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Thinking Outside the Box in Multilateral Disarmament and Arms Control Negotiations

John Borrie and Vanessa Martin Randin
Editors

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About the cover

Frieden (Peace) was a gift from the artist René Brandenberger to the City of Geneva in honour of the Conference on Disarmament in 1983. The sculpture is installed near the Palais des Nations in Geneva, Switzerland.

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The second publication, *Disarmament as Humanitarian Action: From Perspective to Practice,* was published in 2006.

The United Nations Institute for Disarmament Research (UNIDIR)—an intergovernmental organization within the United Nations—conducts research on disarmament and security. UNIDIR is based in Geneva, Switzerland, the centre for bilateral and multilateral disarmament and non-proliferation negotiations, and home of the Conference on Disarmament. The Institute explores current issues pertaining to the variety of existing and future armaments, as well as global diplomacy and local tensions and conflicts. Working with researchers, diplomats, government officials, NGOs and other institutions since 1980, UNIDIR acts as a bridge between the research community and policy makers. UNIDIR's activities are funded by contributions from governments and donor foundations. The Institute's web site can be found at:

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FOREWORD

In late 2004, the United Nations Institute for Disarmament Research (UNIDIR) began a research project entitled *Disarmament as Humanitarian Action: Making Multilateral Negotiations Work* (DHA). The project, assisted financially by the Governments of Norway and the Netherlands, examines current difficulties for the international community in tackling disarmament and arms control. Recognizing that a greater humanitarian focus is relevant to the work of multilateral practitioners like diplomats and other policy makers, the project is concerned with developing practical proposals to help them apply this in functional terms.

Until recently, thinking in disarmament and arms control was focused on security concepts dominated by external threats to states, especially from other states. These orthodox approaches have been found wanting in the face of new international security challenges. Indeed, the majority of multilateral processes in the disarmament domain failed to make substantial progress over the last decade, themes discussed in the DHA project's first volume of work, entitled *Alternative Approaches in Multilateral Decision Making: Disarmament as Humanitarian Action*, published in 2005.

It is here that human security and humanitarian approaches to disarmament and arms control could have great effect. Such approaches put greater stress on the individual and their community as reference points for security. This enables problems of armed violence to be framed in new ways and appropriate responses to be identified that may not have been considered before.

The spread and humanitarian effects of small arms, such as assault rifles and handguns, is an example in which human security perspectives make a great deal of sense. Not only do small arms kill many of thousands of civilians each year, their presence can have a chilling effect on trust and cooperation, clouding the socio-economic prospects of millions of people, one household or street at a time. The mosaic of small arms proliferation can be better understood once we start thinking about what drives individual perceptions of insecurity and the resulting social interactions.

At root, disarmament and arms control problems are issues of human security. People are hurt or killed and their communities undermined and destroyed by armed violence. Yet traditional multilateral approaches to security, especially in arms control, have been geared toward counting and deciding what to do with discrete weapons and their components—whether they are bombers, tanks, nuclear warheads or poisonous chemicals—which usually are controlled by governments. However, as we are witnessing, this type of approach can be confounded by the sheer complexity of the task. New security challenges are increasingly defined by the *interdependence* of many variables, rather than the innate strategic properties of specific objects or systems. Infectious disease; refugees and internally displaced people; trafficking in people, guns and narcotics; and environmental damage do not fit into the existing multilateral "box" at all well, and our collective responses are poorer for it.

Another hallmark of humanitarian approaches to disarmament is that they harness the insights offered by many different perspectives to meet practical challenges. This cognitive diversity—from affected communities, humanitarian deminers, medical personnel working in victim assistance and civil society activists for example—has been critical to the success of initiatives like the 1997 Anti-Personnel Mine Ban Convention. The DHA project's second volume of research, *Disarmament as Humanitarian Action: From Perspective to Practice*, provided practical insights into the ways in which civil society has augmented the work of states from humanitarian contexts such as international efforts on explosive remnants of war, small arms and anti-personnel mines.

The ways in which disarmament diplomats do business is in need of remedial attention. Despite the catch-cry often repeated that "one size does not fit all" in finding multilateral solutions, precedent and past practice exert a very strong hold that can constrain innovation and flexibility among state representatives charged with those tasks. Sometimes, the attempted—and often abortive—responses of established multilateral institutions, like the Conference on Disarmament, are responses more striking for their inherited procedural resemblance with one another than for their ability to achieve a meaningful goal successfully. Familiar tools and approaches may be chosen, rather than selecting those most appropriate for the job at hand.

Human security and humanitarian approaches are useful for multilateral disarmament practitioners in understanding the security challenges they

face in their work. Thinking at the human scale can also help them think about the constraints on their own interactions and effectiveness. All of this prompts important questions: is it possible to tailor the international system's responses and methods of dealing with common security problems in order to achieve better outcomes? If so, then how?

The common theme of the contributions to this volume, the DHA project's third, is to look, from different angles, at how multilateral negotiations can be made to work better than they do. They present no easy or magical solutions. But, the volume does offer multilateral practitioners—including disarmament diplomats, their authorities in capitals, and civil society actors involved in the international security domain—practical ways to think outside the box by furnishing them with new tools and perspectives.

The completion of the work presented in this volume would not have been possible without the generous support of the Governments of Norway and the Netherlands. In particular, the DHA project team and I would like to thank Steffen Kongstad, Susan Eckey and Annette Landell of the Norwegian Ministry of Foreign Affairs, as well as the Norwegian and Dutch Permanent Missions in Geneva. Anita Blétry, Christophe Carle, Rosy Cave, Nicolas Gérard, Eoghan Murphy, Jason Powers, Isabelle Roger, Ashley Thornton and Kerstin Vignard of UNIDIR were unfailingly helpful, as were all of those who commented on or reviewed the volume's contents. We would also like to thank the UN Department of Disarmament Affairs in Geneva, and in particular Tim Caughley, Richard Lennane and Piers Millet, the staff of the Mines-Arms Unit of the International Committee of the Red Cross, as well as the Small Arms Survey, especially Anne-Kathrin Glatz and James Bevan, Patrick McCarthy of the Geneva Forum and David Meddings of the World Health Organization. In addition, the DHA team asked me to mention the particular inspiration they drew from the work of Robert Axelrod, Philip Ball, Robin Dunbar, Paul Ormerod, Paul Seabright, Thomas Schelling and Frans de Waal.

Without doubt, more creativity and flexibility is needed in the current multilateral security environment. Our hope is that those working in multilateral disarmament and arms control, as well as the general reader, will find the perspectives in this volume stimulating, at times provocative, and ultimately useful in helping them to think outside whichever box they are in. Following the DHA project's other work, it is a fitting that this volume

emerges in the twenty-fifth anniversary year of UNIDIR, an institute established to produce ideas for peace and security.

Dr. Patricia Lewis
Director
UNIDIR

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CHAPTER 1

WHAT DO WE MEAN BY "THINKING OUTSIDE THE BOX" IN MULTILATERAL DISARMAMENT AND ARMS CONTROL NEGOTIATIONS?

John Borrie

SUMMARY

This introductory chapter provides background to the others in this volume, including the way in which the analyses of contributors relate to one another, and to the broader themes of "thinking outside the box" in multilateral disarmament work.

INTRODUCTION

Multilateral negotiations are unusual and, in many ways, remarkable social phenomena. Most human activities involving large numbers of people in making collective decisions are either zero-sum events (like battles, sports games or auctions) or have thresholds that fall well short of consensus (electoral majorities, for instance).

In contrast, multilateral meetings may involve hundreds of participants, not counting people from authorities in capitals to whom they report and seek guidance. Yet outcomes are expected to be of collective benefit, that is, non-zero sum. Moreover, in the multilateral disarmament and arms control context, the threshold for agreement is usually consensus, despite the multiplicity of actors that can make this difficult to achieve.

Often, in international relations, the concepts and language we are accustomed to using are geared toward capturing what goes on at a certain level of organization, that of interactions between states. Yet there are also other levels of organization relevant to understanding multilateral negotiations. People represent each state, and these people interact, which

is what adds up to state interaction. The most effective diplomats I have encountered are invariably socially perceptive and able to quickly grasp where opportunities for compromise or deal making might emerge in complex and uncertain circumstances. They back this up with the ability to exploit these opportunities through persuasion and creative reasoning. Diplomats, politicians and other negotiators often talk of what they do as a "black art", one that relies on their instincts and ability to "smell the room", as well as their rational intellect.

Negotiators are heavily dependent on social transactions between each other to do what they do, and their level of performance matters in making multilateral negotiations work (if this was not the case, multilateral negotiations could be carried out by fax—and possibly would be, in view of the expense of maintaining diplomats abroad and sending delegations to multilateral meetings). So, the nature and structure of multilateral interactions is worth further scrutiny. Multilateral environments that promote and facilitate contact, as well as the development of trust between practitioners enabling more flexible arrangements for dialogue and the emergence of cooperation, are likely to be more productive. For want of a better term, this could be described as the *cognitive ergonomics* of negotiating.

Ergonomics are important, as anyone who has used an uncomfortable keyboard or sat in a cramped airline seat knows. Good ergonomics serve to make us work better: they prevent carpal tunnel syndrome while letting us type faster, and that business class bed and service enables us to get off the airplane after a long flight and head straight into a meeting, rather than collapse in an exhausted heap into the nearest hotel bed. Interestingly, while disarmament diplomats spend a remarkable proportion of their time and energies vying over matters of procedure in multilateral processes (the Conference on Disarmament, which has been deadlocked over a programme of work for almost a decade, is a case in point), in general they give little sustained thought to whether their perceptions, habits of work and structures they work within might be important to their effectiveness.

AN INCONVENIENT TRUTH

If viewing multilateral negotiations in this way seems strange to the reader it makes the point that we are used to thinking about multilateral diplomacy

within a particular frame of reference. Diplomats themselves have a distinctive "community of practice" in international security matters, which we discussed in the first volume of work of the *Disarmament as Humanitarian Action* (DHA) project.[1] This common way of looking at what they do and how to go about it has built up gradually over a long time—often so slowly that its development is hardly discernible. While this community of practice is sometimes a great help to diplomats from different countries and cultures, it can also reinforce unhelpful unorthodoxy that is then difficult to challenge.

In a recent film documentary entitled *An Inconvenient Truth*, former US Vice-President Al Gore compared the responses of some policy makers in the face of global climate change (most likely induced by human activity) to that of a frog dropped into a pot of boiling water. The apparent cruelty of such an act aside (no animals were harmed: it was demonstrated with a cartoon frog), the frog immediately leaped out of the pot. A frog dropped into a pot of cool water gradually being heated on a stove, however, did not notice the rise in temperature until it was too late and it found itself, literally, cooked.

To some of us following its work, the water seems to be getting uncomfortably warm in multilateral disarmament diplomacy. In May 2005, for instance, the five-yearly review meeting of the Nuclear Non-Proliferation Treaty (NPT) failed to reach any agreement, despite looming threats to the global non-proliferation regime. It was followed by the failure of an international meeting just over a year later to review the 2001 UN Programme of Action to curb the illicit trade in small arms and light weapons. Meanwhile, the Comprehensive Test Ban Treaty (CTBT) remains in limbo a decade after it was signed without the required ratifications to enter into force internationally. And, effective, verifiable and irreversible nuclear disarmament remains a distant dream, not least because the primary multilateral body tasked with negotiating it, the Conference of Disarmament (CD), remains deadlocked.

The case of the CD paints an especially stark picture of the limits in the current thinking of many politicians and diplomats. Its long impasse confronts policy makers with the paradox that, even as they try to assert the importance of multilateralism as a way for states to peacefully and cooperatively achieve their security goals, they are hindered by the accumulated process and procedures of the institution that work against

this. These factors include the strong grip of precedent, the consensus rule, regional groupings and the exclusion of civil society. At its crux, the CD's current situation implies heavy costs for most states that contemplate trying to break out of the impasse, something analysed in detail later in this volume.

It is perhaps little surprise then, that, in recent years, multilateral practitioners in disarmament and arms control have talked a lot about the need to "think outside the box". It is not always clear, however, what they mean by thinking outside the box beyond recognition that they would like a better return on their investment in multilateral work. Like frogs in Al Gore's slow-boiling pot, many multilateral disarmament diplomats suspect something is not as it should be, although not to the extent that they have yet been prompted to make any big leaps *en masse*. Almost 10 years after the agreement of the Anti-Personnel Mine Ban Convention that carried with it hopes of a "new multilateralism" emerging, disarmament diplomacy largely remains business as usual, despite its recent dismal record.

Meanwhile, United Nations reform is a hot topic, and justly so. However, it is clear that managerial or bureaucratic changes to the organization, while important, are by themselves *not* going to be a guaranteed way to make multilateral interaction between state representatives vastly more productive. How multilateral practitioners perceive and choose to respond to the challenges they must deal with also needs to be examined. As we explained in our first volume of work, because of the gradual, evolutionary character of multilateral disarmament work, many of its distinctive features may no longer suit creative and constructive problem solving. Some of these features were never consciously or coherently incorporated. Others originally had a purpose but have since become artefacts. Yet other features have changed in function because of changes in their patterns of use in multilateral work.[2] The CD's antecedent, the Ten Nation Committee on Disarmament, for instance, began its work in 1959. Since then, the CD has grown to 65 member countries, while the United Nations now exceeds 190. Yet regional groupings in both institutions reflect Cold War divides, not current circumstances in which pressing international security challenges are far more cross-cutting and issue specific.

If multilateral practitioners are really serious about thinking outside the box, their community of practice is a good place to look for ways to improve their effectiveness. Curiously, while there is a great deal of academic

international relations research into how cooperation develops between *states*, a lot of it dates to the Cold War era and is usually weak on delivering specific recommendations for action to negotiators in the contemporary era. A particular shortcoming Vanessa Martin Randin discusses in the next chapter is that the academic literature does not seem to explain convincingly how the roles and influence of transnational civil society actors in the multilateral context can be explained, although they have clearly had an impact.

Rectifying this is important because, historically, the engagement of civil society actors has sometimes been a practical means to making multilateral processes more effective, especially when it has led to the questioning of features of those processes that have lost their purpose or utility. Research published in our preceding volume of work, entitled *Disarmament as Humanitarian Action: From Perspective to Practice*, which drew on contexts such as international efforts on explosive remnants of war, small arms and anti-personnel mines, showed that, beside high-profile successes like the Mine Ban Convention, humanitarian approaches (usually initially presented by civil society) can also help multilateral norm-building in low-key ways, like the Geneva Forum's work on small arms.[3] These approaches have sometimes altered government perspectives, and have consequently enabled them to identify new opportunities for productive cooperation. In his chapter in this volume on "NGOs and Multilateral Disarmament Diplomacy: Limits and Possibilities", David Atwood has described this phenomena as civil society "being in the middle by being on the edge", drawing upon his extensive experience with the Quaker United Nations Office in various issue areas.

It is no coincidence that the arms control processes which have made most progress over the last decade are ones in which those involved have been able to see challenges and responses in humanitarian terms, for instance on anti-personnel mines and explosive remnants of war. But these successes have not yet translated widely into other multilateral disarmament processes. The nagging question remains the problem of why disarmament and arms control endeavours are failing more generally. Is it all, as some diplomats maintain, simply down to the lack, or wrong kind, of "political will"?

There is no getting away from the reality that differences among states—especially conflicting interests—are key to the lack of progress in the current

multilateral disarmament and arms control context. Such differences are present in all of the examples of recent multilateral failure mentioned earlier. But differences among states have not prevented other kinds of international security cooperation from emerging, such as the Proliferation Security Initiative, Group of Eight cooperation or cooperative efforts under UN Security Council resolution 1540.[4] State differences have not led to apathy in the UN General Assembly's First Committee, in which states frequently vote over disarmament-related topics and continually seek to build and maintain dynamic coalitions of support on these issues. Lack of political will is therefore not the whole story and, as explained in our first volume, the very idea is actually sometimes unhelpful in figuring out how multilateral difficulties can be overcome.[5]

In her chapter, entitled "Changing Perceptions and Practice in Multilateral Arms Control Negotiations", Rebecca Johnson observes that states' expectations and interests in multilateral negotiations are not fixed. She argues that these expectations and interests can and should be reshaped if multilateral practitioners are to be more productive. Her view, and one shared by other contributors to this volume, is that the crisis in multilateral arms control is partly due to the fact that too many of the current rules, assumptions, institutional practices and negotiating strategies still reflect the Cold War's adversarial state-centric power structure. In dissecting the typical negotiating tactics of states in negotiations like those in the Comprehensive Test Ban Treaty negotiations, she shows how more needs to be done to adapt them to meet the human security concerns that are relevant for the twenty-first century and offers some ideas for "cognitive tactics", which increase opportunities for more mutual and participatory solutions to be created.

