of activity, or closing down.

Two decades of experience of joint ventures at the national level have enabled observers to draw useful conclusions regarding the principles that need be respected if the chances of positive cooperation are to be increased. For example, while the 50/50 formula for the equity split is often the easiest to negotiate, it is also the most risky because of its potential for ending up in a costly if not fatal deadlock. Each side will usually strive to avoid such a formula whenever it can.

One of the recurring problems for the Western partner is that the know-how he brings to the joint venture in terms of technology transfer could be passed on illegally to the parent enterprise and possibly to competitors. This could contribute to the "birth" of competitors able to put apparently similar products on the market at a much lower price. There are two levels of intervention that can be used to reduce this risk. The first is of a legal nature and would involve the foreign partner protecting himself contractually. However, in the Chinese context, experience shows that a contract, usually deemed absolutely necessary for its deterrence value, is insufficient when it comes to protecting technology. The second level of intervention involves keeping one element of the manufacturing process or a key part of the technology within the Western parent company to make copying impossible. This is an especially difficult issue to negotiate, as the Chinese party is extremely sensitive to the implicit accusation behind it. Furthermore, even if the Chinese partner is loyal on this issue, he cannot guarantee that an unscrupulous employee will not pass on information about the core elements of the technology.

The valuation of the assets brought to the table by each of the parties may entail the risk of a heavy imbalance between them in the future. As a matter of fact, both sides tend to greatly overestimate their contributions, by sometimes as much as up to ten times their real value. If later one side, especially the Chinese side, comes to realize that it has been cheated, it will retaliate and thus turn what was originally a positive-sum game into a kind of trench warfare which will end in both sides losing. A way of reducing this risk is to involve technical experts who will carry out an audit. The ways in which such a third party is chosen and paid are also points of contention that can entail endless and costly deadlocks.

The issue of the market creates chronic uncertainty. Will the market be profitable enough to allow the investments made in the joint venture to be recovered? Is the joint venture protected from any intervention that the state might make to protect its own industry vis-à-vis the newcomer? At what level should the price of the new products be pitched? In other words, should the company try to realize a profit immediately or should it follow a longer-term policy of establishing itself and strengthening its position in the Chinese market?

Using the foreign brand name to market the joint venture's products poses a risk to the reputation of the foreign partner, especially if the quality of what is being produced is not up to expected standards. The Chinese side usually has an optimistic

view on this issue and considers that there is no risk involved. The Western partner tends to consider that the best—but far from complete—answer lies in the appointment of a general manager who will have some control over the joint venture operations.

What is said during the negotiation process and what is written in the contract are in no way a guarantee about what will happen in the future. This is because partners usually start their discussions with a hidden agenda, which may evolve over time and according to the circumstances. Parties usually avail themselves of the services of technical experts to gauge how profitable the project will be, but this is done with extreme reluctance on the Chinese side. These experts conduct market studies to obtain specific information on business opportunities. The partners are thus somewhat "out of the loop" in terms of preventing an abrupt strategic shift in company policy.

One of the classic ways of handling business risks is to draw up a contract with clauses stipulating sanctions or recourse to the law in the event of contractual non-observance. The contract procedure is a traditional one in China—a business contract written during the Ming dynasty (1368–1644) states: "The two parties have taken an oath by drinking blood-wine to work together in harmony.... The party that breaks this contract will be persecuted by gods and men alike" (Buckley-Ebray, 1981). The risk of one of the parties not abiding by the contract is reduced by a threat, the strength of which is increased by invoking supernatural powers that no one can control to punish the offender. This was a common way of handling risk and controlling others' behavior in traditional societies (Faure, 2000a). In post-Maoist China, financial and legal punishment have replaced these methods.

The main focuses of the contract's legal dimension are the clauses relating to arbitration and liability, and the language of the contract itself. The arbitration clause may be applied in the event of conflict between the parties or if one party considers that his counterpart has fallen short of his obligations. The sentence is passed by a court whose composition may jeopardize the principle of fairness, especially if litigation between a Chinese and a foreigner is being presided over by a Chinese judge. The most common way of reducing such a risk is to avoid the litigation taking place in China. Thus, the Western side will strive to obtain an agreement that any litigation will take place elsewhere, for instance, Stockholm, Geneva, or Singapore. As well as clauses governing arbitration and court location, there will be other clauses to deter a party from reneging on commitments or clauses that can be used as a device in handling disputes, for example, *force majeure*, a penalty clause, and mediation.

Chinese is an extremely fuzzy language, with every sentence being open to several possible interpretations. Take, for example, the classic Chinese Taoist text, *Tao Te Ching*, the first paragraph of which has given rise to dozens of translations, each substantially different from the others. The polysemic nature of Chinese characters is an obvious source of uncertainty for the future of a joint venture, implying an ongoing need to revisit its contractual basis before acting. One way of solving this problem, although the Chinese can be extremely reluctant about it, is to adopt

the principle of writing the contract in both Chinese and a Western language. This formula, though it may reduce the risk, will never totally eradicate it.

The Chinese desire to save face, especially when there are external observers present, may encourage a Chinese partner to pay more attention to and try to reduce the sort of risks that are likely to end in project failure. If, for whatever reason, the joint venture does fail, then the reputation of both partners will be sullied and the losses incurred will have to be shared between them. Sensitivity to risk can be developed at the social and cultural level. Once parties become aware of the risks, a structural co-responsibility may lead each of the parties to manage the share of risk that he is most competent at handling. For example, the Chinese side will undertake to improve relations with the local administration, while the Western side will bring its experience on international markets.

Conclusion

Risk is a product, a social construct, the substantive aspects of which vary according to culture. Broadly speaking, the way a human being reacts to risk depends on cognition, and cognition is based upon perceptions. The cultural understanding of risk and its management come into play in the course of negotiations on risky business issues. Just as there is a culture of risk in some commercial undertakings or some sports, so there is also a culture of negotiation over projects involving risky stakes. Situations such as joint venture negotiations tend to promote and develop this type of negotiation culture. The joint venture negotiation, especially in a context like the Chinese one, far from offering guaranteed psychological comfort and a reasonable assurance of profits, embodies all the conditions needed to keep difficult discussions moving across rough and tortuous terrain.

A joint venture negotiation has a preventive function, which is to avoid future business problems with the market. However, the trade-off carries with it some uncertainties because the Western partner is transferring technology in the hope of successfully trading with his Chinese partner in the Chinese market. In traditional wisdom, this may be framed as giving away a piece of jade for a brick, in other words, something real and valuable against an expectation.

Confronted with these multiple uncertainties on the future of the joint venture, the potential partners implement four basic types of approaches in order to manage them: risk avoidance; risk reduction; sharing/entrapping; and ignoring risk. *Risk avoidance* would, in this case, entail the party that is contributing most of the equity deciding not to transfer any technology to the other party and not allowing it to make any major business decision.

Risk reduction is negotiated according to the nature of the risk. The risk of structural imbalance, even of paralysis or destruction of the joint venture as a result of power conflicts, can be reduced by drawing up a procedural and regulatory framework that anticipates some of the risky scenarios that may arise. Unless you write your competitors' plans, you cannot forecast the future. Thus, market risks

are prevented or, at best, reduced by the use of technical experts. This also includes the possibility of obtaining new contributions from the parent companies to bolster the adaptive capacity of the company to meet the turbulence of the context. The technological risk is reduced by legal and strategic means through keeping, when possible, some core component of the equipment made within the parent company. Risk can also be reduced by limiting its scope and/or its size. For instance, incremental contributions to the joint venture equity may fulfill this purpose by dividing the allocation process into several stages. During the first year only a limited amount of technology will be brought. If the transfer goes as expected, a second stage will be launched and, if necessary, a third stage.

Some risk of misunderstanding between the partners, even of crisis or of open conflict, can be prevented by careful relational management. The point is to maintain trust as an essential condition for cooperation by developing and nurturing the relations between partners. This can be achieved as early as the first negotiation stage by adopting a mutual learning process.

Sharing the risk with the partner consists of involving him in such a way that if things go wrong, it will be detrimental to both. One formula to achieve this form of compulsory cooperation is to create a situation of mutual entrapment. Compensation has also proved to be a useful and effective mechanism. The Chinese always keep the idea of compensation at the back of their minds when dealing with Westerners. If operations do not deliver as originally expected, the foreign side, which is viewed as rich and powerful and thus bound to be generous, is expected to compensate for the losses by increasing the investment or paying the employees directly. In an unbalanced situation among supposed "equals," it is the duty of the less equal to take care of the welfare of the other. To control the risk of the Chinese side taking unwise initiatives such as illegally taking advantage of the Western partner, a situation of mutual entrapment may be created. If the Chinese side goes too far the whole project will be threatened. If the venture collapses, both parties will lose their investment.

A variation on the latter formula for risk management means involving a number of decision makers in the project, especially those who could be in a position to blame or punish the side taking the wrong initiative. This dilution of responsibilities results in creating risk for the other side in order to better balance the system. In analytical terms, the point is to lower the other's security threshold. In concrete terms, this might, for instance, involve associating the municipality with the joint venture project as a minor partner; this would put the municipality in the situation of being a sleeping partner in terms of decision making but not with regard to the related responsibilities.

In most cases, risk cannot be eliminated. Thus, the "China risk" cannot really be confronted without chances being taken in an entrepreneurial spirit. As a Chinese saying has it, "When galloping along the top of a wall, you can't afford to look back." The chances being taken in this situation are like betting on the future, and treating risky situations in this way ultimately means denying them—acting as if there were no risk involved. A Chinese person starting a business calls it "diving into the sea." No one knows whether or not he will have a bad encounter at the bottom of the sea.

One way of handling some of the uncertainties that stand out as landmarks in negotiations in China is to produce what is called an "incomplete contract." Instead of finalizing decisions that might ultimately be counter-productive, some of the decisions needing to be made are left hanging, to be taken later, when the situation has been clarified. Both the effectiveness and efficiency of such a procedure rests on the quality of the relationship between the parties. If the relationship goes downhill in the meantime, the contractual "handrails" necessary to achieve a cooperative functioning of the joint venture may no longer be there when the issues left on one side have to be tackled.

China exerts a kind of fascination over people and raises great expectations, sometimes above and beyond what may seem rational. Some Westerners launching themselves into highly uncertain projects may think in terms of Schopenhauer's formula "You haven't got a chance, but take it anyway." Thus, the Chinese market sometimes leads to a level of risk taking that would be considered unreasonable anywhere else. It occupies an important place in the imagination of each of the actors in the negotiation. In so doing, it also reveals the other dimension of risk, that of dream and emotion. Such a dimension is not really managed but simply lived.

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Conclusions

Rudolf Avenhaus and Gunnar Sjöstedt

International negotiation between states involves risks: risks to be taken, used, avoided, or managed. Risks may become an impediment to a negotiation, often representing an extra burden to those who conduct it or who are responsible for its outcome. Risks increase the degree of complexity in multilateral talks: risks are burdensome in all situations because of the technical difficulty of the questions addressed and the great number of issues and actors engaged in the process. The need to consider risks makes communication between the parties more awkward and time-consuming. Divergent risk perceptions obstruct the search for a common understanding of the negotiated issue and cause pseudo-conflicts. Parties may find it harder to reach an accord that is technically feasible and at the same time acceptable to a sufficiently large number of delegations. The uncertainty that is an inherent property of a risk, or of measures undertaken to cope with a risk, will make it more difficult for policymakers to justify a costly commitment made in an international negotiation. Some special measures may thus be required to address risks in an international negotiation. Effective approaches to risk management, or risk avoidance, may become critical instruments for successful negotiation.

It should, however, be said that risks do not always have a negative impact on a negotiation. Risk taking on the part of a leading actor may help negotiating parties to pull the process out of an impasse, for instance, by making a stalemate more hurting to other parties. In some situations it may be futile or, indeed, completely counterproductive to avoid a serious risk that may be confronting the parties because the whole purpose of the negotiation is to find a way of coping with it. Some issues that governments, organizations, and other actors want to address in international cooperation and dispute settlement manifest themselves as risks. In this case

Rudolf Avenhaus
University of the Federal Armed Forces, Munich, Germany, e-mail: rudolf.avenhaus@unibw.de

Gunnar Sjöstedt
Swedish Institute of International Affairs, Stockholm, Sweden, e-mail: Gunnar.Sjostedt@ui.se

international governance and regime building include an important element of risk management. How to understand and cope with risky issues in international talks is an important topic in its own right in the context of negotiation analysis.

As mentioned in the Preface, this book is the product of a project that lasted several years. Contributions have been revised after intensive discussions; some contributions were revised substantially. The conclusions which follow are therefore not just a summary of the essential contents of the contributions to the book, but rather a description and assessment of the project findings as a whole. In line with the exploratory nature of this project on risks in international negotiation, the authors of a chapter have not been obliged to apply in detail the framework of analysis laid out in the introductory chapter—the analytical framework was intended to give chapter authors general guidance for their analysis of the case or cases they address. While the cost of this procedure is a lack of systematic comparison across cases, its counterbalancing advantage is a richness of case-specific detail.

Categories of Risks Confronting Negotiators

This project has identified different risk categories, each type pertaining to a different aspect of a negotiation and therefore affecting events in somewhat dissimilar ways. In particular, this project has found it useful to make a distinction between *performance risks, social risks, implementation risks*, and issues framed as risk (*negotiated risks*). To some extent this categorization is part of the general literature on risks. Hence, as demonstrated by Sabine Koeszegi in this book, *social risk* is a key concept in the academic discussion about trust and trust building. However, essentially the four categories of risk mentioned above pertain to the special research area of *risk and negotiation* and represent observations that have been made in the course of this project.

The term "performance risks" is not a common one in the risk literature: it refers to phenomena that are often addressed in negotiation analysis. This type of risk is, in principle, completely actor-driven and is associated with the negotiator's attitudes, preferences, tactical behavior, or strategic choices (see Dupont, McDermott, this book). What a party does in a negotiation may often have the character of risk avoidance—or, quite the opposite, represent deliberate risk taking. A party may consider it risky to engage in a negotiation or to stay out of one. To participate may represent risk taking because the party concerned may become obliged to accept an agreement that does not serve its interests better than non-agreement. This may happen because once a party has become involved in negotiation, disengaging itself may have considerable political costs. The government concerned may become the target of aggressive domestic public opinion. Or it may have to face heavy criticism by strong parties in international institutions. On the other hand, non-participation in a negotiation may deprive a party of noteworthy cooperative gains produced in the process. Risk taking may also be an important component of a successful negotiation

strategy. However, negotiating parties should know that performance risks represent only one category of risk that they need to watch out for.

Social risks are closely related to lack of trustworthiness in the relationship between two or more negotiating parties. Koeszegi in this book reports that the literature identifies five different crucial characteristics of trustworthiness: *benevolence, integrity, consistency, openness*, and *ability*. Social risks may have an impact on both the process and outcome of a negotiation. Three dimensions of trustworthiness referred to by Koeszegi seemingly co-vary significantly with process effectiveness, that is, the capacity of a negotiation to produce useful results. *Benevolence* is potentially associated with the leadership factor as it represents "willingness to protect, support and encourage others without an egocentric motive" (p. 76). *Openness* is "willingness to share ideas and information freely" (p. 76). The lack of sufficient openness may thus obstruct instrumental communication in a negotiation. The impact of this can be expected to be different at different stages or dimensions of a negotiation. Unwillingness to "share ideas" is not likely to be particularly detrimental when parties are "horse trading" or exchanging concessions in a distributive bargaining session. In contrast, a high degree of openness may be a precondition for creative agenda setting and effective problem solving at earlier stages of the negotiation. A failure of *consistency* is described by Koeszegi as lack of "reliability and predictability," which likewise can be expected to hamper communication and problem solving in a negotiation. For example, party A may choose to withdraw from a negotiation because it suspects that party B will use sensitive information revealed by A for purposes other than the construction of a cooperative agreement benefiting both sides. This dilemma is well illustrated in the case of negotiation on joint ventures in China (Faure, this book).