Two decades ago, the political scientists Robert Axelrod and Robert Keohane used game-theoretic tools to arrive at key insights about the emergence of cooperation at the international level, and the roles of collective norms and institutions in this phenomenon. They concluded that, over time, *context is malleable*, an insight of continued relevance to all multilateral practitioners: "not only can actors in world politics pursue different strategies within an established context of interaction, they may also seek to alter that context through building institutions embodying particular principles, norms, rules, or procedures for the conduct of international relations."[6]

Sometimes, as noted above, sustaining cooperation in multilateral disarmament and arms control is impossible because negotiating actors have conflicting interests that cannot be reconciled within the framework of existing institutions. These institutions are unable to lower transaction costs to a point where cooperation is of enough perceived benefit. But tackling issues of global concern like halting fissile material production, preventing poisoning or deliberate spreading of disease, or curbing the proliferation of illicit small arms and light weapons are not zero-sum. States should be able to cooperate on these issues, in view of the serious humanitarian consequences of a nuclear explosion, biological weapons attack or the rising death toll and insecurity already occurring because of an epidemic of global gun violence.

Yet this is not the case. Altering the international context over time, of course, can have consequences for the emergence of cooperation that may be negative instead of positive—that can increase the costs of cooperating, rather than reduce them. In presenting an updated version of an article originally published in *Disarmament Diplomacy*, entitled "Cooperation and Defection in the Conference on Disarmament", I analyse that institution's protracted deadlock from a game-theoretic perspective. Also, I offer what I hope is a fresh perspective about practical ways forward for reviving that forum while, more importantly, making meaningful progress on urgent arms control priorities.

Most of the contributors to this volume draw on considerable multilateral experience, as well as other perspectives including work in the humanitarian field, policy and academic research and advocacy. It is especially welcome that a multilateral diplomat currently working in the areas we discuss in this volume is willing to put forward his personal reflections; in his chapter, Daniël Prins looks at current multilateral problems from a diplomat's perspective, and suggests new ways he and his colleagues could engineer progress in disarmament contexts. These include exercising greater flexibility and initiative in the use of regional groupings as blocs, procedure, diplomats' relations with their authorities in capitals, and in involving non-governmental organization (NGO) partners.

COMPLEXITY

Prins touches upon the increasing complexity of multilateral work, both in terms of the difficulties that issues of interconnection pose for traditional

ways that states frame their security responses, and the sheer range of negotiating actors to deal with in arriving at those responses. In view of this, he notes that, "Leaving the beaten track is simply difficult to manage in terms of the new uncertainties it introduces for individual negotiators." In two chapters of this volume the DHA project examines what complexity is, and what its implications are for multilateral negotiators.

For most people working in disarmament, complexity in the physical, scientific sense is not something they think about much. Indeed, when many multilateral practitioners talk about "complex" phenomena, it seems they often confuse them with those that are "complicated". Policy makers need to move beyond rhetoric about complexity and interdependence toward a real conceptual understanding about the distinctive characteristics and implications of these systems we describe if they want to benefit from practical insights that scientific advances in understanding complexity offer.

These benefits are real. Following on from ideas I introduced in the DHA project's first volume of work, Aurélia Merçay and I show in our chapter entitled "A Physics of Diplomacy?" how the rational approach that has roots in the seventeenth century shapes diplomats' minds and the ways they are inclined to look at the world. However powerful it is, this approach faces limitations in dealing with complexity, especially where social systems and problems of armed violence are concerned. In plain language terms we explain scientific concepts such as phase transitions, self-organized criticality, and complexity and network theory in order to equip multilateral practitioners with the basic tools to frame these issues.

One of our suggestions is that multilateral negotiations can themselves be considered as complex social systems—a realization that has implications we are still coming to grips with. Another is that the quantitative tools of complexity theory are of great potential usefulness in understanding the social interactions underlying small arms proliferation, a field of research that is starting to burgeon. To illustrate this, Merçay presents a non-linear model of small arms proliferation, inspired by mathematical techniques used in physics and biology, in a following chapter. Rather than making predictions, the model is a striking conceptual tool that is useful in at least three ways:

- it highlights the core factors influencing demand for small arms in a manner taking into account the profound effect that social interactions have on individual decision making;
- it helps to account for puzzling disparities in rates of gun ownership between apparently similar social systems that each display phase transition patterns—non-trivial sudden switches between two very different levels of gun ownership; and
- it potentially offers policy makers the prospect of new policy options to address aspects of small arms proliferation.

For reasons explained in our chapter on "A Physics of Diplomacy?", a feature of complex systems is that they are inherently unpredictable, which is an important caution for policy makers and researchers. Nevertheless, important steps Merçay identifies for further research include developing agent-based models to simulate social systems with many interacting elements. This would enhance understanding of local-level interactions like those at the heart of small arms proliferation.

In a related vein, Nathan Taback and Robin Coupland present a chapter on "Security of Journalists: Making the Case for Modelling Armed Violence as a Means to Promote Human Security." Health professionals, for instance, have already gathered much empirical data that could be of considerable use to practitioners and other decision makers in choosing policies to effectively reduce human insecurity. To demonstrate this, they have developed a methodology to build a "security profile" studying attacks on journalists that uses analysis of media reports. They conclude that this approach can generate meaningful data about the multiple potential effects of armed violence on any particular vulnerable group (as exemplified by journalists working in conflict areas). Further development of this statistical approach could be a useful tool, especially as it can also be applied in a variety of contexts and to vulnerable groups other than journalists, in order to obtain information about the level of human insecurity in a given situation.

APPROACHING DISARMAMENT FROM THE BOTTOM UP

Gro Nystuen's chapter is written from the perspective of a veteran diplomat and expert on international humanitarian law. She is currently Chair of the Advisory Council on Ethics for the Norwegian Government Pension Fund–

Global, which is one of the world's largest public funds with investments of more than €200 billion. The creation of this Council stemmed from public debate in Norway in the late 1990s about the need for ethical guidelines for the Norwegian Government Petroleum Fund. In 2006, fifteen large arms-producing companies were excluded from the Fund on the Council's recommendations. Nystuen's chapter explains how the Ethical Guidelines came about and how they function, as well as looking at the consequences of the Guidelines for investment in arms production more generally, including implications for on-going advocacy work related to cluster munitions.

The final chapter of *Thinking Outside the Box in Multilateral Disarmament and Arms Control Negotiations* considers the role of NGOs in the monitoring and verification of international arms control and disarmament agreements. As the nature of the relationships between civil society and governments has changed over the last decade-and-a-half, new issues, risks and opportunities have arisen. Drawing on the accumulated experience of the London-based Verification, Research, Training and Information Centre (VERTIC), Michael Crowley and Andreas Persbo review case studies of civil society organizations and networks currently active in the field of monitoring and verification, and explore how such activities can be further developed in the future. In the current international climate there are many difficulties associated with generating enough resources for NGO activities in this regard, besides allowing them to operate without restriction and acting upon their recommendations. But this interesting analysis provides multilateral practitioners with useful insights about working with civil society in this area in future disarmament and arms control initiatives.

BEYOND THE BOX

This volume does not attempt to be a comprehensive manual or guide to making multilateral negotiations work. Our suspicion, based on interacting with many diplomats and NGOs in these environments over the years, is that they would be unlikely to read such a tome anyway. Moreover, there is often a gulf between the policy-making and research communities in disarmament that can be difficult to bridge. Researchers often have only little or a naïve understanding of how multilateral policy processes really work. Diplomats, for their part, are often unrealistic in assuming that anyone can offer them ready-made solutions that will save them the trouble

of fashioning worthwhile and acceptable negotiating outcomes—it is, after all, what *they* are tasked with doing.

In all likelihood, specific ways to engineer further progress on disarmament and arms control-related issues in the multilateral context will have to come from practitioners themselves, especially from diplomats. Judging by recent multilateral deadlocks and failures, though, many of them could use some inspiration, for instance through the input or skill in facilitating that others, such as NGOs, can inject. The *Disarmament as Humanitarian Action* project has tried to show that there are valuable lessons to be drawn from recent multilateral experience, and that there are also useful things to be learned from other fields and other perspectives. To that end, the chapters in this volume are intended to both provoke multilateral practitioners and to assist them by providing new tools and perspectives to help them work better. The urgent need for this should be evident: even in the richest, most powerful or most sheltered societies, problems of human security exacerbated by the availability of weapons are nearer our doorsteps in an interconnected world than we often imagine. If we can accept this reality as the basis for reframing and redoubling multilateral disarmament efforts, we are already starting to think outside the box.

Notes

1 John Borrie and Vanessa Martin Randin (eds), *Alternative Approaches in Multilateral Decision Making: Disarmament as Humanitarian Action*, UNIDIR, 2005.

2 See Vanessa Martin Randin and John Borrie, "A Comparison between Arms Control and Other Multilateral Negotiation Processes", in John Borrie and Vanessa Martin Randin (eds), *Alternative Approaches in Multilateral Decision Making: Disarmament as Humanitarian Action*, UNIDIR, 2005, pp. 67–129.

3 John Borrie and Vanessa Martin Randin (eds), *Disarmament as Humanitarian Action: From Perspective to Practice*, UNIDIR, 2006.

4 United Nations Security Council, document S/RES/1540 (2004), 28 April 2004.

5 See John Borrie, "Rethinking Multilateral Negotiations: Disarmament as Humanitarian Action", in John Borrie and Vanessa Martin Randin

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6 Robert Axelrod and Robert Keohane, "Achieving Cooperation under Anarchy: Strategies and Institutions", *World Politics,* vol. 38, no. 1, Johns Hopkins University Press, 1985, pp. 226–254.

CHAPTER 2

DIPLOMATS, CIVIL SOCIETY AND ACADEMIA: SOME THOUGHTS ON THE LIMITS OF THE DISCOURSE

Vanessa Martin Randin[1]

SUMMARY

There is a large body of literature examining the nature and evolution of cooperation in the international system. This chapter briefly surveys some of this work to examine what it offers in terms of understanding the roles of diplomats and transnational civil society in multilateral processes in the arms control and disarmament field.

INTRODUCTION

An important question in international relations is why does cooperation among states emerge on some arms control and disarmament issues but not on others? Moreover, what circumstances favour its emergence? What strategies might foster cooperation?

There is a significant body of normative and empirical research aimed at understanding cooperation in the international system.[2] But it is not always clear how it applies to the work of practitioners in the multilateral arms control and disarmament field, who grapple with these questions in practical form on a continual basis.

One aspect of the existing literature on cooperation in the international relations context is that most of it stems from a view of international relations that often fails to take into account security challenges other than those posed by states *to* states. But the world has changed considerably since the end of the Cold War, the period from which a lot of that work dates. As we described in the *Disarmament as Humanitarian Action*

project's first volume of work, many contemporary problems of international security, such as small arms proliferation, terrorism and the diffusion of new technologies that could be turned to hostile use, are defined by their interconnections. This challenges the traditional ways states do business at the multilateral level. Most often, this results in policy recommendations that may not be central or even especially relevant to dealing with these issues.[3] And, while these phenomena may not pose existential threats to states, they certainly pose humanitarian threats at the individual and community levels.

Also, there has been a great increase in the number of civil society actors and networks engaged in trying to influence global or transnational policy. Acknowledging the reality that these new forms of actors are present in many international policy-making contexts can offer important perspectives for:

- understanding the dynamics of multilateral disarmament work and the environment in which negotiators operate;
- considering the roles played by different actors—both in institutional and individual terms—in arms control and disarmament negotiation processes; and
- making practical and realistic suggestions to further their work.

In chapter 7 of this volume, Aurélia Merçay and John Borrie look at the potential for using scientific advances in understanding complexity to help multilateral policy makers frame more effective responses to problems of armed violence. In contrast, this chapter will briefly survey some of the literature examining international negotiations in terms of what it offers in understanding the roles of diplomats and transnational civil society in multilateral disarmament and arms control work. It is by no means comprehensive.

As it will become clear, there are competing ideas among academics in the international relations field about the causes and motivations for cooperation among states. The next section provides a brief overview of some of that literature.

INTERNATIONAL RELATIONS AND THE STUDY OF COOPERATION

"Realism" largely developed in response to the failure of liberal principles to maintain peace in Europe after the First World War. Since the Second World War it has occupied a dominant position in the practice and study of international relations. There are two principal schools of thought within the realist paradigm: "traditional" and "structural" realism. Hans J. Morgenthau was dubbed as a leading figure of the former, while Kenneth Waltz is best known for his "structural" theories of realism (commonly referred to as neo-realism) in the 1980s.

Morgenthau's theory of realism, as presented in his 1948 book *Politics Among Nations: The Struggle for Power and Peace,* was a direct response to E.H. Carr's challenge to create a "science of international politics".[4] In *Politics Among Nations* Morgenthau put forward a comprehensive theory of "power politics" applying the "positivist methodology of the 'hard' or natural sciences to the study of international relations".[5] His theory was built on the "philosophical basis of realist principles of human nature, the essence of politics, the balance of power and the role of ethics in foreign policy".[6] As John Lewis Gaddis described the approach in a later, revisionist critique:

> The principal characteristics of this science were its reductionism—the argument that a drive for power inextricably rooted in human nature animated all politics—and its tough-mindedness—the assertion that a focus on power would free the study of international relations from the sentimentality, legalism, and irrelevant empiricism with which it had been afflicted.[7]

However, Kenneth Waltz, Richard N. Rosecrance and K. J. Holsti, among others, argued that Morgenthau failed to provide reasons why the "craving for power should necessarily take precedence over other human desires, or determine all human actions, or remain immutable for all time to come".[8] Just as importantly, "realism" provided no real recommendations for policy makers besides counselling them to "exercise prudence and restraint".[9]

Waltz's neo-realist theory of international relations that eventually followed was an attempt to bring traditional realism more into line with the current affairs of the day.[10] As Scott Burchill explained:

> A theory selects and organises facts, processes and relationships into a separate domain so that importance and significance can be identified. The isolation of one domain from another in order to study it is artificial, but this is an intellectual strength rather than a weakness. Although the effect of such a process is to simplify complex forces and relationships, this is the only way meaningful explanations can be reached. Accordingly, Waltz applied the same approach to the study of international relations. His "structural realism" argues that by "depicting an international political system as a whole, with structural and unit levels at once distinct and connected, neo-realism establishes the autonomy of international politics and thus makes a theory about it possible.[11]

In broad terms, neo-realism was built on two assumptions:

- the international system is anarchical (taken to mean the lack of common government in world politics); and
- states in the system are primarily interested in their own survival.[12]

Cooperation among states is difficult to achieve from a neo-realist perspective, even when states have common interests. This is because "the lack of a central world authority often deters them from incurring the reciprocal obligations that cooperation demands."[13]

The neo-realist theory of cooperation, however, was soon challenged by proponents of the new school of "neo-liberal institutionalism". Like neo-realists, neo-liberal institutionalists assumed that the international system is anarchic and states, as the dominant type of actor in the international system, interact with each other in order to maximize their gains.[14] But, despite this, "neoliberalism draws very different conclusions about the potential for sustained international cooperation."[15] In the course of their work, for example, Robert Keohane and Robert Axelrod argued that states *can* overcome problems of anarchy to achieve the benefits of cooperation through the establishment of international institutions and regimes.[16] Robert Axelrod in particular employed game-theoretic methods of analysis to illustrate the ways in which cooperation can be achieved in the international system. Indeed, a significant amount of literature on cooperation in the international system is derived from systemic and game-theoretic methods of analysis.[17]

However, game-theoretic types of analysis are only a small part of the burgeoning literature on negotiations. They have been sharply criticized for their limitations, and attracted some stigma because of associations with Rand Corporation and Pentagon strategic analysis in the first half of the Cold War (Rebecca Johnson and John Borrie also discuss game-theoretic approaches in their chapters in this volume[18]). Indeed, some of the claims made for game-theory inspired models were far too ambitious, and since the 1970s such approaches have gradually fallen from favour among many political scientists. Nevertheless, game-theoretic approaches were rehabilitated by other disciplines—among them economics, mathematical biology, psychology and new compound disciplines like behavioural economics and neuroeconomics—as new applications were recognized and information technology became more sophisticated, which allowed more extensive use of techniques like agent-based modelling.[19] These techniques help to model the dynamics of social interactions in which actors' behaviour depends in part on the anticipated behaviour of others, making them useful analytical tools for studying cooperation in a wide range of contexts.[20]

The "Prisoner's Dilemma" and other variations of two-person "games" offer a striking model of decision-making dynamics, especially in the field of international security.[21] The Prisoner's Dilemma is "simply an abstract formulation of some very common and very interesting situations in which what is best for each person individually leads to mutual defection, whereas everyone would have been better off with mutual cooperation".[22] As Jack Donnelly noted, "international relations are often marked by insecurity, competition, and conflict *even when there are strong incentives to cooperate.*"[23]

Indeed, part of Axelrod's interest in game-theoretic perspectives, as set out in *The Evolution of Cooperation*, derived from his concerns about understanding international security problems like nuclear arms control. In this sense his work shared certain similarities with the approaches taken by Rand Corporation analysts and American strategic planners throughout the Cold War, beginning with the mathematician John von Neumann.[24] But Axelrod's motivations were different, and he developed these approaches considerably further. In view of this, it is worth further discussing game-theoretic approaches, and their insights and limitations in the arms control and disarmament field.