Lack of consistency may also create an *implementation risk* in the eyes of some negotiating parties because other parties have become increasingly uncertain that a negotiated accord will produce the positive values that they expected, when signing the treaty, would accrue in the future. They may, for example, have come to the conclusion that the proposed technical solution to a negotiated problem will not be feasible. One example would be an actor in the climate negotiation who has become convinced that observed climate warming is not primarily due to man-made emissions of greenhouse gases but caused by natural forces like oscillating sun activity. If this is true, the sacrifices in terms of emission reductions that are agreed upon in the 1997 Kyoto Protocol to the 1992 Framework Convention on Climate Change are irrelevant (Sjöstedt, this book).

The essence of an implementation risk is that one actor needs to consider the possibility that other signatory states will not honor their obligations under an international treaty. A perceived implementation risk may drive an actor or a group of negotiating parties to reconsider their active participation in a negotiation or compel them to abstain from signing a negotiated agreement. Lack of *integrity* and *ability* in Koeszegi's sense may also produce implementation risks. Integrity is "adherence to honesty and truthfulness." In this case A finds cooperation with B risky because the latter is considered to be unreliable and thus unable to be trusted to fully comply with an agreement. In the second case pertaining to lack of ability ("competencies

that influence a specific domain") the implementation risk is due to A's assessment that B does not have the necessary capacity or resources to honor an agreement. B's willingness to comply with the agreement is simply irrelevant. One example with regard to a water negotiation is that government A is not convinced that government B will be effective in terms of preventing companies and farms in nation B from discharging hazardous substances into a river that is the subject of international negotiation.

The Anatomy of Negotiated Risks

The chapters of this book project not only address *performance risks, social risks*, and *implementation risks*, but have particularly highlighted a fourth category of risk referred to as *negotiated risk*, including the sub-categories of *conditioning* and *factual risk*. Negotiated risks are present when issues represent a risk problem for negotiating parties. In this project negotiated risks pertain to a variety of issues: confidence building in the relationship between the two superpowers during the Cold War (Kremenyuk) disarmament of biological weapons (Hopmann), development of a regional, collective security regime in the Baltic area (Porfiriev), preventive diplomacy (Zartman), radioactive spills on the Kola peninsula (Compton), the operation of the Temelín nuclear plant (Böck and Drábová), the talks on climate change (Sjöstedt), and joint ventures in China (Faure). An analysis of these cases clarifies that negotiated risks are a composite of two types of risk that negotiating parties need to consider and deal with: first, an immediate hazard (*hazard risk*) and second, a risk that conditions producing a hazard will emerge (*conditioning risk*).

Although negotiated risks are issue-conditioned, they are essentially constructions by the actors participating in a negotiation, and these constructions tend to vary across actors or categories of actors when a negotiation starts. A negotiated risk is likely to be perceived and assessed differently by different parties depending on their interests, knowledge, and culture, and other background factors. For example, a natural scientist, an African diplomat, and an ordinary layman can be expected to have divergent images of the problem of climate warming. Risk is not an attribute of issues similar to, for example, *distributiveness* or *complexity*. It pertains to the relationship between a negotiation party and an issue framed for negotiation. An important element of international talks on a negotiated risk is to harmonize the risk perceptions held by participating actors, in other words, to create a joint issue construction. Regardless of the issue area, negotiated risks have in common that they represent a particular kind of quandary for negotiating parties, constraining their performance in a negotiation process. However, this predicament is considerably conditioned by the substance of an issue representing a negotiated risk. It makes a difference if parties are addressing the risk inherent in, for example, foreign investments, river pollution, climate warming, or the use of weapons of mass destruction.

Regardless of how they become framed "for the table," negotiated risks have in common that in one way or another they are strongly associated with a real, possible

hazard for negotiating parties. Issue properties and their risk implications will sometimes dominate and drive the entire negotiation, as in several cases studied in this book, for example, the risk of a nuclear accident, the international climate talks, disarmament of biological weapons, conflict prevention, or the establishment of a hotline between Moscow and Washington (Böck and Drábová, Sjöstedt, Hopmann, Zartman, and Kremenyuk, respectively, this book). In other cases the characteristics of a negotiated risk will be subordinated to other issue properties and consequences but still have an impact on a negotiation, for example, business negotiations (Faure, this book). The risk dimension of an issue brought to the negotiation table always matters, but how much and in what regard it matters depends on the circumstances of each particular negotiation. However, in all cases included in this book, the causal relationship between issue substance and actors' risk perceptions is significant in terms both of how the negotiation developed and how it terminated.

Indeed, in most of the cases the perceived hazard associated with a negotiated risk was the main reason why this issue emerged "at the table" in the first place. Thus, it was the expected natural hazards associated with a warmer atmosphere, for example, the redistribution of precipitation, desertification, and increased frequency of natural disasters, that induced a group of nations and international organizations to begin the formal climate talks in the mid-1980s. The Austrian–Czech negotiation on the nuclear plant started gradually because the government in Vienna feared the disastrous consequences of a possible accident. In the midst of the Cold War, Soviet and U.S. representatives sat down "at the table" to agree on the establishment of a hotline between Moscow and Washington because both sides wanted to reduce the risk of accidental war between the two superpowers. The risks associated with the use and spread of biological weapons motivated negotiation and accord on the limitation of these arms.

Moreover, when expected negative consequences are clearly subordinated to expected positive values from a negotiation, the presence of some elements of a negotiated risk may have a considerable influence on how a negotiation is conducted. This contingency is illustrated by the case of negotiations on joint ventures in China, which were conducted by a West European company and a Chinese counterpart together with Chinese state officials (Faure, this book). These business negotiations were driven by expected economic gains. The Chinese side negotiated primarily to get hold of advanced Western technology. The Western company sought low production costs (workforce, facilities etc.) and access to a huge Chinese domestic market. However, particularly for the Western firm, negotiation also involved certain hazards related to a possible negotiation failure. In particular, a possible major hazard is the transfer of advanced technology to the Chinese side during the negotiation. This would not only represent an immediate loss of monopoly of technological knowledge. It could also lead to the secondary effect of the Western company losing its attractiveness as a partner in a joint venture; not only that, the transferred technology could be used to equip a new and superior competitor in the Chinese market and elsewhere. Although the possible hazard of a negotiated risk did not dominate the negotiation on joint ventures in China, it conditioned how these talks

were conducted, how much time and resources were allocated to them, and how they were brought to a conclusion.

When parties address the peril dimension of a negotiated risk, they often also need to consider a *conditioning risk*, which determines if, and to what extent, this hazard will actually be produced. An understanding of the relationship between a manifest hazard and its conditioning elements can be of crucial importance for an assessment of a negotiated risk. Methods of managing the negotiated risk can target either the conditioning or the hazard risk, or both. Negotiating parties may have different preferences in this regard.

This kind of strategic dilemma is highlighted in the international negotiation on climate change (Sjöstedt, this book). Two main strategies have been developed to cope with the climate risk, *mitigation* and *adaptation*. Essentially, mitigation pertains to the conditioning risk, whereas adaptation is related to the factual risk. In some negotiations the mix of mitigation and adaptation preferred by the parties may vary considerably. For example, in the climate talks the first binding international regulation instituted to cope with the problems of a warming atmosphere (the 1997 Kyoto Protocol) concentrates strongly on mitigation by providing a plan for the reduction of emissions of CO_2 and other critical greenhouse gases (Sjöstedt, this book). In theory, mitigation and adaptation should be supplementary solutions but have in reality become competing strategies. The industrialized countries that have signed the Kyoto Protocol have opted for mitigation, whereas developing countries favor adaptation because of their greater concern with the hazard risk. Recall that, in general, developing countries are much more vulnerable to natural disasters caused by climate warming than industrialized nations.

Factual and conditioning risks need to be considered jointly. Several authors of chapters in the book emphasize the significance for process and outcome of the basic bidimensional character of negotiated risks. Hampson (this book) points to the high complexity of the task of "handling multiple risks" that contributes to impeding or slowing down the process of negotiation. In his analysis of conflict prevention as risk problem in this book, Zartman underlines that it is the bidimensional character of negotiated risks that is the main problem for negotiating parties, a kind of "insurance problem." According to Zartman, the ultimate question is: "Will we cost ourselves unnecessarily now and forever, to forestall uncertain dangers (i.e., the risk) of future costs?" There is also a need to link the basic risk problem to the equally fundamental implementation dilemma that may confront negotiation parties in any negotiation. Even if undertaking costly measures to avert the "uncertain dangers" is fully warranted and even if a plan is developed to achieve this objective, it is not certain that all parties to an agreement would be willing and able to carry out the measures. Some parties may deliberately try to free ride and others may simply lack the necessary capacity and competence for effective treaty compliance. These realistic concerns about some countries may, in turn, influence the performance of other parties to a negotiation.

The Uncertainty Problem

Coping with uncertainty is a key problem in risk management. Recall that in the introduction to this book it was emphasized that the project rests on the traditional conception of *risk* as a function of *the negative consequences of an event times the probability of their occurrence*. This understanding of risk has been strongly criticized by those who argue that risk should be looked at as a social construction and as a manifestation of ethnic or professional culture (Porfiriev, Faure, this book). However, we believe that, ultimately, it is the task of empirical studies to determine to what extent the constructivist perspective on risk contradicts the conventional and traditional definition of this concept. In spite of forceful sociologist/constructivist arguments, it cannot be excluded a priori that negotiation parties think in terms of both "consequences" and their "probability" when they construct a negotiated risk. Thus, this book addresses the question as to what extent the conventional "mechanical" and "statistical outlook" on risks has, in some way or other, guided parties in the construction of negotiated risks.

A comparison of the cases does not produce a clear, unequivocal answer to this query, although some indications emerge from this exercise. Typically, when negotiation parties frame a negotiated risk they emphasize the negative consequences of an issue, while playing down the probability dimension of the risk. This observation is fully in line with the general observations made in risk research and is also consistent with Prospect Theory (McDermott, this book).

Consequences pertaining to a negotiated risk are often referred to as a motive for the initiation of a negotiation. The image of the possible consequences of a nuclear accident drove the negotiation on the Temelín nuclear reactors to begin and eventually reach an agreement that was acceptable to both parties, although it is still an informal one (Böck and Drábová, this book). The possibility of unintended and uncontrolled effects of biological weapons have brought the main producers of such arms to the negotiation table and has made it possible to reach an agreement on arms reduction and production constraints (Hopmann, this book). The natural disasters that are expected to follow when the atmosphere warms help to explain why the complex climate talks produced the 1992 UN Framework Convention on Climate Change and the 1997 Kyoto Protocol (Sjöstedt, this book).

There are various likely explanations as to why consequences are so much more pronounced than probabilities when negotiated risks are framed for the table or generally addressed in a political process. A basic quality of negotiated risks is *uncertainty*, which pertains to both consequences and probability. However, as seen in a negotiation perspective, consequences and probability represent somewhat different problems for negotiating parties. In some cases the consequences that parties associate with a negotiated risk are well known in the sense that the parties involved have a clear image in their mind of the negative or disastrous consequences that may transpire from a certain event, like war or a nuclear accident, or like failed business talks (Sauer, this book). An easily comprehensible picture of the consequence of an event potentially has a powerful impact on politicians and other decision makers, especially if it has been displayed in the media and hence shared with the public.

The case of the Temelín nuclear plant offers a good illustration of this contingency (Böck and Drábová, this book). The Austrian policymakers and officials pressuring the Czech government to negotiate on the closure of the Temelín reactors had a very clear picture of what an accident at this plant would mean, based on their knowledge about the 1986 nuclear disaster at Chernobyl. In several successful environmental negotiations a similar *clear image* of a disaster has played a significant role as a motive for, and a driver of, the process. In the case of the negotiations on ozone depletion, the image of serious negative consequences was the hole in the atmosphere leaving the surface of the Earth unprotected from the damaging effects of solar radiation. The all-European negotiation on Long-Range Air Pollution was driven by an image of the harmful effects of acidification, which included the very concrete picture of lifeless lakes in Scandinavia and dead forests in Germany.

A different kind of clear image of the negative consequences of a negotiated risk was developed in several cases included in this project. These are the cases concerning the climate talks and disarmament of biological weapons (Sjöstedt, Hopmann, this book). In these negotiations, the clarity and authority of the image of the negative consequences associated with the issue concerned was due to the large and high quality input by the international scientific community into agenda setting and issue clarification. The negotiated risks and its associated negative consequences were constructed in a rational and authoritative way with the help of scientific knowledge and information.

The strong emphasis on consequences in descriptions and assessments of negotiated risks does not necessarily mean that the probability factor is disregarded. If an event with negative consequences were considered to be entirely hypothetical, no negotiation on costly measures to cope with this issue would be started. For example, Austrian authorities urged their Czech counterparts to start discussions about the closure of the nuclear reactors at Temelín because they considered that a devastating accident in this plant was possible (Böck and Drábová, this book). Although they did not specify the likelihood in figures that such a catastrophe would happen, they clearly claimed that the probability was higher than zero. They assessed the likelihood of an accident in terms of *unstructured certainty*. This approach to risk assessment is typical for worst-case analyses. The inherent logic is well known: given, first, the disastrous consequences of a nuclear accident, and second, a probability higher than zero for the occurrence of such an event, a worst-case analysis assumes that an accident will occur and that the appropriate measures must be taken to cope with this problem, for example, close nuclear reactors even if they are efficient in producing the electricity needed.

In several of the cases analyzed in the book, parties tend both to emphasize consequences in their risk assessment and to frame a negotiated risk in terms of *unstructured certainty*. However, a few cases are different: here, negotiating parties tend to couch probability assessments in terms of structured uncertainty when they describe the negotiated risk. This propensity is strongest in the climate talks but is also discernible in the negotiations on biological weapons (Sjöstedt, Hopmann, respectively, this book). Both these cases have a common possible explanation for parties' inclination to begin to structure uncertainty. This is the systematic use of

scientific methods and the use of a scientific discourse for the clarification of issues and the development of a problem-solving negotiation formula.

Construction of Issues for Negotiation

Diverging risk perceptions are a fundamental problem in all collaboration in risk management. The parties involved are not necessarily fully aware of these perceptional differences, or at least do not completely understand their full extent and all their implications. Perceptions are steered by individual psychological features and processes and are ultimately conditioned by culture and other background factors of the external environment of the person concerned. There is obviously an association between party perceptions of a negotiated risk and its construction in a negotiation. The question is what character this association has and what its impact on a negotiation will be. Is construction a function of perceptions? Does an issue construction determine perceptions? The cases analyzed in this book do not present any direct answers to these questions but have provided some evidence indirectly elucidating the connection between party perceptions and their joint issue construction.

The case studies of this project give general support to the proposition that it is not a question of *if* but *how* issues representing risks are constructed for an international negotiation. The cases analyzed also indicate that issue construction is a complex process with different dimensions, each driven by a different set of factors in each particular negotiation. According to one theoretical conception, risk perceptions are manifestations of partly hidden societal processes. In contrast, negotiation analysts see issue construction—in this case risk construction—as a fully integrated part of the negotiation game that is quite deliberate and fairly rational and driven by interests.

As seen in a sociological perspective, culture and other background factors influence, and perhaps directly condition in detail, how a particular issue like a negotiated risk is framed for negotiation. In this book particularly, Faure and Porfiriev emphasize this outlook. They contend that a (negotiated) risk is a social construct, a complex product of society, a media-and-man combination that integrates rationality operating at several levels—factual, psychological, and cultural. The risk perception of actors at the table representing negotiating parties is influenced by experience and culture.

Cross-cultural differences may be significant; and potentially they have a strong impact on how a negotiation develops and what result it will produce. Referring to concrete examples, Faure observes that in some cultures risk tends to be viewed as a statistical value, the probability of an event *times* its negative consequences. One expression of this perspective is the broad adherence to a professional culture of natural scientists when complex issues are addressed. This rational outlook diverges starkly from some other perspectives on the nature of risk that may be introduced into a negotiation. In some ethnic cultures risk can be interpreted as God's will, the implementation of Divine Justice to punish unfaithful people. Natural catastrophes

are viewed in some societies as a result of supernatural forces, an intervention of evil spirits inflicting upon people the treatment they deserve. If a risk occurs, this may also suggest destiny, a written fate that balances the good and the bad, acting as a silent court of justice (Faure, this book).