GAME THEORY PERSPECTIVES AND MULTILATERAL ARMS CONTROL AND DISARMAMENT NEGOTIATIONS

There is no doubt that game-theoretic perspectives can be useful in understanding why cooperation evolves, or fails to evolve, in some arms control and disarmament negotiating processes by the way they characterize the interactive nature of individuals' behaviour. Backed by a wide range of real-world evidence, Axelrod demonstrated that cooperative behaviour can be achieved even in non-cooperative games like the Prisoner's Dilemma if competitors interact repeatedly.[25] Moreover, strategies of reciprocity like "Tit-for-Tat" (first introduced by Anatol Rapoport in a computer tournament organized by Axelrod) are highly effective when non-cooperative games are iterated.[26]

Axelrod argued that "an important way to promote cooperation is to arrange that the same two individuals will meet each other again, be able to recognize each other from the past, and to recall how the other has behaved until now."[27] Enlarging the *shadow of the future*, that is increasing the certainty that there will be subsequent interaction, encourages cooperation among individuals as it makes the "future more important relative to the present."[28] In other words "The more future payoffs are valued relative to current payoffs, the less the incentive to defect today—since the other side is likely to retaliate tomorrow."[29]

However, retaining analytical clarity and usefulness has been a challenge for these approaches when the number of actors being analysed is much larger than the number of actors in the two-person Prisoner's Dilemma or small-scale *n*-person games. It is reasonable to wonder how this characterization of the evolution of cooperation carries over into venues like the Conference on Disarmament (CD). Here, it is possible to think of the potential for emergence of cooperation both at the level of states and, perhaps necessarily, at the level of individual negotiators first. If trust and cooperation are gained through repeated interaction, what effect might diplomatic rotations then have on the outcome of negotiations? Indeed there are indications that short diplomatic rotations may impede progress and continuity in multilateral negotiations. Rebecca Johnson has suggested that:

> As ambassadors and their staff are subject to rotation every 3–5 years, and most foreign ministers work on the principle of diplomats as non-

> specialists, the likelihood of a significant proportion of ineffective representatives being engaged in the multilateral forum is high. There is also a demonstrated risk that effective personnel may be arbitrarily replaced regardless of whether negotiations are at a sensitive juncture.[30]

Problems like these are not impossible to overcome, but they show that characterizing multilateral negotiations in rational terms can be far from easy. Another significant challenge is to reproduce the influence of social dynamics on individual perception and strategy in large groups in these situations. Insights into how collective behaviours or social norms emerge remain elusive, although so-called neuroeconomists like Ernst Fehr and Urs Fischbacher, who are looking at such behaviours in laboratory conditions, may eventually shed more light on this, with potential application to negotiation theory.[31]

Indeed as P. Terrance Hopmann has noted, game-theoretic approaches have been most useful in analysing negotiations that are "highly transparent and mechanistic" or in bilateral or small group negotiations where it is possible to observe all aspects of the negotiation process.[32] He wrote:

> it has proven useful to analyze negotiating reciprocity in a kind of Richardson process model such as the tit-for-tat models developed by Anatol Rapoport and investigated by Robert Axelrod. Such models are most likely to be successful when the negotiation situation conforms to their basic assumptions: namely, that the actors are motivated by instrumental rationality and engage in some sort of formal bargaining process, and the goals and moves may be quantified and subjected to systematic analysis.[33]

But multilateral arms control and disarmament negotiations are tricky endeavours that rarely conform to these basic assumptions. As Robert Putnam has observed:

> Formally speaking, game-theoretic analysis requires that the structure of issues and payoffs be specified in advance. In reality, however, much of what happens in any bargaining situation involves attempts by the players to restructure the game and to alter one another's perceptions of the costs of no-agreement and the benefits of proposed agreements.[34]

Attempts to do so often take place through informal channels of diplomacy or activities. Indeed, in this way the structural context can itself serve to alter

negotiators' perceptions. Also, distinctive "communities of practice" emerge over time that may constrain these perceptions in other ways. Game-theoretic approaches have difficulty accounting for subjective perceptions in policy-making or the fact that, in practice, the psychology of making decisions can be extremely difficult to analyse.

TWO-LEVEL GAMES: AN ALTERNATIVE FRAMEWORK FOR UNDERSTANDING COOPERATION?

Another common assumption in game-theoretic approaches is that states are unitary actors that make decisions only in relation to other states in the international system. As such, no attention is given to the role of domestic considerations in cooperation at the international level.[35] In an attempt to rectify this failure, in the 1980s Putnam offered the "two-level game" approach as an alternative framework for analysis. As Ahmer Tarar described it:

> The two-level game metaphor conceives of international bargaining as a multilevel "game". In addition to the bargaining directly going on between the executives of the countries (level I bargaining), the executives are simultaneously bargaining with domestic groups in their respective countries (level II bargaining), when their ratification is necessary for the agreement to implemented.[36]

However, are two-level games really a better reflection of decision-making at the international level? Peter F. Trumbore wrote that "One of the most compelling aspects of the two-level games approach is that it not only serves to explain the dynamics involved in international negotiations, it also challenges the realist paradigm which treats states as unitary actors, a perspective that continues to loom large in the international relations discipline."[37] As a framework for understanding the dynamics of international negotiations, two-level games provide a more detailed picture of the process than one-level games.

In previous research conducted by the *Disarmament as Humanitarian Action* project, it was noted that examining multilateral negotiations "in terms of the functioning of a community of practice allows the possibility of structural problems arising in—and across—multilateral arms control and disarmament processes for reasons that are not premeditated in political or

diplomatic terms."[38] Similarly, Putnam's two-level games implicitly recognize that the dynamics of a professional group approximating a community of practice can, and do, affect the outcome of negotiations.[39] Asymmetries in diplomatic status within the community, for example, can affect the progress and outcome of a negotiation. Putnam noted that "Higher status negotiators are likely to dispose of more side-payments and more 'good will' at home, and hence foreigners prefer to negotiate with a head of government than with a lower official." He went on to say that diplomats are "acting rationally" and not "merely symbolically, when they refuse to negotiate with a counterpart of inferior rank".[40]

Real-life examples in the arms control and disarmament field confirm this. For instance, Rebecca Johnson noted in her account of the negotiations of the Comprehensive Test Ban Treaty (CTBT):

> The difficulties for some ambassadors of maintaining a continuous presence in negotiations because of other responsibilities may have several negative effects. Day-to-day representation is often put in the hands of junior diplomats who may either err on the side of caution or alternatively act as loose cannons, reluctant to sell positions with which they disagree, while lacking the authority or flexibility to make policy concessions themselves. If other delegations are headed by ambassadors, less senior diplomats representing their governments in meetings are not regarded as having equal authority. This imbalance of power can lead to circular debates and considerable wasting of time.[41]

However, Putnam did not consider that states may deliberately choose to exploit this tactic in a negotiation, that the size and status of a delegation may sometimes be an indication of a state's level of interest and desire for cooperation.

Moreover, Putnam's two-level game framework was built on certain general assumptions that do not always reflect the realities of international decision-making, especially in the field of international security. One premise was that "if an agreement between the executives is finally reached and ratified, it will to some extent reflect the preferences of domestic groups in each country."[42] However, decisions made at the international level are sometimes largely independent of domestic considerations and domestic acceptance is often sought *after* a decision is made between executive authorities.

Putnam also conjectured that the executive can use the prospect of ratification failure to extract concessions from the other side. However, he failed to "ascertain the conditions under which a domestic constraint is or is not a bargaining advantage".[43] Since Putnam first expounded his logic of two-level games in 1988, many academics have attempted to expand and develop his model in order to find these answers.[44] Indeed one advantage of Putnam's original model is that it is amenable to such adaptations.

Nevertheless many academics have considered two-level games more a "metaphor than a full-fledged theory".[45] In part, this is likely because these expanded models become complicated and unwieldy, which curtails their usefulness. The reality is that there are many "games" going on between actors that may have an impact in negotiations; describing and incorporating them is often difficult. And, analytically, it may be hard to consider a negotiation in isolation. This is because negotiating actors, such as a state, are often involved in multilateral negotiations in a variety of international contexts. As a result, a state failing to demonstrate cooperative behaviour in one negotiation may negatively impact their bargaining leverage in decision-making processes on other issues. Moreover, in characterizing executive authorities, there remains wide scope for improving understanding of bureaucratic and organizational factors that are often under-examined in analyses of multilateral decision-making, not least because it is difficult for academics to acquire this information through direct observation.

On a more practical level, Putnam's two-level games approach does not provide many practical suggestions about ways to improve cooperation between arms control and disarmament negotiators. Instead, some of Putnam's observations fuel the idea that diplomacy is a "black art". He noted, for example, that a "smart negotiator" knows that decisions made at one level can affect the other level. Therefore, when the occasion does present itself, "clever players will spot a move on one board that will trigger realignments on other boards, enabling them to achieve otherwise unattainable objectives."[46] Implicit in Putnam's approach is that anticipating an opponent's subsequent move may be as much the product of intuition as a coherent methodical strategy for negotiators.

Two questions that spring to mind, then, are "Who is a smart negotiator?", and "Are the skills of a smart negotiator innate or can they be learned?" But, there are methodological difficulties in reaching firm conclusions about

what makes for a "smart" multilateral negotiator. For example, it is difficult to study the effects of informal diplomacy on cooperation at the international level, especially as these meetings are often confidential and no records usually exist. And, because multilateral negotiations are relatively unusual undertakings from a social perspective, a proper understanding about how the dynamics of negotiations form is still lacking among researchers, as mentioned earlier.

CIVIL SOCIETY ACTIVISM IN ARMS CONTROL AND DISARMAMENT PROCESSES

The literature derived from game-theoretic and two-level game analyses provides only a partial picture of the dynamics of multilateral decision-making. As such, there has not been much attention paid to the roles that civil society practitioners play in international decision-making processes. However, civil society activism in international negotiations was not commonplace when most of the work on cooperation discussed above was produced. Since the end of the Cold War, civil society actors have become more active in many international negotiations and, particularly in the environment and human rights fields, have become more accepted voices.[47] In the arms control and disarmament field, civil society practitioners occupy a more tenuous position, but their roles have sometimes been significant nevertheless.

The literature on civil society in the arms control and disarmament field is comprised largely of individual case studies of various civil society campaigns.[48] Most of these analyses come from civil society practitioners themselves. It is not easy to get a sense of civil society activism in the arms control and disarmament field by just relying on these individual accounts. Indeed, civil society activists play different roles and serve in different capacities in each process, which makes generalizations difficult.

In analysing non-governmental organization (NGO) roles, David Atwood identified in 2002 many shortcomings in the literature on civil society activism, and noted areas for further exploration and research.[49] He noted in particular the "need for greater understanding not only of the history of NGO involvement in particular disarmament issue areas but also of the factors, both in the environment in which NGOs are working and internal to NGOs themselves, which have affected the nature and effectiveness of

their engagement".[50] In his chapter in this volume, which takes his analysis further, he argues that "Anti-personnel landmines mechanisms apart, NGOs simply are not—nor are they likely to become—central players in a formal sense in multilateral disarmament processes, at least in the short run."[51]

There certainly appears much to be done in researching how civil society actors contribute to multilateral processes. For instance, one largely unexplored topic concerns NGO participation on government delegations. At the 2005 Treaty on the Non-Proliferation of Nuclear Weapons (NPT) Review Conference, for example, some NGO representatives were invited by governments to join their delegations as advisers and consultants (as in previous NPT review meetings).[52] In many cases these individuals were prominent academics or members of well-known policy think tanks in their respective countries. This was also the case in other processes such as the 1995 Review Conference of the Convention on Certain Conventional Weapons (CCW): in addition to the International Campaign to Ban Landmines (ICBL) addressing plenary meetings of the CCW review and playing an active role as information providers and lobbyists, some NGO representatives were also part of states' official delegations to the preparatory meetings and review conference sessions.[53] Likewise, in her account of NGO participation in the Mine Ban Convention process, Nicola Short noted that "several governments included NGOs in their delegations: nine in Oslo, eight in Brussels."[54] The same is true of some states in the UN Programme of Action process on small arms and light weapons.

One reason for the lack of research into the influence (or lack thereof) of such NGO roles could be that these representatives have been too few to attract much notice or extensive analytical consideration. It could also be argued that, by serving in their personal capacity, these individuals do not really represent the views of "civil society". Better understanding of the impact these individuals have on decisions made at the multilateral level would be useful especially in comparison with the level of effectiveness of NGO efforts to influence policy-making in other ways.[55]

Anecdotal evidence from the 2005 NPT Review Conference, for instance, seems to suggest that NGO representatives on delegations can have significant influence in opinion-shaping at the multilateral level. In her analysis of the proceedings, for example, Rebecca Johnson pointed out the success of the adviser to the Kyrgyzstan delegation who was "responsible for some useful proposals on controlling and preventing access to [highly

enriched uranium], which were taken up by a number of delegations in a working paper".[56] In contrast, observations on the work of civil society activists on the fringes of the Conference were not as positive. Harald Müller wrote:

> There was no civil society protest against the devaluation of the Treaty conducted by the diplomats. The NGOs performed bravely during their various workshops and seminars, exposed their brochures and pamphlets, reported day by day on the proceedings, cultivated their contacts with their delegates, and held, occasionally, rather boring press conferences, just as if this [Review Conference] were business as usual. Apparently, the shocking, alarming events and the potentially fatal consequences did not come to their attention.[57]

CONCLUSIONS

This brief literature review suggests that academic research provides useful insights into multilateral negotiations in general terms. The bulk of most of the practically relevant literature on civil society in multilateral negotiations, on the other hand, is informed by experience but not much theory—a shortcoming of contemporary research in international relations that has still to be properly remedied. Methodological frameworks for analysis developed to date are clearly not yet a compelling alternative for policy makers. Richard Price has even wondered if the existing academic research on civil society activism, more generally, is of use to practitioners or is destined to be read only by fellow academics. He also questioned whether any of the knowledge generated through scholarship in that field was something practitioners themselves have not already learned through trial and error.[58]

Arguably, academic researchers are not obliged to provide diplomatic negotiators and others with practical advice or recommendations. Certainly, the analyses offered on occasion by practitioners themselves appear to have been more focused on the practical needs of negotiators and civil society activists. But as this chapter and others in this volume highlight, good policy research, backed by broader insights, continue to be needed if progress is to be made in the multilateral arms control and disarmament field.

Notes

1 The author would like to thank David Atwood, John Borrie, Eoghan Murphy and Ashley Thornton for their comments and assistance with this paper.