The case studies of the book give some support to the proposition that ethnic and professional culture may have a wide influence on a negotiation, as predicted by sociologist constructivist authors. Faure highlights the significance of Chinese–European cultural differences in the negotiation on joint ventures in China. In the climate negotiation there are signs that different cultural elements in industrialized and developing countries were an obstacle (Sjöstedt, this book). Similarly, a slight collision between two differing political cultures seems to have caused initial difficulties in the Austrian–Czech negotiation on the Temelín nuclear plant. The climate talks, as well as the negotiation on water pollution in the Danube, were to some extent colored by a scientific professional culture, which may have had something of a facilitating effect on inter-actor communication.

It is, however, uncertain how significant the diffuse and general cultural impact is on issue construction in a negotiation. A negotiation perspective on issue construction emphasizes that this is a highly conscious and deliberate process that primarily occurs in the process stage of *agenda setting* and *issue clarification*. There is reason to believe that conscious issue construction neutralizes or controls much of the influence of societal construction processes. Issues are carefully framed and described for negotiation purposes. To move forward to following process stages when a negotiation formula is worked out, bargaining on detail takes place and a settlement is eventually reached. Parties need an agreement including both the composition of the whole agenda and the understanding of individual issues as a platform or framework for the ensuing negotiation work.[1] All parties wanting to reach a negotiated agreement have a strong joint interest in having an issue constructed in an instrumental way. The way an issue is constructed constrains what outcome can be attained. To establish these limits is part of the central, strategic game of a negotiation. There are usually different and competing possible approaches to issue construction. For example, a negotiated risk may be framed in favor of risk acceptance, risk avoidance, or risk reduction. Hence, the negotiated risk of climate change was framed mainly as an emission problem (risk reduction), which conditioned an outcome consisting of emission reductions or *mitigation* according to the discourse of the Kyoto Protocol.

A possible alternative frame could have been a focus on natural disaster problems (risk acceptance), which would have favored an adaptation approach (Sjöstedt, this book). The case of climate talks illustrates how different ways of constructing an issue can be competing in a negotiation because the alternatives perceived by negotiating parties are not politically neutral. Industrialized countries had a greater interest in *mitigation*—risk reduction—than developing countries. The latter favored an issue construction, implying a risk acceptance approach; preparations for dealing with natural disasters following from climate warming are called *adaptation*.

[1] Recall the basic process model of a negotiation described in the introduction to this book: pre-negotiation—agenda setting and issue clarification—negotiation for formula—negotiation on detail—agreement—post-negotiation.

The construction of negotiated risks, or any other issues systematically framed for negotiation, is not only conscious and deliberate. It represents a strategically highly important stage of a negotiation, which does not only have the character of problem solving but is ultimately dominated by accommodation of interests in a subtle power game. The construction of negotiated risks in a negotiation is frequently a highly complex process that includes addressing a number of different problems that are philosophical, political, or technical in character. Successful problem solving may then be a condition sine qua non not only for the satisfactory conclusion of a negotiation, but also for its initiation and movement from one process stage to another. Issue construction may be associated with a highly complex bargaining process in which parties have to cope with a cumbersome mix of issue and process problems.

However, this is not always the case. Sometimes, participants will just recycle an established issue definition for a new negotiation round, making agenda setting and issue clarification quite unproblematic. For example, when the trading nations of the world started the Uruguay Round of multilateral talks (1986–1994) in the context of the General Agreement on Tariffs and Trade (GATT) one issue on the agenda was *tariffs on industrial products* and another was *trade in services*. The difference between these two topics was dramatic with regard to how agenda setting and issue clarification were handled.

Tariffs stood out as an unproblematic question in the process stage of agenda setting as they were very familiar to participants of the GATT talks. Special studies were not needed to clarify the meaning of *tariffs*; they just had to be acknowledged as an agenda item. Actually, the *tariff negotiation* in the Uruguay Round was a direct continuation of earlier talks on the same issue in the Kennedy Round (1964–1967) and the Tokyo Round (1973–1979). Several cases studied in this project address issues that in this sense were similar to tariffs, and notably the cases looking at joint ventures in China (Faure, this book). These topics have been the subject of many international talks and considerable knowledge has been gathered about the problem of addressing these topics in negotiation. For example, although it may be difficult to make an accurate assessment of how large a particular financial risk (e.g., buying foreign currency) is, the nature of this problem is very familiar to competent negotiators and can, furthermore, be studied in a large number of textbooks.

The introduction of *trade in services* on to the agenda of the Uruguay Round required a much more complex, extensive, and politically controversial process of issue construction than that of the tariff negotiations. In 1986 services trade was a completely new topic in GATT. In fact, it was only when it had become formally introduced into GATT that trade in services became a widely acknowledged trade issue for practitioners as well as in university teaching. The construction process required an input from elaborate studies in several international organizations and called for an important scientific input from academic economists.[2] This problem-solving approach was taking place in a strongly politicized negotiation process. Issue construction developed as a heated confrontation between developing and

[2] As a matter of fact, when the issue of trade in services was framed for the Uruguay Round it was also constructed for continued academic research.

industrialized countries which naturally impeded negotiation work aiming at objective issue clarification and problem solving in a search for tenable negotiation solutions.

A similar process of issue construction took place when the negotiated risk of climate warming was established for negotiation purposes in the UN system. Like services trade, climate warming was essentially constructed for political decision making in the international negotiation where it was first addressed. This situation of lacking knowledge represented in one way a substantial obstacle, which considerably slowed down the climate talks. On the other hand, the way the climate issue was built up in the context of the climate talks facilitated the negotiation process. Acting mainly through the Intergovernmental Panel on Climate Change (IPCC) the world scientific community functioned as a mediator between the two large groups that were opposing each other in the process of issue clarification, both industrialized and developing countries. Participation in the process constructing the climate issue committed many governments to a joint understanding of this topic. In the GATT talks on services trade it is fair to say that one group of states, mainly consisting of developing countries, imposed an issue construction on another group of states, consisting mainly of developing countries, which caused controversy and political strife. This was not the case in the climate talks where initially issue construction was solidly associated with the establishment of a common perspective on the climate problem as well as joint interests in this connection. In the climate talks the big political problems emerged at a later stage of the process in connection with the implementation of the binding commitments made in the 1997 Kyoto Protocol.

Coping with Negotiated Risks

Negotiated risks are essentially dealt with like any other issues on the agenda of international negotiation. They may pertain to various issue areas and may be treated a little differently depending on the topic addressed, for example, arms reduction, business, or environment. The specific qualities of negotiated issues may have an impact on negotiation procedures and ultimately on the outcome of the process. Thus, if an issue can be developed into easily distributive stakes, the exchange of concessions at the end of the negotiation will be easier. The technical difficulty of a negotiated topic also makes a difference. If issues are familiar and easy to understand diplomats-generalists can handle the negotiation. If, on the other hand, technical complexity is high, there is a demand for special expertise. Disarmament of biological weapons is one example. In these talks military and technical experts had a prominent role to play (Hopmann, this book). The climate talks depended on a substantive input of scientific knowledge, which led to the creation of a very special institution designed particularly for the participation of world scientists, the IPCC. This arrangement strongly colored the climate talks for the Framework Convention on Climate Change and its Kyoto Protocol (Sjöstedt, this book). When issues have the character of a risk, this property also tends to influence the way it is handled in a

negotiation. For example, communication may be somewhat impeded and differing risk perceptions may make an instrumental agreement difficult to reach. A number of special methods may be used to facilitate the handling of a negotiated risk, namely, negotiation ploys; risk avoidance by compensation; trust building; communication support; managing uncertainty.

Negotiation Ploys

Like in all international talks, a negotiation party or an external mediator can use various tactical devices to facilitate a negotiation, move it forward, or support the negotiation performance of individual parties. A number of such negotiation ploys have been identified that are particularly suitable to facilitate coping with negotiated risks.