2 Robert Axelrod, "The Emergence of Cooperation among Egoists", *The American Political Science Review*, vol. 75, no. 2, American Political Science Association, 1981, pp. 306–318; Robert Axelrod, *The Evolution of Cooperation*, Basic Books, 1984; Robert Axelrod and Robert Keohane, "Achieving Cooperation under Anarchy: Strategies and Institutions", *World Politics*, vol. 38, no. 1, Johns Hopkins University Press, 1985, pp. 226–254; Kenneth Oye, "Explaining Cooperation under Anarchy", in Kenneth Oye (ed.), *Cooperation under Anarchy*, Princeton University Press, 1986; Joseph Grieco, "Anarchy and the Limits of Cooperation: A Realist Critique of the Newest Liberal Institutionalism", *International Organization*, vol. 42, no. 3, Cambridge University Press, 1988; Helen Milner, "International Theories of Cooperation among Nations: Strengths and Weaknesses", *World Politics*, vol. 44, no. 3, Johns Hopkins University Press, 1992; See for example Arthur Stein, *Why Nations Cooperate: Circumstances and Choice in International Relations*, Cornell University Press, 1994; Charles Kegley, Jr. (ed.), *Controversies in International Relations Theory: Realism and the Neoliberal Challenge*, St. Martin's Press, 1995; Stephen Majeski and Shane Frics, "Conflict and Cooperation in International Relations", *Journal of Conflict Resolution*, vol. 39, no. 4, Sage Publications, 1995, pp. 622–645; Scott Burchill et al., *Theories of International Relations*, Palgrave, 2001; Thomas Schelling, *The Strategy of Conflict*, Harvard University, 2003; and Steven Brams, *Game Theory and Politics*, Free Press, 1975, rev. ed., 2004.

3 See John Borrie, "Rethinking Multilateral Negotiations: Disarmament as Humanitarian Action" in John Borrie and Vanessa Martin Randin (eds), *Alternative Approaches in Multilateral Decision Making: Disarmament as Humanitarian Action*, UNIDIR, 2005, pp. 7–37.

4 Morgenthau used the phrase "science of politics" as the title for chapter 2 in the second edition of *Politics Among Nations: The Struggle for Power and Peace,* published in 1954 (taken from footnote 7 of John Lewis Gaddis, "International Relations Theory and the End of the Cold War", *International Security,* vol. 17, no. 3, The MIT Press, 1992/93, p. 7).

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6 Martin Griffiths, *Fifty Key Thinkers in International Relations,* Routledge, 1999, p. 36.

7 John Lewis Gaddis, "International Relations Theory and the End of the Cold War", *International Security,* vol. 17, no. 3, The MIT Press, 1992/93, p. 7.

8 Ibid., p. 11.

9 Stanley Hoffmann, "International Relations: the Long Road to Theory", in James Rosenau (ed.), *International Relations and Foreign Policy: A Reader in Research and Theory*, Free Press, 1961, pp. 423–424, as mentioned in John Lewis Gaddis, "International Relations Theory and the End of the Cold War", *International Security,* vol. 17, no. 3, The MIT Press, 1992/93, p. 11.

10 See Scott Burchill, "Realism and Neo-Realism", in Scott Burchill et al., *Theories of International Relations,* Palgrave, 2001, p. 88.

11 Scott Burchill, "Realism and Neo-Realism", in Scott Burchill et al., *Theories of International Relations,* Palgrave, 2001, p. 89. Burchill takes the quotation from Kenneth Waltz, "Realist Thought and Neo-Realist Theory", *Journal of International Affairs,* vol. 44, no. 1, Columbia University, 1990, p. 33.

12 Christian Reus-Smit, "Constructivism", in Scott Burchill et al., *Theories of International Relations,* Palgrave, 2001, pp. 210–211.

13 Ibid., p. 212.

14 But while neo-liberals argue that states cooperate in order to maximize their absolute gains, neo-realists like Joseph Grieco argue that states are also interested in achieving *relative* advantages. Neo-realists believe that the neo-liberal proposition is short-sighted for this reason. See Joseph Grieco, "Anarchy and the Limits of Cooperation: A Realist Critique of the Newest Liberal Institutionalism", *International Organization*, vol. 42, no. 3, Cambridge University Press, 1988, pp. 485–507. See also Helen Milner, "International Theories of Cooperation among Nations: Strengths and Weaknesses", *World Politics,* vol. 44, no. 3, Johns Hopkins University Press, 1992, pp. 466–496.

15 Christian Reus-Smit, "Constructivism", in Scott Burchill et al., *Theories of International Relations,* Palgrave, 2001, p. 211.

16 Robert Axelrod and Robert Keohane, "Achieving Cooperation under Anarchy: Strategies and Institutions", *World Politics,* vol. 38, no. 1, Johns Hopkins University Press, 1985, pp. 226–254.

17 See Helen Milner, "International Theories of Cooperation among Nations: Strengths and Weaknesses", *World Politics,* vol. 44, no. 3, Johns Hopkins University Press, 1992, p. 467.

18 See Rebecca Johnson, "Changing Perceptions and Practice in Multilateral Arms Control Negotiations" and John Borrie, "Cooperation and Defection in the Conference on Disarmament", in this volume.

19 For instance, see Robert Axelrod, *The Complexity of Cooperation*, Princeton University Press, 1997.

20 For example, researchers in Australia have developed a computer program that relies on game theory to produce a fairer outcome when dividing the property of divorcing couples. Instead of the traditional approach of dividing a couple's property in half, the system, called *Family Winner*, guides the couple through a series of trade-offs and compensation strategies. See "March of the Robolawyers" in *The Economist,* 9 March 2006.

21 For a brief description of the Prisoner's Dilemma game see John Borrie, "Cooperation and Defection in the Conference on Disarmament", in this volume.

22 Robert Axelrod, *The Evolution of Cooperation,* Basic Books, 1984, p. 9.

23 Jack Donnelly, *Realism and International Relations,* Cambridge University Press, 2000, p. 21. The italicized words are Donnelly's emphasis.

24 William Poundstone, *Prisoner's Dilemma: John von Neumann, Game Theory and the Puzzle of the Bomb*, Anchor Books, 1992.

25 Robert Axelrod, *The Evolution of Cooperation,* Basic Books, 1984, p. 126.

26 An agent using the "Tit-for-Tat" strategy will initially cooperate then respond in kind to an opponent's last action. This means if the opponent previously was cooperative, the agent is cooperative. If not, the agent is not. However, Martin Novak's and Karl Sigmund's "Pavlov" strategy is one which many game theorists believe outperforms Tit-for-Tat. The Pavlov strategy dictates that "you should cooperate if and only if in the previous round you and your co-player have done the same." See Martin Nowak and Karl Sigmund, "A Strategy of Win-Stay, Lose-Shift that Outperforms Tit-for-Tat in Prisoner's Dilemma Game", *Nature,* 1993, vol. 364, no. 6432, pp. 56–58. In 2004 the Tit-for-Tat strategy was beaten in a computer tournament organized by the University of Southampton (for more information see <www.wired.com/news/culture/0,65317-0.html>). However there is still widespread uncertainty concerning the

applicability of these new strategies to real-life situations and more specifically to matters concerning international security.

27 Robert Axelrod, *The Evolution of Cooperation,* Basic Books, 1984, p. 125.

28 Ibid., p. 126.

29 Robert Axelrod and Robert Keohane, "Achieving Cooperation under Anarchy: Strategies and Institutions", *World Politics,* vol. 38, no. 1, Johns Hopkins University Press, 1985, p. 232.

30 Rebecca Johnson, "Nuclear Arms Control through Multilateral Negotiations", in Nancy Gallagher (ed.), *Arms Control: New Approaches to Theory and Practice,* Frank Cass, 1998, p. 95. Admittedly this is not a problem only seen in arms control and disarmament. During the negotiations of the Migrant Workers Convention, for example, there were many changes in diplomatic personnel as well. Previous research has shown that such interruptions can be alleviated by keeping the chairperson of negotiations constant. But diplomatic rotation also compounds difficulties in forums like the CD where the chairpersons rotate on a frequent basis. See Vanessa Martin Randin and John Borrie, "A Comparison between Arms Control and Other Multilateral Negotiation Processes", in John Borrie and Vanessa Martin Randin (eds), *Alternative Approaches in Multilateral Decision Making: Disarmament as Humanitarian Action*, UNIDIR, 2005, pp. 67–129.

31 See Ernst Fehr and Urs Fischbacher, "Social Norms and Human Cooperation", *Trends in Cognitive Sciences*, vol. 8, no. 4, Elsevier, 2004, pp. 185–189.

32 P. Terrence Hopmann, "Negotiating Data: Reflections on the Qualitative and Quantitative Analysis of Negotiation Processes", *International Negotiation,* vol. 7, no. 1, Martinus Nijhoff, 2002, p. 74.

33 Ibid.

34 Robert Putnam, "Diplomacy and Domestic Politics: The Logic of Two Level Games", *International Organization,* vol. 42, no. 3, Cambridge University Press, 1988, p. 454. See also Robert Axelrod and Robert Keohane, "Achieving Cooperation under Anarchy: Strategies and Institutions", *World Politics,* vol. 38, no. 1, Johns Hopkins University Press, 1985, pp. 226–254.

35 Helen Milner, "International Theories of Cooperation among Nations: Strengths and Weaknesses", *World Politics,* vol. 44, no. 3, Johns Hopkins University Press, 1992, p. 467.

36 Ahmer Tarar, "Constituencies and Preferences in International Bargaining", *Journal of Conflict Resolution,* vol. 49, no. 3, Sage Publications, 2005, p. 383.

37 Peter Trumbore, "Public Opinion as a Domestic Constraint in International Negotiations: Two-Level Games in the Anglo-Irish Peace Process", *International Studies Quarterly*, vol. 42, no. 3, Blackwell Publishing, 1998, p. 545.

38 John Borrie, "Rethinking Multilateral Negotiations: Disarmament as Humanitarian Action" in John Borrie and Vanessa Martin Randin (eds), *Alternative Approaches in Multilateral Decision Making: Disarmament as Humanitarian Action*, UNIDIR, 2005, p. 16.

39 A "community of practice" is taken to mean "a group of people who over a period of time share in some set of social practices geared toward some common social purpose". See John Borrie, "Rethinking Multilateral Negotiations: Disarmament as Humanitarian Action" in John Borrie and Vanessa Martin Randin (eds), *Alternative Approaches in Multilateral Decision Making: Disarmament as Humanitarian Action*, UNIDIR, 2005, p. 15.

40 Robert Putnam, "Diplomacy and Domestic Politics: The Logic of Two Level Games", *International Organization,* vol. 42, no. 3, Cambridge University Press, 1988, p. 452.

41 Rebecca Johnson, "Nuclear Arms Control through Multilateral Negotiations" in Nancy Gallagher (ed.), *Arms Control: New Approaches to Theory and Practice,* Frank Cass, 1998, p. 96.

42 Ahmer Tarar, "Constituencies and Preferences in International Bargaining", *Journal of Conflict Resolution,* vol. 49, no. 3, Sage Publications, 2005, p. 383.

43 Ibid., p. 384.

44 Ibid.

45 See for example Peter Trumbore, "Public Opinion as a Domestic Constraint in International Negotiations: Two-Level Games in the Anglo-Irish Peace Process", *International Studies Quarterly*, vol. 42, no. 3, Blackwell Publishing, 1998, p. 545.

46 Robert Putnam, "Diplomacy and Domestic Politics: The Logic of Two Level Games", *International Organization,* vol. 42, no. 3, Cambridge University Press, 1988, p. 434.

47 See Constanza Tabbush, *Civil Society in United Nations Conferences: A Literature Review,* UNRISD, Civil Society and Social Movements Programme Paper Number 17, 2005.

48 See for example, Kenneth Rutherford, "A Theoretical Examination of Disarming States: NGOs and Anti-Personnel Landmines", *International Politics,* vol. 37, no. 4, Palgrave, 2000, pp. 457–478; Ken Rutherford, "The Landmine Ban and NGOs: The Role of Communications Technologies", *Transnational Associations,* no. 2, 2000. pp. 60–73; Rebecca Johnson, "Advocates and Activists: Conflicting Approaches on Nonproliferation and the Test Ban Treaty", in Ann Florini (ed.), *The Third Force: The Rise of Transnational Civil Society,* Carnegie Endowment for International Peace, 2000, p. 49–81; Nicola Short, "The Role of NGOs in the Ottawa Process to Ban Landmines", *International Negotiation,* vol. 4, no. 3, Brill, 1999, pp. 481–500; Daniel Feakes, "Global Civil Society and Biological and Chemical Weapons" in Mary Kaldor, Helmut Anheier and Marlies Glasius (eds), *Global Civil Society Yearbook 2003,* Oxford University Press, 2003, pp. 87–117; Motoko Mekata, "Building Partnerships toward a Common Goal: Experiences of the International Campaign to Ban Landmines", in Ann Florini (ed.), *The Third Force: The Rise of Transnational Civil Society,* Carnegie Endowment for International Peace, 2000, pp. 143–176; Richard Price, "Reversing the Gun Sights: Transnational Civil Society Target Land Mines", *International Organization,* vol. 52, no. 3, Cambridge University Press, 1998, pp. 613–644; John Borrie and Vanessa Martin Randin (eds), *Disarmament as Humanitarian Action: From Perspective to Practice*, UNIDIR, 2006; Don Hubert, *The Landmine Ban: A Case Study in Humanitarian Advocacy,* Watson Institute for International Studies, Occasional Paper No. 42, 2000; and Maxwell Cameron, Brian Tomlin and Robert Lawson (eds), *To Walk Without Fear: The Global Movement to Ban Landmines*, Oxford University Press, 1998.

49 David Atwood, "NGOs in Disarmament: Views from the Coalface", *Disarmament Forum,* vol. 2, no. 1, UNIDIR, 2002, pp. 5–14.

50 Ibid., p. 10.

51 See David Atwood, "NGOs and Multilateral Disarmament Diplomacy: Limits and Possibilities" in this volume.

52 These states included Belgium, Germany, Kyrgyzstan, New Zealand, the Netherlands and the United Kingdom.

53 Richard Price, "Reversing the Gun Sights: Transnational Civil Society Target Land Mines", *International Organization,* vol. 52, no. 3, Cambridge University Press, 1998, p. 624.

54 Nicola Short, "The Role of NGOs in the Ottawa Process to Ban Landmines", *International Negotiation,* vol. 4, no. 3, Brill, 1999, p. 487.

55 See, for instance, Richard Price, "Transnational Civil Society and Advocacy in World Politics", *World Politics,* vol. 55, no. 4, Johns Hopkins University Press, 2003, pp. 579–606.

56 Rebecca Johnson, "Politics and Protection: Why the 2005 NPT Review Conference Failed", *Disarmament Diplomacy,* no. 80, Acronym Institute, 2005.

57 Harald Müller, *The 2005 NPT Review Conference: Reasons and Consequences of Failure and Options for Repair,* The Weapons of Mass Destruction Commission, paper no. 31, 2005, p. 14.

58 Richard Price, "Transnational Civil Society and Advocacy in World Politics", *World Politics,* vol. 55, no. 4, Johns Hopkins University Press, 2003, p. 605.

CHAPTER 3

NGOS AND MULTILATERAL DISARMAMENT DIPLOMACY: LIMITS AND POSSIBILITIES

David Atwood

SUMMARY

This chapter examines the proposition that the greater engagement of civil society actors in multilateral disarmament processes can be a practical means to making the latter more effective by "being in the middle by being on the edge"—shaping and facilitating parallel processes. While the multilateral system is not working well for many reasons, for certain tasks related to human security it remains the only alternative. The conundrum for civil society actors is that, to get things done, they must accept the multilateral system, which itself is often a cause of ineffectiveness and in which—as concerns international security—they are usually marginalized.

INTRODUCTION

In the introductory essay to the first volume of this series,[1] John Borrie laid out some of the basic premises on which the *Disarmament as Humanitarian Action* (DHA) Project is based. Among these:

- that the usual multilateral arms control and disarmament mechanisms are failing to effectively meet today's collective security challenges and demands;
- that human security and humanitarian approaches can have utility in assisting practitioners in multilateral arms control and disarmament negotiations; and
- that the greater engagement of civil society actors can be a "practical means to making multilateral processes more effective,

especially if they lead to questioning features that have lost their purpose and utility".[2]

This essay will explore the last of these points, but with the first two very much as orientations for the discussion. My intention here is to be exploratory and a bit provocative. My aim is to illuminate factors which limit the potential of civil society actors—hereafter non-governmental organizations—including some which are self-limiting, and those which can be seen as actual or potential directions for increasing their contribution to making multilateral processes more effective. In the essay, I seek to build on an earlier piece on a similar topic, published in 2002.[3] My observations laid out here have their own limitations in that they are based on impressions gathered largely through the prism of Geneva as a centre of multilateral deliberation on disarmament and human security concerns, an important—but decidedly partial—perspective on the world. They reflect my own experience as an NGO "practitioner" in this setting over the last 11 years.

THE STATE SYSTEM AND THE LIMITS OF INCLUSION

The series of premises outlined above, while providing a useful framework for discussion, can lead us into a kind of "the king is dead, long live the king" cul-de-sac, if we are not careful. While the multilateral system is not working for many reasons, for certain tasks this approach is the only alternative. We believe that we can improve the system's capacity to successfully deal with such tasks by broadening both the way in which work is undertaken and the range of actors involved. However, in order to do this, we must first accept the basic structure of the system, which at once defines it and is part of the cause of its ineffectiveness.

The conundrum exposed is that there are certain collective security challenges facing humanity which only correspondingly collective mechanisms (such as the negotiation of legally binding multilateral treaty instruments or other arrangements, their implementation and their review) and measures of global governance can solve. However, although we may or may not agree on what the causes of the ineffectiveness of current mechanisms are or on what kinds of things might be done to reduce this ineffectiveness, broadly we must accept the system in order to get there: we can have more or less effective multilateralism but that "more or less" is entirely dependent on working via the basic unit in the system, the state. If,

as we believe, NGOs have something to contribute to helping us out of this situation, they too are caught within it—at least when seeking to act on the system as it currently exists.

This is something of a caricature, of course. One of the features of our globalized world is that the state must compete, and learn to work, with a range of actors and that, as the concept of "security" becomes increasingly defined beyond simple notions of national security, there are many ways to work which do not require multilaterally negotiated agreements. Nevertheless, once the focus turns to weapons and the threats they pose, we find it necessary to turn at some point to the very system of states which is proving itself so inadequate. The enterprise becomes already one of "reform", simply because there appears to be no alternative available.

This is a state of affairs Amitai Etzioni commented on in looking at the capabilities and limits of "transnational communitarian bodies" (TCBs) in contributing to the development of greater transnational governing capacity to cope with rising transnational problems.[4] Etzioni described TCBs as being "those groups that have a set of shared beliefs and bonds among their leaders and their staff, as well as some of their members across national borders."[5] In this chapter, however, I shall use the term "non-governmental organizations" (NGOs). The many terms that are used to describe the phenomenon of transnational non-governmental activity—such as transnational social movements, civil society organizations, international non-governmental organizations—can produce endless definitional and analytical debate—which is useful, but well beyond the scope of this article. The point here, regardless of the term used, is the paradox that Etzioni observed:

> A critical assessment of TCBs suggests that although they do help deal with transnational problems, they often draw on nation-states and intergovernmental organizations to do so. TCBs often seek to activate the state where it is neglectful, redirect its efforts, and monitor its work, rather than carry out the tasks themselves. This requires that there be states that can act effectively, which is precisely the problem. Given that these states are already unable to cope with the myriad problems that they face, leaning on them is like hitching one's wagon to a horse that is already overworked.[6]

The above line of thought is a fairly obvious one. My point in making it here is to show that, where greater international governance is perceived to be

required in relation to security related concerns, NGOs find themselves constrained to a larger degree than perhaps in other global issue areas by the narrow parameters of the very system that they feel needs to change. They are dependent in their actions, to a large degree, on the limited space they are accorded by the state system when they work on these issues. This dependency extends even to major reliance on government funding for the work they are able to do.

In the early, heady days of the life of the Anti-Personnel Mine Ban Convention, as new forms of NGO/government/UN agency partnership emerged to focus on the tasks of implementing the Convention, I was among those who felt that the bastions of traditional disarmament processes could hardly fail to be eroded by these new ways of working. With all actors seemingly sitting on the same side of the table with the problem to be solved on the other, how, I asked myself, could other multilateral settings fail to be affected by such obviously useful dynamics? How could many of the same governmental individuals taking part in the focused, constructive atmosphere of "mine action" initiatives go back and seemingly operate comfortably in other "unreformed" settings?

And yet, this is exactly what we have seen happen. Instead of the Mine Ban Convention experiment paving the way for new forms of doing business, it has been very much business as usual since 1997 in nearly all other settings in which multilateral diplomacy takes place. This has occurred despite a great deal of rhetoric about the importance of NGOs and some modest concessions to greater scope for NGO engagement. The Conference on Disarmament, the First Committee of the General Assembly, various treaty Review Conferences, and even "expert groups" established to explore the needs and the feasibility of negotiating new international instruments, have proven to be remarkably impervious to change in this respect. If anything, the example of "Ottawa" has been seen by some governments as something to prevent from ever happening again, rather than as an example of ways in which the international system might seek to work towards solutions to other security problems. While preaching the need for revolution with regard to issues of collective security, at the level of multilateral diplomacy NGOs find themselves settling for working within the narrow boundaries within which they are permitted to operate and urging the broken system to fix itself.[7]

This is, of course, only part of the picture. NGOs play many key roles in disarmament affairs beyond the multilateral diplomacy level. But the main purpose here is to try to show in what ways, within the narrow parameters allowed, NGOs can contribute to making multilateral processes more effective and what factors inhibit that contribution.

WHAT DOES "ACCESS" MEAN AND WHAT DIFFERENCE DOES IT MAKE?

In looking at how NGOs can make their contribution to multilateral processes, one of the assumptions often made by NGOs is that effectiveness in such settings can only be achieved if somehow they are given a formal role in the deliberative processes. But is this true? Because of the mine ban process, our standard for judging this sets a bar way above what has been achieved elsewhere. This experience tells us that in helping to reframe the landmine issue from a military one to a humanitarian one, and by including a range of types of NGOs beyond disarmament NGOs, NGOs helped to create a situation in which they were able to move the traditional boundaries to NGO involvement and hence to play a far more profound role than had ever been the case before. That shift has continued in the ways in which they have worked within the mechanisms developed for the implementation of the Mine Ban Convention.

But there is very little evidence that these "lessons" of the mine ban experience have had much impact elsewhere. The more recent Convention on Certain Conventional Weapons (CCW) international process to deal with the problems created by explosive remnants of war (ERW) resulting in Protocol V continues its deliberations on mines other than anti-personnel mines, ERW and what to do about cluster munitions. For many of the same reasons that NGOs are understood to be central in the anti-personnel mine process—because of their expertise, their broad humanitarian basis, their field experience, their ability to deliver programmes in the field—the CCW process has, in fact, replicated many of the same forms of engagement by non-governmental organizations. But even with this degree of access, the results have not been notably successful. What made the mine ban process unique was its willingness to break what have become the traditional negotiating patterns in multilateral disarmament diplomacy, which are dominated by the consensus "rule". Current CCW negotiations, constrained as they are by that traditional system, have not been notably

changed by including NGOs more fully. If anything, it could be argued that NGOs, while understandably feeling that it is better to be inside than out, have allowed themselves to be co-opted by the process. If being "in" means playing by the old rules, how then can being "in" be seen as essential to making a difference?[8]

Evidence seems to show that the more the weapon type being addressed is defined in traditional national security terms, the less actual formal political space will be accorded to NGOs at the multilateral level. Thus, beyond anti-personnel mines and the concerns of the CCW, the next type along the scale would seem to be small arms, if this logic has validity. Here, NGOs have made a huge contribution to the ways in which this issue is being understood. But, so far at least, they have succeeded hardly at all in achieving "access" to the mechanisms which define the way in which the issue is being tackled globally. So far, the reframing of the issue has not been profound enough at this level to allow Ottawa-style engagement by NGOs to even come close to happening. This is most recently illustrated by the ill-fated 2006 small arms Review Conference where, despite the protestations by many states that NGOs were the real experts on the issue of small arms and light weapons and needed to be included, virtually no concession beyond the traditional ones of having an NGO speech segment and according accreditation for NGOs to be present in New York for the Conference was made. NGOs were once again shut out of the very elements of the deliberations where that expertise could have been brought to bear usefully. It is at least arguable that the results of this Review Conference might have been more productive had a more inclusive approach to NGOs been adopted at least as far back as the first Biennial Meeting of States in 2003.

At the far end of our scale of access, by this traditional definition, must be the Conference on Disarmament. That it can still be the case in 2006 that consensus cannot be achieved on allowing NGOs to address the Conference directly at a time when the CD itself cannot agree a work programme would be laughable if it were not such a sad reflection of the lack of capacity of that key institution to grasp what could be in its own interests as an institution—to say nothing of how NGO contributions could actually assist the Conference in reaching some of its own alleged goals. To argue that it is the consensus process that perpetuates this situation and that most governments participating in the CD wish to see greater formal

involvement by NGOs is only a further reflection of the failings of what passes for multilateral disarmament diplomacy today.

That this is the current reality, however, does not actually tell us very much. While NGOs struggle for forms of access which would allow them more space to operate within the deliberative processes of multilateral disarmament mechanisms, and while symbolic gestures at inclusion probably have some value, it would seem that we must look elsewhere, given the constraints of the present system, if we are to see the actual or potential contribution of NGOs to making multilateral processes more effective. For the time being, the inclusive process which characterizes the current role of NGOs in furthering global deliberations and action on the problems of anti-personnel mines is likely to remain an exception.

PROMISING AVENUES FOR NGO ENGAGEMENT IN MULTILATERAL DIPLOMACY SETTINGS

While access in the above sense remains minimal, NGOs nevertheless play many roles in advancing disarmament-related issues, not only at the international level, but regionally, nationally, and locally. These roles include the important functions of generating public awareness; building constituencies at the national and transnational levels; reframing issues for more appropriate types of engagement by actors, both governmental and non-governmental; advancing the development of new norms for national behaviour; conducting advocacy work necessary to build political commitment; providing research and expert policy advice; monitoring and evaluating actor behaviour; facilitating dialogue; and actually implementing some dimensions of policy decisions, such as mine action programmes.[9] There is a growing literature describing how NGOs or transnational civil society organizations seek to play such roles across a range of global issues and how such factors as geographical distribution, funding, accountability and legitimacy can be understood to shape the influence of NGOs. This literature brings necessary critical analysis to this important feature of transnational relations.[10] More work is needed to incorporate more fully disarmament affairs into this literature. This is beyond the scope of this article, but the DHA project as a whole is making an important contribution to this need. What I do wish to do here, however, is to highlight two promising avenues for engagement in support of the logic of the three premises outlined above, directions which represent a healthier prospect

than simply propping up the current orthodoxy in multilateral diplomacy that is increasingly being exposed as limited or actively unhelpful.

"Being in the middle by being at the edge": shaping and facilitating parallel processes

This rather ironic phrase—"being in the middle by being at the edge"—was coined to describe dimensions of "third-party" engagement in facilitating conflict transformation and settlement.[11] What this means in practice is described briefly by Diana Francis:

> The informal nature of the processes and the absence of political profile or affiliation on the part of the mediators, *their political powerlessness* [emphasis added], are what fits them for their task, rendering them non-threatening and enabling them to be trusted by the different parties as having no axe to grind or to wield.[12]

Anti-personnel landmines mechanisms apart, NGOs simply are not—nor are they likely to become—central players in a formal sense in multilateral disarmament processes, at least in the short run. But this notion of third-party engagement in conflict prevention work gives a different sense of "being in the middle" which can be helpful to us to understand NGO contributions to progress in the multilateral system.

Traditionally, NGOs are seen as advocates of different desired disarmament or arms control outcomes. Moreover, NGOs' positioning vis-à-vis governments is correctly described as adversarial in many cases. NGOs' "power" comes from the public pressure they can marshal and bring to bear on decision makers. This remains an important dimension of NGO work. But, as noted above, at the multilateral level such power remains peripheral. NGOs, even those with mass memberships, may turn up in multilateral settings, may seek to bring pressure to bear on multilateral decision makers, and may be able to direct large media attention to the failures of the processes (although, in fact, we see very little of this). But, because they are not engaged as formal interlocutors in the processes themselves, their power in this sense remains largely elsewhere, principally at the national level. At the multilateral level, NGOs must remain "at the edge".

So how can we understand this "in the middle" role? NGOs can be in the middle in this sense by making use of their "powerlessness", by establishing their reliability and trust-worthiness as partners to those governments (and agencies) also seeking genuine improvement in the multilateral processes or as facilitators of dialogue processes which add parallel means for the system to move forward. While there are genuine differences in this "middle role" of NGOs in multilateral processes and that exercised by individuals or organizations in conflict mediation, in practice the behaviour is quite similar. An alternative form of power is accorded to such players in settings where accommodation and progress by the parties themselves has become difficult or impossible.

This role—at the opposite end of the activity spectrum from advocacy or campaigning—can be seen to be no less important. It is also a role that has gone largely unrecognized, under-analysed and underdeveloped. By its very nature, it will be an unpublicized role because it is in its very "invisibility" that it has strength. The effective mediator does not seek attention nor claim the victory when actions are successful. It is not a neutral role; it is one which is on the side of successful progress towards effective results rather than being focused on particular desired issue outcomes. The NGOs involved in this style of work are likely, but not necessarily, to be quite different ones from advocacy organizations.

Let me illustrate this line of argument with some brief examples of how NGO action of this sort can supplement, support and, in some cases, partially substitute for formal multilateral decision-making processes. These examples are drawn largely from our own experience at the Quaker United Nations Office (QUNO) in Geneva. I highlight them not because I believe these are any more important than similar actions undertaken by others but simply because I am closer to them and have seen them at work first hand.

Facilitating key-actor dialogue in support of multilateral negotiations. During the years of negotiation towards a Chemical Weapons Convention, QUNO in Geneva and the regional office of the American Friends Service Committee in Jordan facilitated a series of off-the-record seminars with senior leaders from Middle East countries. Their purpose was to promote dialogue and understanding by the states in that region of the world concerning their mutual interest in achieving a strong Convention. In this initiative it was clearly the "powerlessness" of the Quakers and trust in them as genuine "honest brokers" that made these exchanges possible and

contributed an important piece to the ultimately successful outcome of the Chemical Weapons Convention negotiations. A key factor in this was that participants knew that the off-the-record nature of the meetings would be respected and they could speak frankly and openly. This is often a critical feature of any successful mediation process, and it appears also to be true in third-party initiatives in the disarmament area. Hence, this important work undertaken by Quakers has not been written about in any detail to this day and the anonymity and interventions of the participants continue to be protected. An important feature of such processes is that the participants are able to gain a better understanding of the positions of those with different views, of what is happening from inside the policy units of their opposite numbers, and also in the knowledge that signals shared and new understandings gained in the formal and informal parts of such meetings will be shared with capitals.

A slightly different example of this kind of contribution NGOs can make can be seen in QUNO's work in the Anti-Personnel Mine Ban Convention process. At various stages in this process—both before and after the Mine Ban Convention was achieved—QUNO sought to facilitate joint action by "like-minded" government and non-governmental actors through off-the-record dialogue opportunities. Within such a process an important feature can be the invention or furtherance of new multilateral ways of working, as has so much characterized the Mine Ban processes up to today.

Working in parallel with governments in promoting multilateral attention to key issues. The "Biting the Bullet" partnership organizations (Saferworld, International Alert, and the University of Bradford) have worked in recent years in tandem with the British government to move the issue of the development of conventional weapons transfer guidelines up the international agenda. While the United Kingdom has sought to build support among a range of governments for this through its "transfer control initiative" activities, Biting the Bullet partners have run a series of parallel processes (international and regional) with governments and NGOs to supplement and support this direction. This has been what might be called a "pull" process, while the "Control Arms" campaign, driven by Oxfam, Amnesty International and the International Action Network on Small Arms, holding up an eventual Arms Trade Treaty based in already agreed principles of international law as the eventual goal, has provided the equally important "push" factor. This demonstrates how this "third-party" role must be seen to be working along side many other types of initiatives by NGOs.

The result of these "push" and "pull" dynamics has meant that the whole issue of the requirement of globally agreed rules of behaviour with regard to arms transfers has advanced much farther than many would have predicted at the time of the 2001 Programme of Action, even if this progress is far less than many had hoped.