Strategic framing or reframing of negotiated issues

The evidence from the cases looked at during this project indicates that issue construction is not only conscious and deliberate, but also a critical part of the political game driving a negotiation. In negotiation analysis issue construction is often referred to as framing, or reframing, of issues, that may have an important impact on a negotiation and its outcome. Issue framing may be used for various tactical or strategic purposes, and also for the management of a negotiated risk. Hopmann (this book) illustrates this point with his study of the disarmament negotiation on biological weapons. A decisive stage of moving the negotiation toward success/agreement began when the focus of the negotiation changed from possession to development of biological weapons. This change made it possible to formulate a meaningful regulation to restrain the use of biological weapons that could be a basis for an agreement that can be implemented effectively.

Planned joint construction of a negotiated risk

Veiled diverging risk perceptions may cause misunderstandings, generate pseudo-conflicts, and generally protract a negotiation process. The most critical element of a process of coping with a negotiated risk is the need for negotiation parties to take a stand on the insurance problem represented by this issue (Zartman, this book). A key question is how much in the way of resources should be allocated to pay an insurance premium to cover the possible costs associated with the negotiated risk. If parties cannot agree on this issue there will be negotiation failure. Risk assessment should therefore be retained as far as possible in the diagnosis phase of the negotiation, before parties define the formula to be translated into specific details for closing the deal (Faure, this book).

The case of climate talks illustrates the importance of a procedure through which parties can jointly construct a negotiated issue (Sjöstedt, this book). This practice

produced a number of beneficial effects which contributed to driving and facilitating the negotiation on climate warming. Risk perceptions were harmonized and as a result those participating in the issue construction process also arrived at a joint risk assessment. A significant factor in this connection was the input into the process from the world scientific community. Scientists performed a little like "an honest broker" and mediator in issue analysis and technical problem solving. The scientists provided high-quality information/knowledge that was needed for an understanding of the problem of climate change. As this input was not supplied by any party delegation, it could be considered as neutral. When delegations were processing this information/knowledge, three important interdependent effects were produced. First, all parties became engaged in a joint learning process. Second, joint learning generated a common understanding about the climate issue—a consensual knowledge. Third, joint learning also produced a commitment to the jointly constructed issue.

Mutual entrapment

One negotiation strategy designed to improve the conditions for joint risk management with another party or group of parties is to encourage them to share a risk by creating a situation of mutual entrapment. The essence of this ploy is to involve the opposition in such a way that if things go wrong, the outcome will be detrimental to both sides. A predicament is created where the two sides are conditioned to have symmetrical exposure to the same risk. For example, in the case of negotiations on joint ventures in China the company from the European Union (EU) would require an early investment by both future partners. From the EU company's viewpoint, this situation would make it difficult for the Chinese side to perform cooperatively. If the negotiation failed, both parties would lose their investment (Faure, this book).

Linkage management

The case of negotiation on biological weapons illustrates that the tactics of delinking issues may facilitate risk assessment (Hopmann, this book). When an issue is separated into sub-issues the complexity of the risk appraisal will decrease and the agenda will become more manageable. Linkage politics may likewise have a facilitating effect in a negotiation. These tactics may create improved conditions for constructive trade-off deals between key parties to the negotiation.

Constructive image building

Negotiations on issues framed as risks tend to generate "negative perceptions of the immediate outcome." The expected benefits of a negotiated agreement will typically represent cost avoidance. They will also accrue in a distant future, be relatively diffuse in character, and uncertain. In contrast, the costs that parties will have to accept in an agreement will be immediate or else materialize in the very short term.

They will also be concrete, specific, and highly visible. Therefore, the distribution of these costs between negotiation parties will come to the forefront in the negotiation.

This situation is problematic. Prospect Theory tells us that a negotiation is more problematic and time-consuming when parties try to avoid losses than if they expect to achieve gains (McDermott, this book). Loss aversion drives concession aversion. Individuals do not tend to value someone else's sacrifices for their benefit as much as they value their own losses. This means that a compromise where the two parties may make equal sacrifices will be seen as disadvantageous to a party driven by loss aversion, which may very well be both sides in the negotiation. Another consequence is that actors will be more susceptible to persuasion when they are attempting to make gains than when they are defending the status quo, or attempting to recover past losses. In other words, coercion is most effective when a party is trying to stop another party from making gains than when it is trying to stop the other side from attempting to recover losses (McDermott, this book).

An important facilitation approach is to create as clear an image as possible of the positive consequences of a costly agreement to cope with a negotiated risk. This strategy has two dimensions. One is the building up of knowledge, giving negotiators and policymakers involved in the process an increasingly clearer and more solid understanding of what consequences a proposed program of risk management will achieve. The work of the IPCC in the climate negotiation is a good case in point. The other dimension is to make the positive consequences of the costly accord understandable for the constituencies of the policymakers or for public opinion in general. The task may require the scientific knowledge about the negotiated risk to be framed somewhat differently than in a communication to knowledgeable policymakers.

Risk Avoidance by Compensation

The insurance dilemma of parties addressing a negotiated risk may become a serious obstacle in a negotiation. Some parties may consider that the possible negative consequences associated with a negotiated risk do not warrant the proposed insurance premium. *Compensation* is a possible remedy to this problem. Zartman (this book) recalls that the common use of compensation is through side payments offered by one part of the negotiating group to another in order to equalize costs of risk management. A typical situation in an environmental negotiation is that downstream countries need to offer side payments to less affected upstream countries. Developing countries have been given compensation for commitment to an agreement in various international regime-building negotiations. For example, the payments offered by developed countries to developing countries in the Global Environmental Facility (GEF) following a proposal by the United Nations Conference on Environment and Development (UNCED) in 1992 were integrated into the Kyoto Protocol on Global Warning and were designed to reduce the risk of environmental

degradation. Another type is "external" compensation, which depends on resources obtained from outside the circle of cooperating parties, notably from the market. A model case is the negotiation on ozone depletion. Thus, the element of risk in protecting the ozone layer was reduced when industry found it profitable to manufacture chlorofluorocarbons (CFC) substitutes rather than simply to stop CFC production (Zartman, this book). It is currently being discussed as to whether technological development will, or can, have a similar impact on the climate talks (Sjöstedt, this book).

Trust Building

The negotiated risk of the Temelín nuclear plant was a highly sensitive issue in the Austrian–Czech dialog. Divergent risk perceptions and strongly differing interests complicated the negotiation. The key issue was the closure of the Temelín nuclear plant, which was requested by the Austrian government. The Czech authorities wanted to avoid closure—and negotiation. Therefore, the talks between the two parties became rather informal and were not driven by joint objectives toward a formal settlement. Still, the negotiation process generated significant results. The discussions and exchange of information contributed to building trust between the two sides, hence reducing social risks that could otherwise have deepened. Mutual understanding between Austrians and Czechs increased. Austrian trust in Czech technical competence was also built up which, in turn, seems to have contributed significantly to an informal agreement that Austria tacitly accepted that the Temelín nuclear plants continue to operate. A consequence of increased trust was enhanced confidence on the Austrian side in the Czech capacity to run a nuclear plant with acceptable safety margins.

The Temelín case illustrates how risk can be reduced among cooperating parties by the introduction of *trust mechanisms* or their consolidation and operation over time (Koeszegi, Zartman, this book). Trust cannot directly reduce uncertainty or make a negotiated risk more transparent and thereby more easily manageable for the negotiators "at the table". However, inter-party trust may in different ways facilitate joint management of negotiated risks. For example, trust between them will make it easier for a weak party to accept the risk assessment of another more resourceful and competent party. Generally speaking, effective trust building reduces social risk. Increased trust will diminish one side's uncertainty about the other side's intentions (Koeszegi, this book). Trust building may therefore contribute to easing risk communication and facilitating joint risk assessment.

Communication Support

A basic means of facilitating the handling of negotiated risks is simply communication support either to all parties or to particular actors in the process. This is partly an institutional and partly a procedural question. Hence, in the climate talks the IPCC facilitated inter-party exchange of complex scientific knowledge and information (Sjöstedt, this book). When multilateral negotiations are conducted in the context of the United Nations, or another international institution, this organization gives various kinds of secretariat support. A major function of such institutional backing can be described as communication support. The secretariat disseminates information from an individual party to all other parties, for example, offers and requests regarding the exchange of concessions. It takes notes from meetings and aggregates information from all or many parties for distribution to the actors around the table. Hampson argues that third-party mediation between two or more sides in an ongoing negotiation may serve as a means of facilitating communication between them concerning, for example, negotiated risks (Hampson, this book). According to this view, mediation may not only bridge conflicting interests and in that sense contribute to creating common ground between opposing parties. It may also play a part in harmonizing differing perceptions of an issue at stake, including a negotiated risk.