Non-formal complements to official multilateral deliberative spaces. NGOs have long played a role alongside official processes in offering space for engagement by official negotiators and other key actors to discern and discuss possible ways forward and explore the possibilities of accommodation. For example, the Pugwash Conferences on Science and World Affairs, awarded the Nobel Prize for Peace in 1995, have for many years not only sought to bring real expertise to bear on key security areas where more concerted joint action appears required, but have also been spaces in which government officials have been encouraged to participate across major divisions. These Conferences were an especially important space during the years of the Cold War, when dialogue in so many other ways was blocked. What this illustrates is that NGOs can often provide environments for engagement between governments that the latter have difficulty in achieving by themselves.

In the multilateral disarmament setting of Geneva, the work of the Geneva Forum, a partnership arrangement by an NGO (QUNO), a UN body (the United Nations Institute for Disarmament Research), and a university research programme (the Programme for Strategic and International Security Studies of the Graduate Institute of International Studies) demonstrates similarly how non-formal processes can be seen as significant adjuncts to official mechanisms, particularly when those mechanisms are stalled or dysfunctional. Over the years of its work in Geneva, the Geneva Forum has added to its original role of providing seminars for the expansion of awareness and understanding around relevant topic areas to being seen by key actors as being able to provide essential environments for dialogue, encounter and discernment. In addition to a central small arms focus, this has included dialogue promotion work on biological weapons and so-called "non-lethal" weapons developments. The work of the "Geneva Process", an ongoing mechanism of governments, international agencies, and NGOs on the implementation of the 2001 UN Programme of Action on small arms, coordinated by the Geneva Forum, has, in effect, put in place a non-formal multilateral "institution" where none seemed possible. This has contributed not only to there being vital regular discussion at the

multilateral level on issues related to small arms (there being no formal mechanism to do so), but also to consolidating Geneva as a key generator of energy around small arms issues, providing a contrast to New York-based processes.[13] In a variety of ways, the Geneva Forum is clearly demonstrating the potential of "being in the middle by being at the edge" at the multilateral disarmament level.

This particular dimension of the contribution of NGOs to multilateral disarmament processes has gone largely unexamined, in part because, as noted, it is in the under-played and in some cases invisible nature of this work that that contribution is best made. It is not a role that has gone unappreciated by governments, however, which have increasingly demonstrated that they recognize the value of this role by means of their partnerships with NGOs, their important financial contributions to this kind of work, and their active participation in such processes. This role is being played even while the formal dimensions of access for NGOs in disarmament affairs remain highly constrained compared to many other transnational issue settings. Further analysis is clearly needed to fully lay out the various dimensions and possibilities of this role and measure the real impact of such activities. But it suggests one important refinement of the meaning of "the greater engagement of civil society actors" as contributors to making multilateral processes more effective.

Approaches to realizing synergies in language and action by NGOs on human security and humanitarian approaches to multilateral arms control and disarmament

That NGOs have been key actors in helping to broaden the ways in which governments understand the humanitarian impact and the costs to different dimensions of human security of a range of weapons types is without doubt. That this has had some influence on how governments approach multilateral arms control and disarmament also seems incontestable. This can be seen most visibly in work on anti-personnel mines, explosive remnants of war, cluster munitions, and small arms. While so-called weapons of mass destruction—chemical, biological, and nuclear—if actually used, would have profound humanitarian impact, few in-roads have actually been made so far into the approaches to the management and elimination of these weapons from other than traditional national security points of view. Partly as a result of post-11 September 2001 "terrorism" concerns, there are new dimensions to understanding the possible effects

of the misuse of such weapons both by states and non-state armed groups. So far at least, however, these concerns have had very little impact on the formal ways in which states address such issues.

Beyond the issues noted above, to which NGOs appear to have most successfully been able to bring human security or humanitarian perspectives to bear, it is in the domain of preventing poisoning and deliberate spreading of disease (due to growing potential for the hostile misuse of advances in the life sciences) that would seem to offer the most promising next "frontier" areas for broader human security and humanitarian approaches to be brought to bear. Existing norms against biological and chemical weapons would be strengthened by greater buy-in and involvement by scientists, physicians and elements of civil society in view of the diffusion of technology and the superficial attractiveness to certain militaries of so-called non-lethal weapons such as biochemical incapacitating agents. To some extent this is happening.[14]

Nevertheless—and quite apart from the formal boundaries in multilateral disarmament settings which constrain NGO engagement—there appear to be a number of features related to the nature and behaviour of NGOs themselves that serve as "self-limiting" factors to more effective engagement by NGOs. Greater NGO willingness to address some of these would, I submit, enhance the contribution of NGOs to making multilateral processes more effective. Here I would like to single out a number of such self-limiting features and suggest some possible ways as to how they might be overcome or reduced. If these could be achieved, the contribution of NGOs to broadening the discourse on arms control and disarmament issues would be enhanced.

In the article from 2002 cited earlier, I made the following observations:

- "While there are NGOs which work across a number of global issue areas or across a range of arms control and disarmament issues, there tends to be a high degree of specialization among NGOs around one [weapon type] or cluster of issues related to a [weapon type] like nuclear weapons. What this means is that NGOs have developed strategies and approaches to those particular areas, but there is little cross-fertilization with NGOs working on other areas."

- "[A]nother dimension to this 'clumping' of NGOs around particular weapons or security issue areas is that NGOs are spread unevenly across these areas in terms of numbers, types and north–south distribution."
- "Another obvious factor in this world of disarmament NGOs is that they, like NGOs involved in the whole range of global issue concerns, will often differ among themselves not only on strategy in relation to a particular weapons policy direction, but also even on the desirability of a particular direction."[15]

Four years on, these generalizations can be seen largely to still hold. To some extent, particularly in the case of the last one, differences are inevitable and typical of the nature of what we call civil society. Nevertheless, at the risk of further compounding inaccuracies which may be contained in these generalizations, a number of inter-related dimensions can be pointed out which seem to characterize aspects of current NGO behaviour, even among those NGOs which claim to be approaching disarmament from a human security or humanitarian perspective.

- **Limits to learning.** Because NGOs tend to specialize around particular weapons issue areas, they tend either not to be aware of—or not to seek out—what lessons may be accumulating in other areas that could have some applicability in their own area of specialization.
- **Reinventing the wheel.** The failure to adequately examine and learn from the experience in other fields tends to lead to the reinvention of approaches and strategies which could be have been developed and adapted from other fields. This has certainly been the case, I would argue, with regard to the evolution of small arms action and others, such as Rosy Cave, have observed this is also the case in civil society work on explosive remnants of war and cluster munitions.[16]
- **Failure to collaborate across issue areas.** The focused nature of NGO work may lead to the missing of obvious opportunities for collaboration for joint action with those working in other areas. The most obvious example here concerns the two issue areas with the closest natural set of possible alliances from a humanitarian or human security standpoint—anti-personnel mines and small arms—where the two principal NGO communities, the International Campaign to Ban Landmines and the International

Action Network on Small Arms, have spent much of the last eight years, from this observer's perspective, practically going out of their way to avoid exploring chances for collaborative learning and joint action.

- **Missing possible synergies to be exploited by joint action.** There are often issues that touch more than one field of action—for example, approaches to assistance to victims of the use of a range of weapons—which receive sub-optimal attention because separate action on different weapon types fails to exploit possible synergies.
- **Orthodox thinking.** The perceived need to protect standards achieved and to see them fully implemented—for example, the provisions of the Mine Ban Convention—may blind advocates to allied routes for action which, rather than being threats to the standard, may offer ways for greater inclusiveness.

To the extent that these observations have validity, clearly there will be many different causal factors. These deserve greater exploration than I have given them. I put them forward here primarily as illustrations of how, at the multilateral level, NGOs may be limiting their own effectiveness, even within the limited spaces within which they can operate.

How might this be reversed? A number of directions suggest themselves:

Develop a common humanitarian vocabulary for action. NGO action on disarmament at the multilateral level is fragmented by clusters of NGOs working on different issues. This mirrors largely the framing established by governments. To some extent this is efficient in that expertise and action can be targeted. However, the overall effectiveness of NGOs would be enhanced if a common vocabulary for action could be developed. If NGOs working on landmines or cluster munitions and those working on biological weapons or nuclear weapons concerns could find unifying language based in international humanitarian law and other human security principles which they all used in similar ways, this could make it easier for natural alliances to develop, ones which might otherwise remain hidden. It would also make it less easy to divide the humanitarian action community.

Build a common humanitarian context from which to work. Developing a common vocabulary is only part of coming to understand how one's own issue space is related to others. There is a need for NGOs to learn to

understand how the collection of weapons-related issues fit together, with each cluster of issue-focused NGOs operating with greater awareness of how their arena of action is linked to others (strategically, politically, ethically and temporally). This is not an argument for everybody to do everything; it *is* an argument, however, for NGO action to be taken self-consciously in relation to that of others working on other issues. What this would do, for example, would be to create a situation in which areas closely related—such as cluster munitions, anti-personnel mines and small arms—had NGO coalitions developing arguments, strategies and tactics for action at the international and other levels which could echo and support each other, rather than dividing them, as is often the case today.

Consciously seek out opportunities where synergies can happen and joint action can be fruitful. The rather artificial divisions which have been created at the multilateral level for tackling arms control and disarmament issues, many of them a legacy of Cold War requirements, also structure the work of NGOs in such ways that points of common concern are overlooked or do not mutually support each other. This is a current reality. To allow this to continue, however, would be irresponsible. Why should approaches, for example, to weapons risk education, stockpile management challenges, post-conflict disarmament approaches or the needs of survivors of the use of weapons—all features presented by the reality of armed conflict in our contemporary global situation—not be tackled as issues in and of themselves rather than being divided by different arms control frameworks? Some governments have begun to build more coherence into their national policy approaches to such questions, even if this coherency has not yet penetrated very far at the multilateral level. Even there, however, there are signs of change, as can be seen in the language of the Outcome Document of the September 2005 World Summit.[17] NGOs have been slow to develop their own coherence of action and contribute jointly to global initiatives which cut across the traditional arms control and disarmament divides. They need to learn to do this better. Their overall influence on the effectiveness of necessary multilateral approaches will be increased to the extent that they are able to do so. But this means learning to listen to each other and reduce defensive or territorial behaviour, which is to some extent present between NGO "clusters" today.[18]

Seek to incorporate voices from allied fields. One key to the success of the movement that succeeded in achieving the Anti-Personnel Mine Ban Convention was that a broad coalition of actors from the humanitarian,

human rights, development, children's issues, health and other fields were successfully convinced to actively support such a ban. The multi-faceted nature of the small arms issue is driving a similar approach, although there is still a way to go to achieve substantial buy-in from the range of actors, such as development organizations, which one might expect to have an interest in this issue area.

To date, the weapons of mass destruction arenas have been far less successful in attracting broad coalitions of organizations on a sustained basis. The development of a greater commonly shared humanitarian context for action on disarmament concerns could help to convince those who are so far unconvinced that there is potential relevance to their own field of concern by joining in appropriate ways. One particular negative example which might be used here is the failure so far to sufficiently convince those who are actively concerned with conflict transformation processes of the requirement of action on small arms for the success and sustainability of their initiatives in settings of armed violence. The power of developing wide-ranging coalitions of actors for shifting the content of the discourse and removing constraints to multilateral action can be demonstrated. A more widespread understanding of this could provide powerful impetus to overturning current stalemates in multilateral disarmament diplomacy.

TOWARDS A NEW "COMMUNITY OF PRACTICE" FOR NGOS

Neither "being in the middle by being at the edge" nor the approaches to realizing synergies briefly described above could be considered exhaustive solutions. Indeed, there are many other areas where important contributions of NGOs in helping to reshape or reinvent required multilateral disarmament processes can be seen. These include:

- Independent monitoring of state behaviour in relation to global norms and agreements, such as the functions of the *Landmine Monitor* and the reports of the Bio-Weapons Prevention Project.
- Independent reporting on multilateral disarmament processes like that provided by the Women's International League for Peace and Freedom's important *Reaching Critical Will* project.[19]
- Producing sophisticated studies on dimensions of particular weapons issues and their actual or potential impacts, such as the

work of the Small Arms Survey or the Bradford University Department of Peace Studies project on "non-lethal" weapons.

- Building alliances for multi-actor engagement towards action appropriate to what is required at the multilateral level, such as the informal government/UN agency/NGO partnerships that characterize aspects of work on anti-personnel mines, cluster munitions, DDR (disarmament, demobilization and reintegration), child soldiers and many others.
- Actively assisting the decay of ineffective multilateral processes while helping to put in place, even at the informal level, new, more appropriate mechanisms. For example, in light of the failure of the 2006 Review Conference on small arms to set clear next steps, one might see a very important role for NGOs in creatively stimulating those small arms areas where there appear to be a sufficient number of governments able to move ahead—such as on transfer controls, brokering and ammunition—in spite of the slow pace of global work that can be agreed as part of the consensus-based Programme of Action process. This is a necessary subversive role, where NGOs can work on the side of change in partnership with those governments who clearly see change as necessary, but are prevented by the present structures of multilateral diplomacy. This subversive role includes the fuller exploitation of the potential of regional processes.

But development of the kinds of directions suggested here, to the extent that they have any validity, will also require NGOs to change. In the first volume of this series, John Borrie introduced the concept of "community of practice" as a way of gaining a deeper understanding of elements shaping multilateral disarmament diplomacy. He used the term "community of practice" to mean "a group of people who over a period of time share in some set of social practices geared toward some common social purpose."[20] In looking at governmental dynamics, this perspective can help us to understand better not only those elements that can be seen to be instrumental in producing successful outcomes, but also those which can be seen to be inhibiting or preventing such outcomes.

The case made here is that there is under-developed potential for NGOs to enhance their presently limited participation in this community of practice and in the reshaping of it. To realize that potential, however, NGOs must come to understand more fully and learn to strengthen those dimensions of

their own "community of practice" which could enhance their role, while seeking to overcome those "self-limiting" factors which only support their relative marginalization.

Notes

1 John Borrie, "Rethinking Multilateral Negotiations: Disarmament as Humanitarian Action" in John Borrie and Vanessa Martin Randin (eds), *Alternative Approaches in Multilateral Decision Making: Disarmament as Humanitarian Action*, UNIDIR, 2005, pp. 7–37.

2 Ibid., pp. 29–30.

3 David Atwood, "NGOs in Disarmament: Views from the Coalface", *Disarmament Forum,* vol. 2, no. 1, UNIDIR, 2002, pp. 5–14. In that essay, I called for a more systematic comparative and multi-level analysis of NGOs and disarmament. This is not that analysis. It is, in my opinion, still needed.

4 Amitai Etzioni, "The Capabilities and Limits of the Global Civil Society", *Millennium: Journal of International Studies*, vol. 33, no. 2, London School of Economics and Political Science, 2004, pp. 341–353.

5 Ibid., p. 343.

6 Ibid., pp. 349–350.

7 The political scientist Béatrice Pouligny argues, "Activists generally ask for the strengthening of the stage or for its reorganization. … [D]espite the force NGOs might gain from an erosion of the state, they need it in order to get progress in their agenda." Béatrice Pouligny, "NGOs as Transnational Forces? Beyond the Myth, Evolving Interactions which Question the Political," conference paper, *Resilience or Erosion? The State under Attack—From Above and Below*, Centre d'Etudes et de Recherches Internationales, Paris, 15–16 June 2000.

8 Rosy Cave provides makes an important contribution in her comparison of the civil society roles in the Anti-Personnel Mine Ban process and the Conventional on Conventional Weapons Protocol on ERW process. This article provides substantial insights well beyond the general observation I offer here. See, Rosy Cave, "Disarmament as Humanitarian Action? Comparing Negotiations on Anti-personnel Mines and Explosive Remnants of War," in John Borrie and Vanessa

Martin Randin (eds), *Disarmament as Humanitarian Action: From Perspective to Practice*, UNIDIR, 2006, pp. 51–78.

9 See David Atwood, "NGOs in Disarmament: Views from the Coalface", *Disarmament Forum,* vol. 2, no. 1, UNIDIR, 2002, p. 9. See also Simon Carroll, "NGO Access to Multilateral Fora: Does Disarmament Lag Behind?", *Disarmament Forum,* vol. 2, no. 1, UNIDIR, 2002, pp. 18–23.

10 See for example the very useful review essay by Richard Price, "Transnational Civil Society and Advocacy in World Politics", *World Politics,* vol. 55*,* no. 4, Johns Hopkins University Press, 2003, pp. 579–606. In this essay Price examines key volumes in this literature which have appeared in the English language in recent years. See also, Jackie Smith and Dawn Wiest, "The Uneven Geography of Global Civil Society: National and Global Influences on Transnational Association", *Social Forces*, vol. 84, no. 2, The University of North Carolina Press, 2005, pp. 621–652. Two less than flattering views of NGOs in the field of disarmament affairs can be found in J. Marschal Beier, "Emailed Applications are Preferred: Ethical Practices in Mine Action and the Idea of Global Civil Society", *Third World Quarterly,* vol. 24, no. 5, Routledge, 2003, pp. 795–808; and Gerald Steinberg, *First Do No Harm: A Critique of the Human Security Approach to Arms Control*, Jerusalem Center for Public Affairs, Jerusalem Viewpoints no. 539, 2006.

11 Sue Williams and Steve Williams, *Being in the Middle by Being at the Edge: Quaker Experience in Non-official Political Mediation,* Quaker Peace and Service, 1994.

12 Diana Francis, *People, Peace and Power: Conflict Transformation in Action,* Pluto Press, 2002, p. 31.

13 In Volume II of this DHA project, John Borrie provides a useful analysis of the work of the Geneva Forum. He argues importantly that "[I]nterest in informal processes, such as the Geneva Forum, in which humanitarian and other approaches can be introduced, should not obscure the reason that they are necessary in the first place—because of the limits on substantive dialogue, interaction and trust-building in official processes. The constraints are both procedural and political. Consequently, the Geneva Forum's activities supplement the limited dialogue and input of transnational civil society into international decision-making on small arms issues, but are not a substitute." See John Borrie, "Small Arms and the Geneva Forum: Disarmament as Humanitarian Action?" in John Borrie and Vanessa Martin Randin

(eds), *Disarmament as Humanitarian Action: From Perspective to Practice*, UNIDIR, 2006, p. 156.

14 The work of the International Committee of the Red Cross (not an NGO but certainly an important transnational actor in its role as an international humanitarian organization) is especially important in this regard. See, for example, their initiative on "Biotechnology, Weapons and Humanity", at <www.scienceforhumanity.org>.

15 David Atwood, "NGOs in Disarmament: Views from the Coalface", *Disarmament Forum,* vol. 2, no. 1, UNIDIR, 2002, pp. 7–8.

16 See Rosy Cave, "Disarmament as Humanitarian Action? Comparing Negotiations on Anti-personnel Mines and Explosive Remnants of War," in John Borrie and Vanessa Martin Randin, eds., *Disarmament as Humanitarian Action: from Perspective to Practice,* Geneva: UNIDIR, 2006, pp. 51–78.

17 UN General Assembly, *2005 World Summit Outcome*, document A/RES/60/1, 24 October 2005.

18 See Don Hubert, *The Landmine Ban: A Case Study in Humanitarian Advocacy,* Watson Institute for International Studies, Occasional Paper No. 42, 2000. This work remains a classic in its examination of exogenous and endogenous factors leading to the success or failure of humanitarian advocacy across a number of issue areas. In 2002, Hubert, the Quaker UN Office, and the Centre for Humanitarian Dialogue brought leaders from the International Action Network on Small Arms, the Coalition to Stop the Use of Child Soldiers, the International Campaign to Ban Landmines, the campaign for the International Criminal Court, and the Kimberley Process together for a three-day gathering of what, on the surface at least, appeared to be natural allies who, by coming together, might discover possible common approaches and directions. While several successful initiatives apparently did emerge from this exercise, parochialism and defensiveness characterized the "dialogue" at the gathering to a surprising degree.

19 See <www.reachingcriticalwill.org>.

20 Here Borrie is quoting Ron Scollon, *Mediated Discourse in Social Interaction: A Study of News Discourse,* Addison Wesley, 1998, pp. 12–13. For a fuller description of his application of this idea to multilateral disarmament diplomacy realities, see John Borrie, "Rethinking Multilateral Negotiations: Disarmament as Humanitarian Action" in John Borrie and Vanessa Martin Randin (eds), *Alternative*

Approaches in Multilateral Decision Making: Disarmament as Humanitarian Action, UNIDIR, 2005, pp. 15–17.

CHAPTER 4

CHANGING PERCEPTIONS AND PRACTICE IN MULTILATERAL ARMS CONTROL NEGOTIATIONS

Rebecca Johnson[1]

SUMMARY

States' expectations and interests in multilateral negotiations are not fixed, but can be manipulated or altered by reframing the issues and disseminating knowledge, values, norms and ideas. The crisis in multilateral arms control is partly due to the fact that too many of the current rules, assumptions, institutional practices and negotiating strategies still reflect the Cold War's adversarial state-centric power structure. More must be done to adapt them to meet the human security concerns that are relevant for the twenty-first century and increase the opportunities for more mutual and participatory solutions to be created.

INTRODUCTION

> *"The ultimate goal of multilateralism is the dissolution of power into law, the substitution of a contract in place of domination."*[2]

In 1978, the first United Nations Special Session on Disarmament stated:

> All the peoples of the world have a vital interest in the success of disarmament negotiations. Consequently, all States have the duty to contribute to efforts in the field on disarmament negotiations. All States have the right to participate in disarmament negotiations. They have the right to participate on an equal footing in those multilateral disarmament negotiations which have a direct bearing on their national security.[3]

Whatever the "rights" expressed in this consensus proclamation from the UN Special Session, reality and practice are rather different. States do not

participate on an equal footing. They enter into multilateral negotiations with different expectations and interests. Some have a vast population and wide territories, others comprise a few thousand people on islands threatened by global warming; some are highly developed industrially and technologically, others less so; some are rich in highly valued resources such as fossil fuels, minerals or desirable crops, others less so; some have nuclear arsenals, some are infested with guns, and some have both. In short, states differ greatly in their resources, geostrategic characteristics and military and economic power. Their perceived security needs are different and they participate in multilateral negotiations with different assumptions about what they can achieve.

THREE APPROACHES TO MULTILATERALISM

Orthodox diplomatic usage juxtaposes multilateralism with unilateralism as the "two leading approaches available to states in pursuit of their ideals and self interests".[4] Viewed as a process linked with norms and ideals about greater international justice, legal equality (or at least non-discrimination) and legitimacy, multilateralism is not solely about the number of participating states.[5] The perception that multilateralism entails a qualitative, normative dimension relating to collective security and the management of shared resources may be widely understood in real life; but international relations theorists do not necessarily share it. The Westphalian national security paradigm continues to dominate training programmes for government officials and diplomats, impeding their ability to explore more constructive approaches in multilateral negotiations.

Multilateral arms control processes are intended to coordinate agreement among a diverse international collection of parties, and may be conducted for single issues or weapons, specific treaties or agreements, or to codify the principles, norms, rules and decision-making procedures associated with building a regulatory or prohibition regime.[6] It is not necessary for all states to have the weapon under consideration. In the case of anti-personnel mines, for example, possession was diffused among a wide group of states from all regions and political groupings, whereas in the case of nuclear testing, very few had nuclear test sites or capabilities.

Multilateral negotiations depend on the interplay of several related factors, including:

- the structure and procedures of the negotiating forum;
- timing and the political–diplomatic climate;
- the motivation, preferences, perceived interests and political will of the players, especially major players capable of impeding or facilitating progress;
- the degree of trust, tension, conflict and cooperation between some or all of the parties (which may also be influenced by geopolitical relations and objectives or problems in parallel negotiations in other forums, such as trade);
- relative levels of domestic public awareness, engagement and pressure;
- the relative levels of political commitment and internal stability of governments represented in the negotiations;
- personal and organizational leadership and corresponding alliances; and
- negotiating strategies and tactics employed.

Realism, neoliberalism and new multilateralism

The dynamics of some recent cases of multilateral arms control indicate that—despite rhetoric in the United Nations—states understand their participation and objectives in multilateral negotiations differently. To understand why, it is useful to go back to the theories of regime formation developed during the 1980s to address questions relating to international cooperation and security. The major schools of thought in regime theory are associated with "realist" assumptions about state behaviour, though the "neoliberal" variation differs in its analysis of the determining roles of structure and power, the significance of state and non-state actors, and the influence of agent-centred processes such as bargaining, learning and institution-building. Both, however, make the theoretical assumption that states can be treated as unitary, rational actors pursuing their interests in an anarchic international system.[7]

A third approach has been given the unfortunate name "new multilateralism", but that should not detract from its important insights: that realism's *anarchy problematique* is outdated, and multilateralism needs to address the more substantive *global problematique* of trans-border human security challenges, such as poverty, pollution, climate change, terrorism, drugs, crime, and violence—not just state security, but human security.[8]

Diplomats are trained to be pragmatic, usually in accordance with realist and neoliberal precepts. As its name suggests, realism is presented as if it is true, merely reflecting and making sense of actual, if sometimes regrettable, drives of human nature. The assumptions inherent in this nomenclature are doubly problematic when realism is juxtaposed with "idealism", which is then dismissed as utopian or impractical. Hence, peace, disarmament and sustainable development are represented as impossible ideals that fly in the face of reality. Being superficially obvious, however, does not make the assumptions underlying realism necessarily right. On the contrary, realism-based training provides a narrow perspective that may blind governments and diplomats to ways in which their notions of power and interests can be influenced and changed for the better (or worse). Disarmament and environmental sustainability may be ideals, but they may also be the only realistic path to human survival and security.

Realists frame the world in terms of sovereign states competing to maximize their power and individual security. Multilateralism is viewed as one kind of mechanism through which states that rely on self-help can cooperate on the basis of temporarily shared interests.[9] By realist reasoning, states will seek cooperation with others only where coordinating their policies appears to be the most rational means of increasing their power or avoiding the greater insecurity of a "free-for-all" approach. Hence, the very forces of "autonomously calculated self-interest that lie at the root of the anarchic international system also lay the foundation for international regimes … [T]here are times when rational self-interested calculation leads actors to abandon independent decision-making in favour of joint decision-making."[10] Accordingly, realists accept the need for multilateral coordination under certain circumstances: regimes may be useful for dealing with questions of common interest (for example, regulating trade) or to resolve dilemmas of common aversions (such as mitigating insecurity and proliferation threats).

Assuming cooperation is conditioned by the relative power of states, realists expect multilateral negotiations to be both a tool and a reflection of the interests of the more dominant states. The processes and products of multilateralism are expected to yield differential benefits, with the more powerful states ensuring that their significant interests are met. Even so, when rational actors would all benefit from cooperating, they are not necessarily able to do so. Failure to cooperate in rationally beneficial circumstances arises not just from what Kenneth Waltz called the

"interference" of political interventions and social customs,[11] but may be inherent in the structure of the interaction, such as the impasse in the Conference on Disarmament since 1998.[12]

Realists have structured multilateral institutions in the image of their conception of competing states and then assume it cannot provide long-term solutions for collective action. Longer-term stability might be deemed more likely in cases where the framework for negotiations and range of feasible solutions (called the "payoff matrix" in negotiations theory) are underpinned by a superpower or dominant regional power. In this case of "hegemonic stability", multilateralism is assumed to operate in accordance with the interests of the hegemon or dominant power.[13] If that leadership is constructive, it can play a useful part in enabling and supporting the multilateral regime. Similarly, a negative or unilateralist hegemon can erode and undermine multilateralism and cooperative security.

Realists have significant difficulty with the normative element in multilateralism implied in modern diplomatic usage.[14] They reject the connotations of participatory justice or fairness in international decision-making, except when such ideals are evoked to serve as incentives to secure the cooperation of others. Where realists view the international system in terms of power distribution and perpetually competing states, neoliberals have developed a theory of complex interdependence in which power is more diffused.[15]

A further important difference is in the roles each accords to institutions and to other actors in facilitating and sustaining cooperation. Realists consider that the practices, processes and outcomes of multilateralism essentially reflect the participating states' power and interests, which may shift over time. By contrast, neoliberals see the institution itself playing a role in embedding norms and practices that integrate themselves in further multilateral practice and institutions, which in turn feed back into and shape the interests of states. In the neoliberal view, "even if the realists are correct in believing that anarchy constrains the willingness to cooperate, states nevertheless can work together and can do so especially with the assistance of international institutions."[16] This feedback loop between states' interests and institutional norms and practices helps to sustain cooperation even when strategic relations, relative power and the interests of particular governments fluctuate or shift.[17]

Realism accords little value to the activities of civil society, assumed to be of marginal influence on the state system. Though neoliberals view multilateral negotiations as primarily taking place among states, other actors, such as transnational corporations, international and national non-governmental organizations (NGOs) and interest groups, are seen to play a constitutive role in shaping states' interests and influencing the conditions for cooperation.

Leaving many realists behind in the Cold War, multilateralism has increasingly come to be perceived as a tool not only for managing cooperation problems among states, but for promoting the normative goals of global governance and international law. Global governance theories are critical of state-centred politics, and emphasize the multiplicity of actors: not just governments and intergovernmental institutions, but transnational corporations, citizens' movements, and NGOs. Accordingly, new multilateralism encompasses non-governmental, intergovernmental and trans-governmental relations, and is imbued with the normative "commitment to greater social equity, greater diffusion of power among countries and social groups, protection of the biosphere, moderation and non-violence in dealing with conflict, and mutual recognition of the values of different civilisations".[18]

To sum up the key differences between the three theoretical approaches, realists emphasize state power and view multilateralism as a mechanism for conflicting powers to coordinate for the purposes of increasing their relative power or mitigating security threats. States engage in multilateral negotiations, agreements or regime formation either to further their interests (achieve relative gains) or because non-participation would entail relative losses. Neoliberals emphasise inter-state cooperation for mutual benefits, and regard international regimes and institutions as being instrumental in stabilizing and sustaining cooperation. "New multilateralists" emphasize participatory decision-making by states and civil society to promote the norms and objectives of collective security, global governance and international law.

States in the UN system

The UN system, by legal and diplomatic convention, is state-centric.[19] In the Conference on Disarmament (CD) and the United Nations as a whole, states are treated as legally unitary, sovereign entities. By diplomatic

convention, a country's delegation and diplomats are taken to represent the policies of the recognized states behind whose name plates they sit. Though these convenient and practical conventions appear consistent with realist theory, it would be a mistake to confuse them with the assumption that states behave as unified rational actors. On the contrary, states in the real world are not consistent units, but "conditional entities"[20] that are "constantly subject to capture and recapture, construction and reconstruction" by social and political actors, through elections, coups, or other forms of governmental change.[21]

Diplomats, too, are temporary and contingent. They do not so much represent a long-term, stable, unified or rational entity as the policies, positions and interactions of their country's current policy makers. If an administration is changed, through election or some less democratic process, the state's objectives and strategies may correspondingly change. The degree to which a state's objectives and negotiating posture change depends in large part on the magnitude of the political differences between the outgoing and incoming administrations. If the distinctions are relatively weak, a change of party or government may have minimal effect on foreign policy. A coup or the election of a party with political and ideological precepts that are fundamentally different from those of the preceding government can result in a very significant shift in foreign policy or negotiating posture.

Power struggles among domestic actors, agencies and pressure groups (bureaucratic, diplomatic, civil, military and political) may shift foreign policies and alter a state's negotiating positions.[22] While it is not the purpose of this paper to examine how different domestic actors and agencies interact in determining foreign policy, it is necessary to acknowledge the domestic/international interactive processes that influence decision-making.[23] It is important to recognize that there is seldom a one-way linear process from determination of a state's policies and positions and instructions from capitals to implementation by diplomats in the field. Though charged with the task of carrying out instructions, there is a feedback loop frequently observed between the perceptions and diplomacy of practitioners in the forum and the decision-making processes at home.

FRAMING OBJECTIVES AND OUTCOMES

Where the positions and perceived interests of parties to multilateral arms control may start quite far apart, the goal of negotiations is to bring about convergence. In the following section, two broad concepts of agreement are considered: distributive convergence, based on apportioning benefits and constraints, usually through mechanisms of power or the trading of compromises and concessions; and integrative convergence, which focuses on changing the perceived parameters of possible solutions to foster a more mutually advantageous outcome. Consideration is then given to the different ways in which power, knowledge, ideas and negotiating strategies and tactics are employed in constructing these different types of agreement.