Managing Uncertainty

Uncertainty always stands out as a crucial problem for the parties when risks are considered in a negotiation, and negotiated risks are no exception. If uncertainty associated with the issue on the agenda, or with possible countermeasures to a problem situation, is too large, policymakers will find it difficult to commit themselves to supporting a costly agreement.

Several of the chapters in this book point out that uncertainty reduction is an important facilitation approach when issues framed as risks are addressed at the negotiation table (the Temelín nuclear reactors, Böck and Drábová; climate change, Sjöstedt). The aim is to reduce perceived uncertainty to such a high degree that policymakers can defend expensive measures to cope with a negotiated risk, be it associated with the loss of money and technology in a joint venture, environmental harm caused by pollution, or the occurrence of accidental war (Faure, Sjöstedt, Kremenyuk, Hopmann, Zartman, this book).

In a negotiation game, uncertainty confronting negotiators "at the table" can be systematically reduced in different ways. One method, which may be labeled *genuine uncertainty reduction* has features of a scientific approach. It is based on systematic information gathering, analysis, and learning about the negotiated issue. The issue analysis that is usually part of agenda setting and issue clarification in a negotiation can be expected to trim down uncertainty about the negotiated issue: its properties, its conditioning factors, and its effects among negotiation parties. This

type of knowledge building, or issue elucidation, may be designed to cope with uncertainty as far as possible. In the cases addressed in this book such deliberate attempts of systematic uncertainty reduction were particularly visible in two areas, negotiation on *disarmament* and *climate warming*. In the disarmament negotiations between the then two superpowers these parties used all available intelligence resources to elucidate the armament capacity of the other side (Hopmann, this book). In his case study of Cold War disarmament negotiations Kremenyuk describes how Moscow and Washington established a special communication device, the hotline, to have a joint instrument available for reducing uncertainty regarding the risk of war by accident or misunderstanding (Kremenyuk, this book). In the context of the climate talks the IPCC and other negotiation institutions undertook large-scale studies and organized extensive scientific operations of information accumulation, aggregation, and assessment (Sjöstedt, this book). It seems quite clear that these IPCC activities have not only considerably contributed to enhancing knowledge and understanding of the climate issue but have also in a general sense reduced perceived uncertainty regarding the three dimensions of the climate problem: causes, manifestations of a negotiated issue, and effectiveness of countermeasures, namely mitigation and adaptation.

In her chapter on Prospect Theory McDermott highlights what she calls *the certainty effect*: people tend to treat events that are nearly, but not entirely, certain, as if they were completely certain. This preference for unstructured certainty over structured uncertainty was observed in several of the cases looked at in the book. Couched in basic Prospect Theory the certainty effect assumes subconscious mental processes that are in principle going on in the minds of individuals. However, several of the case studies point out, or clearly imply, that in some complex negotiations parties have deliberately produced an uncertainty effect to facilitate upcoming or future negotiation. At a closer look this kind of transformation of uncertainty into perceived certainty proves to have been a recurrent feature of many negotiations on transboundary environmental risks. At some critical point in the process negotiation, parties agree to transform uncertainty into certainty to facilitate the process. *Normative interpretation of a negotiated risk* is one concrete method that negotiating parties have used to attain that effect. A major example is the application of the *precautionary norm* in negotiation on environmental risks, for example, in the climate talks or the negotiation on the Temelín reactors (Sjöstedt; Böck and Drábová, this book). Negotiating parties jointly make the assumption that anticipated probable/possible negative consequences of current events (e.g., emission of hazardous pollutants) will actually occur. Thereafter, all deliberations and decisions made in the negotiation will in principle be based on that assumption. The case of climate change represents a good case in point of this contingency (Sjöstedt, this book).

The rationale of the *precautionary norm* corresponds to how people tend to perceive and assess risks emphasizing the negative consequence of a phenomenon rather than the probability of its occurrence. For example, the consequences of a nuclear accident would be so catastrophic that it is rational to assume that it will occur when security measures are considered. The worst-case assumption used with regard to national security issues represents a rationale very similar to the *precau-*

tionary principle. In its extreme form the worst-case assumption means that possibility is transformed into certainty. The enemy has a capacity to attack us therefore we need to have defense forces capable of coping with this contingency. This logic was a driver in the two cases of disarmament negotiations reported in the book. In each of the two cases the awareness of the parties that war by accident may occur represented an important condition for the agreement that was achieved and also functioned as a driving force in the negotiation (Hopmann, Kremenyuk, this book).

Overkill is another approach to transforming uncertainty into certainty. This method eliminates the need to estimate how large resources should be allocated to cope with a particular risk or danger. Discussing risk management in the area of conflict prevention Zartman provides an example. He recalls that "the coalition in the second Gulf War, operating under the Powell doctrine, decided on a massive response rather than running the danger of sliding down the slippery slope into entrapment limitation" (Zartman, this book). The logic of the overkill strategy is: "This risk needs to be managed. Therefore, we cannot afford to take the other risk that our countermeasures are too weak to be effective. Instead we have to accept the quite different risk that we engage ourselves in unnecessarily costly abatement methods."

A useful strategy to reduce uncertainty indirectly is to use a respected institution to give credibility to the interpretation or assessment of a negotiated risk. On the international scene a function of regime building may be to create such a prestigious institution. For example, in the climate negotiation a government or national agency may refer to studies undertaken by the IPCC to support a position that it wants to take (Sjöstedt, this book). Regime building may also contribute to uncertainty reduction in other ways, of which the establishment of *consensual knowledge* is particularly important. Again, climate change is an important case in point. Negotiation parties participated in and monitored the process of knowledge building that was guided and coordinated by the IPCC. The emergence of consensual climate knowledge clarified this issue and its consequences in such a way that negotiation parties could perceive reduced uncertainty as the recursive negotiation from one round to the next (Sjöstedt, this book).

Consensual knowledge as it developed in, for example, the climate talks typically reflects a long-term development so that both knowledge and consensus can be solidly established. In certain respects "institutionalized" consensual knowledge has structural properties and this may contribute to boosting its authority in the eyes of the regime members making, for example, probability estimates in risk assessment more credible.

Practical Considerations

Practitioners—policymakers, experts, and diplomats—should be aware that some issues brought to the negotiation table have the character of a risk and that such negotiated risks may require special attention as well as certain special measures. Furthermore, practitioners should also be aware that negotiated risks represent only

one of several kinds of risks that may have to be handled at the negotiation table and that unlike other types of risk may require different methods of assessment and management. This study makes a distinction between four categories of risk: *performance risks, social risks, negotiated risks*, and *implementation risks*. These types have been constructed for analytical purposes. An experienced negotiator is probably aware of problems—and opportunities—pertaining to the four analytical categories of risk, but without conceptualizing them in the same way. If the practitioner thinks in terms of risk at all, he/she is likely to use categories that are less abstract and much more integrated into the actual questions addressed on the negotiation table. One example is how Faure distinguishes between seven categories of risk that a Western partner of a joint venture risks encountering in its dealings with Chinese counterparts (Faure, this book):

i The risk of conflict of interests between the partners once the joint venture is operating;
ii The risk of cultural mismatch between the Chinese and the Western sides;
iii The risk of business failure as a result of an agreement (the agreed investment may prove to be a miscalculation);
iv The risk of technology leakage in the negotiation process (a Western company may be obliged to offer information about its high-tech machinery to keep the other party interested in the negotiated joint venture; however, the more information is leaked the higher the probability that the other side will become able to make the investment itself;
v The risk of downgrading the trademark image (production and sales by a partner lacking the necessary competence creates a risk that these joint products will harm the reputation of the Western company's own products);
vi The risk that the negotiators' time allocated to negotiation activities will be protracted and thus too costly;
vii Political risks in that an investor putting money into a joint venture could lose money through taxation, political constraints, or even confiscation.

A lesson from this study is that the practitioner will find it useful to characterize such substantive risks in terms of analytical risk categories, as this procedure will be helpful in the search for instrumental approaches of risk management. Particular risk categories tend to be associated with different methods of coping effectively with risk. For example, performance risks in a negotiation (categories *iv* and *vi* above) represent quite a different mix of opportunities and problems than a social risk (category *ii* above). Accordingly, a negotiating party needs to make different considerations and do different things when it confronts a performance risk than when it confront a social risk.

However, quite a different lesson is that although the categorization of risks is useful for both analytical and practical purposes, the distinction between types of risk must be treated with care. There are important interaction effects between performance, social, and issue-conditioned risks. This observation is important to note and does not disqualify the analytical risk categories. When assessing a risk situation, parties need to take into account the association between categories. For

example, a frequent association is likely between certain social risks and the risk for implementation failure. If you cannot trust the opposition party because you consider it to be either unreliable or incompetent regarding the negotiation issue, then you have to consider the risk that the accord you reach will not implement well. You need to retain a holistic outlook on this problem area. Still, the distinction between social and implementation risk is useful.

First, implementation risk may occur also in the absence of social risks, for example, simply because the agreement that one has signed cannot cope with the problem that one has negotiated about. Second, the separation of different types of risk facilitates the decision as to how to deal with a risk problem. If one foresees or suspects upcoming implementation problems from the agreement one is negotiating, the association between the social and the implementation risk conditions the search for suitable remedies. If there is no association, recursive negotiation to improve the instrumental quality of the agreement may be an appropriate solution to the problem. If, on the other hand, there is a strong association between the implementation and the social risk, then recursive negotiation may also be useful, but does not solve the problem. A satisfactory way out entails the impact of the social risk on the implementation problem being considered and properly analyzed. If the social risk were a function of unreliability, a useful approach would be to include instruments for compliance control in the agreement. If, on the other hand, the social risk were caused by incompetence, including a lack of necessary capabilities and resources, appropriate verification measures would not be sufficient. Instead, a possible remedy would be assistance to the other side in order to enhance its capabilities or to build up its capacity.

There are other association effects that the practitioners also have to consider. Dupont warns that there is important interaction between, on the one hand, perceptions, assessment, and management of risks and, on the other, negotiation strategy and performance generally. The important lesson for the practitioner following on from this proposition is that even in a situation where a risk problem (for example, the insurance dilemma of a negotiated risk) is estimated to be fairly insignificant, special measures to cope with it may be warranted. Unless the risk is dealt with effectively, other and worse problems will become amplified (Dupont, this book).

Practitioners need to consider some paradoxical consequences of a high-risk situation. If a risk situation represents a problem for negotiating parties, then the situation can be expected to deteriorate with an increasing risk, but seemingly only up to a point. Precisely because high risks are often associated with danger, they may also help the negotiation along. The prospect of danger, important potential costs, or a destabilized situation will create a strong common interest in a negotiated agreement and constrain parties from taking deliberate high performance risks. If the risk confronting negotiating parties is perceived to be moderate, it may be wise to try to reduce the perceived risk as much as possible before final bargaining for an agreement starts. If, on the other hand, the risk is perceived to be very high, it may, somewhat illogically, be wiser to abstain from risk diminution in order to take full advantage of high-risk incentives and constraints.

A special feature of negotiations on issues having a risk character is that risk perceptions have to become reasonably harmonized if an agreement is to be reached. Such synchronization may follow on from the establishment of a sequence of accords that marks the typical development of a multilateral negotiation: agreement on agenda and issues, on formula, and on details. Negotiated risks can be managed with standard negotiation performance. However, practitioners need to be aware that in some situations special measures to harmonize risk perceptions will considerably facilitate an accord on a mechanism or a procedure for risk management. This may in turn be a prerequisite for a final total agreement in the negotiation. The practitioner needs to consider that there are alternative approaches to harmonization of risk perceptions, and that different professions active in a negotiation are likely to have conscious or unconscious preferences in this regard. The diplomat has to be aware that these initially almost indiscernible divergences may emerge and have a significant impact. He/she must also be prepared for disrupting differences regarding risk perceptions to manifest themselves not only across the negotiation table, but also within his/her own delegation.

Different governments and organizations may have an interest in a certain risk perception. Governments that do not possess nuclear or biological weapons have a political interest in emphasizing the risks of such arms. Therefore, the practitioner must be aware that a discussion of an academic character about, say, a transboundary problem in the early stages of agenda setting and issue clarification, may be as much a power struggle as the tug of war of delegations in the exchange of concessions at the end of the talks. Delegations have two kinds of interests to defend and promote regarding risk perceptions, including the understanding of issues representing a negotiated risk. For those delegations that are genuinely concerned with the risk, a major interest is to assist in developing and clarifying joint interests and objectives that can drive the process. A second interest is to secure and advance achievement of distributive aims, which may mean either maximizing positive gains or, more often, minimizing costs. For a delegation with sufficient capacity to do so, it is advantageous to include distributive concerns in its strategy to develop joint objectives for all negotiating parties.

The practitioner must be aware of the alternative approaches for narrowing down divergent risk perceptions, in addition to the carrots and sticks of traditional diplomacy. A critical element in this regard is management of uncertainty. In theory at least, one method is to rely on scientific study and calculation. However, this approach is probably only viable under special circumstances similar to those prevailing in the pre-Kyoto climate negotiations: a shared image of a threat, a shared lack of knowledge, and high issue complexity.

A more useful approach is probably the coordinated joint build-up of consensual knowledge pertaining to a negotiated risk and management approach. A related strategy would be trust building. The key to both these approaches is effective and constructive communication. The practitioner should note that the process itself is of critical importance. The purpose of communication is not only to reach a formal accord on, say, consensual knowledge or issue construction that can be put into a document. An important partial aim is to establish commitment to this consensual

knowledge or issue construction. To achieve this aim the practitioner must be prepared to allocate resources and time to the process that may look excessive if the need for extensive and perhaps recursive discussions to produce mutual understanding is not considered. The need for process time is greater if the aim is not only to reach consensus on the understanding of the issue—the negotiated risk—but also to build up trust in a relationship between two or more parties. If the conditions are right, such an investment in time and resources will be profitable. A lesson from the Temelín case presented in this book is that trust building may not only be a substitute for scientific risk assessment. It may also to some extent replace a formal agreement.

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About the Processes of International Negotiation (PIN) Network at the International Institute for Applied Systems Analysis (IIASA)

Since 1988 the PIN Network at IIASA in Laxenburg, Austria, has been conducted by an international Steering Committee of scholars, meeting three times a year to develop and propagate new knowledge about the processes of negotiation.

The Committee conducts one or two workshops every year devoted to the current collective publication project, involving scholars from a wide spectrum of countries. This allows PIN to tap into a broad range of international expertise and to support scholarship on aspects of negotiation. It also offers mini-conferences on international negotiations aimed at encouraging and disseminating research on the subject. These "Roadshows" have been held in a number of countries: the Argentine Council for International Relations, Buenos Aires; Beijing University, China; Center for Conflict Resolution, Haifa, Israel; the Center for the Study of Contemporary Japanese Culture, Kyoto; School of International Relations, Tehran; Netherlands Institute of International Relations, Clingendael, The Hague; Swedish Institute of International Affairs, Stockholm; University of Cairo, Egypt; Centre for the Study of Civil War at PRIO, Oslo, Norway; University Hassan II, Casablanca, Morocco; University of Helsinki, Finland; Diplomatic Academy, Vienna, Austria; University of Bayreuth, Germany; UN University for Peace, San José, Costa Rica; and The Johns Hopkins University in Washington, Bologna, and Nanjing.

Twice a year, the PIN Network publishes a newsletter, *PINPoints*. It also sponsors a network of over 4,000 researchers and practitioners in negotiation.

The PIN Network has been supported by the William and Flora Hewlett Foundation and the US Institute of Peace. Contact: pin@iiasa.ac.at.

Selected Publications of the PIN Program

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