Distributing the benefits, dividing the pie

The traditional, and still prevalent, approach to negotiations focuses on dividing or reconciling a pie that is assumed to be predetermined in size or content. Agreements reached through zero-sum bargaining and balancing gains and losses are known as distributive. The training programmes that dominate international relations and diplomacy still tend to be underpinned by the expectations associated with distributive bargaining.

Several types of distributive convergence may be reached. At one extreme, a hegemon or other dominant actor might impose a settlement that the rest are obliged to accept. For example, during the Cold War, arms control was developed as a mechanism to manage US–Soviet relations and mitigate insecurity, most notably in relation to their nuclear arsenals. Other states were expected to accept and fit in. This kind of hegemonically imposed fiat does not really qualify as a process of negotiations, even if it involves a division of gains and losses involving other states.

Negotiators, particularly in forums such as the UN Security Council, are more familiar with what can be called “imposed convergence”, when a state or dominant group determines the parameters or specifics of a solution to a particular cooperation problem. A form of negotiations may be conducted within the privileged group, but others have little say in the outcome. This does not necessarily mean the outcome is to other states’ detriment or that they must be coerced into accepting. The issue may come down to the perceived level of importance of the interests involved, for example, whether they are direct or indirect—who possesses the weapons

or capabilities concerned, and whether they are regarded as strategically crucial or of marginal utility. Other actors will accept an imposed convergence if they consider the tangible or regime benefits to be greater than the alternative of getting no agreement.[24]

An example of imposed convergence is the 1963 Partial Test Ban Treaty,[25] which was negotiated between the Soviet Union, United Kingdom and United States and then opened for other states to sign on to. Most countries had no nuclear weapon programmes at the time and welcomed the benefits of a worldwide restriction on nuclear testing in the atmosphere, under water and in outer space, even if the treaty did not prevent new nuclear weapons from being designed and developed on the basis of data from underground explosions.

Even such a purportedly multilateral agreement as the Nuclear Non-Proliferation Treaty (NPT), which originated in an Irish–Swedish resolution to the UN General Assembly in 1961, was negotiated in earnest only after the United States and Soviet Union submitted identical draft treaties to the Eighteen Nation Disarmament Committee (ENDC) in August 1967.[26] Though the non-nuclear weapon states played an important role in ensuring that the NPT would link disarmament with non-proliferation and not curtail the right to nuclear energy, the superpowers maintained overall control in how they incorporated these into their last joint draft, which was adopted in 1968 and became the final treaty.

During the Cold War, many such treaties lacked effective verification, in part because the two superpowers were relied on to use their national technical means to monitor and their power to enforce compliance, at least within spheres of influence that encompassed much of the world. Even during the negotiations on the Comprehensive Nuclear Test Ban Treaty (CTBT), which took place in the Conference on Disarmament from 1994 to 1996, the five permanent members of the UN Security Council (P-5) conducted their own "minilateral" negotiations on issues relating most closely to their nuclear capabilities or privileges, such as scope and inspections. These P-5 negotiations epitomized the nuclear weapon states' assumption that they had a right to negotiate privately, following which they expected to be able to impose their preferred outcome on the negotiators from other states. Things did not always work out that way, however, as my later discussion on CTBT scope convergence illustrates.

A further type of multilateral outcome may be brought about through various negotiating techniques, including concession trading and the manipulation of text and meaning. This kind of "managed convergence" is common in multilateral negotiations where participants regard the payoff structure as fixed or at least relatively inflexible. Though capable of delivering mutual or regime benefits, such managed, distributive convergence frequently results in lowest common denominator agreements where differences are split or the more powerful receive greater benefits.

Increasing the options, expanding the pie

In contrast to the assumptions and practices of distributive convergence, where states fight over portions of a limited pie, more interest is now being given to ways of enlarging the pie. Known as integrative convergence, this process places high priority in achieving a mutually advantageous solution, for example through changing the context or reframing the issues. Though one aim is to reduce the adversarial win–lose dynamic of traditional negotiations, integrative convergence does not imply that all states are treated the same or that all will benefit equally. While the objective is an outcome that benefits all parties, some may be required to compromise or concede more than others, depending on the circumstances. If the given pie is inadequate, for structural or political reasons perhaps, some or all of the negotiators could even decide to go and bake a different pie and share that instead.

This is what occurred in the case of anti-personnel mines, resulting in the 1997 Anti-Personnel Mine Ban Convention. Civil society had intensified pressure for a total ban on anti-personnel mines, but could get nowhere in the two forums assigned to the issue: talks under the auspices of the Treaty on Certain Conventional Weapons (CCW) were deadlocked over partial measures, and the CD was busy negotiating the CTBT (and was in any case unable to agree to include a landmine ban as part of its programme of work). Not prepared to wait indefinitely while many thousands of people were being killed or maimed by mines each year, a partnership between a few medium-sized states (including former manufacturers of landmines as well as mine-affected countries) and civil society—coordinated by the International Campaign to Ban Landmines (ICBL)—established an issue-specific negotiating forum independent of both the CCW and the CD, and then proceeded to negotiate and agree a total ban on anti-personnel mines.[27]

The integrative problem-solving approach aims to expand or change the zone of possible agreements by creating or presenting a different range of options for convergence than first appeared to be on the table.[28] In contrast to the assumptions of distributive convergence, integrative convergence does not regard expectations and interests as fixed, but as factors that can be manipulated or altered by teaching or recasting knowledge, values, norms and ideas. It is therefore associated with the cognitive and communications strategies of civil society, particularly those that seek to change how negotiators view problems or perceive the value and achievability of potential solutions.[29]

The CTBT scope outcome provides a good example of integrative convergence in all its complexity. Because Article I of the treaty carried the basic obligations and philosophical and political underpinnings of the treaty, a range of interest groups actively sought to influence national positions. The P-5, among whom interests were both complementary and competitive, tried to keep scope negotiations within their own minilateral negotiations. They shared a core interest of preserving their nuclear weapon programmes while curbing the options of others, but because of their unequal technological capabilities, political distrust and rivalry, the P-5 were unable to reach agreement on "activities not prohibited", including safety tests, low-yield "hydronuclear experiments" (HNE) and so-called peaceful nuclear explosions. The turning point in the CTBT negotiations came toward the end of the second year of negotiations, and was almost entirely determined outside Geneva.

Some—not least the French—accord the resumption of French testing a decisive role in the zero-yield outcome. Closer analysis suggests that it was not the French decision in itself, but rather international public reaction, that provided the policy-shaping jolt that pushed US President Clinton into his announcement on zero yield in August 1995. The swiftness and intensity of public outrage, expressed through boycotts and demonstrations in many countries, much newsprint, and thousands of letters not only to Paris, but also Washington, reminded Clinton (ever sensitive to public opinion) that a total test ban was an important and popular objective. The protests also conveyed the warning that, if testing were not properly banned, there could be a revival of the kind of anti-nuclear protest movements witnessed in the 1980s. This may have contributed to a sense of crisis; if so, the crisis was not exogenously produced but engineered politically, mainly by transnational civil society. A second important factor in shaping the zero-yield decision

was the provision of technically relevant solution-oriented information by non-governmental scientists and arms control experts in Washington, a specific "epistemic" role discussed below.

Though the CTBT scope outcome did not correlate with attributive political power in realist terms, perceptions of power and self-interest are relevant to an understanding of why the nuclear powers' rivalry outweighed their mutual interests. The zero-yield decision became possible not only because the P-5 were deeply divided over threshold levels, with no acceptable managed convergence in sight, but because there were also disputes within and between the various US agencies. Trans-governmental alliances between the nuclear scientists and military officials of more than one P-5 country further complicated the picture. In this situation, in which interests and power were fragmented and pressure was being exerted on all sides of the argument, norms and ideas won out: Clinton chose a scope more consistent with the disarmament objectives of test ban advocates.

While certain US government experts and officials were undoubtedly influential, international civil society played a crucial part in repositioning the issue of scope from a debate among the P-5 over "activities not prohibited" to one about the political purpose of a test ban, thereby shifting the payoff matrix from HNE thresholds toward zero yield. Although ideas and cognitive strategies were more influential in determining the scope outcome than power and direct interests, realist considerations were not wholly swept aside, as illustrated by French President Chirac's decision to obtain simulation capabilities through testing and Clinton's imposition of six safeguards and a massive budget for stockpile stewardship, which most if not all other nuclear weapon states then emulated. This analysis of the shaping of the outcome on scope highlights further important aspects of multilateralism in the twenty-first century: the need for a more complex, nuanced understanding of power and influence; and the role and relevance of non-state actors, expertise, ideas and norms.

Power and influence

Had the P-5 been able to cooperate more effectively during the first half of the CTBT negotiations, it might have been possible for them, as the dominant nuclear powers, to have imposed a scope outcome on the rest that would have represented narrow P-5 interests far better than the actual outcome did. In negotiations conducted in accordance with distributive

assumptions, traditional concepts of power, which derive from a state's military and economic capabilities, continue to be a major factor. Yet, as this paper explains, such absolute or "attributive" power[30] is less a determinant in multilateral negotiations than conservative analysts assume. Unless we also consider what actors *do*, and not just what they *are* or *have*, we are at a loss to explain how those with less attributive power, such as medium-sized states or civil society, are able to exert such significant influence on the outcomes of negotiations.

In determining some outcomes, systemic or relational power may prove more relevant than "attributive", absolute power. Traditional theory sees systemic or relational power as determined by the distributive pattern of economic or military power in the system.[31] In twenty-first century international relations, it would be wise also to pay greater attention to factors beyond the merely military and economic.

Power frequently has an issue-based dimension. Early in the Cold War, for example, nuclear weapons came to be viewed as indispensable tools to consolidate military power and political status. For many, this was illustrated by the congruity of the P-5 permanent seats on the UN Security Council with the five NPT nuclear weapon states. In the post-Cold War era the relationship between the possession of nuclear weapons and geostrategic influence is much weaker. Countries such as North Korea, Iraq and even India and Pakistan have sought nuclear weapons to compensate for inadequate military capabilities and to project disproportionate regional or political force. Similarly, declining military and economic powers such as Britain, France and Russia cling to nuclear weapons and appear to be afraid that if they disarm they will cease to be treated as major powers.

Attributive power and relational power may be components of issue-based power, but two further elements need to be highlighted: the capability to influence other actors and the capability to influence the structure and framing of the interaction, including the rules, who plays and who is sidelined.[32] Thus, interactive, bargaining power is of particular relevance in multilateral negotiations. More likely to be issue-specific than generic, bargaining power constitutes the ability to get others to do what they had not originally intended to do. In effective bargaining, the means are persuasion rather than coercion: the desired outcome is to achieve an agreement that all concerned can regard as reasonable.

When negotiators are described as having "bargaining power" it means that they are successful in deploying their resources and capabilities either to change other actors' perceptions of what constitute acceptable gains or losses *or* to change the zone of possible agreements to integrate preferred options that had not previously been recognized as possibilities. Another type of power, known as "charismatic power", may contribute to bargaining power, and is associated with leadership and individual personality. Charisma can be exercised not only in the context of political leadership, but is also seen within the diplomatic community. A charismatic ambassador or official can more effectively muster support and gather coalitions around particular initiatives. Conversely, an awkward or arrogant diplomat can provoke antagonism and opposition regardless of the merits of the case.

Although the exercise of attributive power or cheque book diplomacy can undoubtedly achieve some objectives, the outcomes tend not to be as sustainable as those achieved through a more consensual process. To be successful in multilateralism depends increasingly on knowledge, negotiating skills, and the ability to shape perceptions and build alliances—power *of*, rather than power *over*.[33] This is not the prerogative of states alone, as the next section shows.

KNOWLEDGE, NORMS AND IDEAS: THE CONTRIBUTION OF CIVIL SOCIETY

As discussed above, expectations and interests in multilateral negotiations are not fixed, but are factors that can be manipulated or altered by teaching or recasting knowledge, values, norms and ideas. Strategies for promoting integrative convergence recognize this fact and incorporate cognitive and communications tactics to change the payoff matrix. The strategies and skills of civil society actors are now recognized as playing critical roles in influencing how negotiators view problems or perceive the value and achievability of potential solutions.

The term civil society is itself subject to interpretation, and has changed over time. It is here used to encompass NGOs,[34] informal associations and loose coalitions, forming connections across national borders and inserting themselves into a wide range of decision-making processes on issues from international security to human rights to the environment.[35] Two other concepts that are relevant to consideration of the role of civil society in arms control negotiations are epistemic communities, developed by Peter Haas

in his exploration of how experts with cognitive authority shape policy outcomes,[36] and norm entrepreneurs identified by Ethan Nadelmann and Richard Price as civil society actors who mobilize and lead public opinion.[37] Civil society does not always oppose government policies or challenge the state; some actors may organize to reinforce the policies of particular governments or opposition parties.[38] Hence, depending on the specific goals and strategies under consideration, civil society may be progressive or retrogressive; it may seek emancipatory outcomes or harness its energies to resist change or promote outcomes that would stabilize the status quo.

With regard to multilateralism and regime building, civil society has often played an important role in the pre-negotiation phase, during which states are brought to the negotiating table. Civil society is likely to be both more interested and more successful in influencing outcomes with high political salience than in brokering agreement on legal, technical or institutional issues. From their point of view, the difference between the scope of a treaty comprising a comprehensive ban or partial restrictions is more crucial—and can be better explained in messages for building public support—than whether an on-site inspection should be triggered by the votes of half or two-thirds of the executive council of the implementing body.

Civil society groups and individuals employ a range of elite, public movement or direct action strategies to influence government policies and public opinion. Tactics may include the targeted use of information (for example, the number of people killed or maimed by landmines each day) or high-profile messages from influential "stars" (for example, Princess Diana in the minefield). Norm entrepreneurs may also act as "citizen diplomats", developing strategies and advising government delegations on tactics or the technical and political implications of various options. They seek to turn ethical concerns into international norms, and deploy their resources to change governments' perceptions of the desirable objectives and parameters of feasible, acceptable agreement. Instead of self-interest, their goals are outcomes that will enhance human security.

Elite strategies rely on professional, epistemic actors, such as doctors, scientists or academic specialists. With cognitive tactics based on expert knowledge and professional status, they frequently favour limited, incrementalist objectives that are either realizable in the short and medium

term or perceived as pragmatic steps toward a larger goal.[39] Norm entrepreneurs may be associated with elite, public movement or even grass-roots campaigns. Generally associated with the high-profile promotion of particular ethical, philosophical or humanitarian views, they may engage nationally or transnationally, and seek to mobilize public opinion and influence governments within their own countries and abroad.

Public movement campaigning usually includes both grass-roots membership and skilled organizers, who may be voluntary or paid. Aiming to influence decision-making through the mobilization of public concern or outrage, they will use elite tactics or direct action, as appropriate. Hence their tactics may include a mixture of petitions, meetings, demonstrations and targeted letters to raise public awareness and obtain media coverage and political leverage. The larger the numbers they can mobilize, the more effective they are seen to be. Public movement campaigning may be national or transnational and is not necessarily limited to a single issue.

Activists contribute to transnational civil society, but are seldom constituted as NGOs per se. Except in the case of an organization like Greenpeace, which employs non-violent direct action as a tactic, activists tend to reflect grass-roots campaigns. Frequently exhibiting fluid participation, with few if any paid staff, activists may act alone or in small "affinity groups". Decision-making is likely to be based on personal responsibility, with processes similar to the consensus building developed among Quakers. Like the public movement NGOs, non-violent direct action is meant to raise public awareness. While some actions are therefore designed to be highly visible public events, others may seek to undermine the operations and power of that which the activists oppose, for example by blocking or disrupting polluting facilities or military bases.

While activists in some campaigns, such as animal rights, have been known to choose violence and intimidation as tactics, this is rare in the field of disarmament. Disarmament activists are generally opposed to the use of coercion, violence and weapons, considering such means to be self-defeating, since they reinforce the logic of conflict and governments' own justifications for weapons and war. Not all disarmament activists would define themselves as pacifist, and many consider that terms like "passive resistance" are outdated, since it takes a great deal of imaginative and assertive resistance to oppose the dominant paradigm based on "might is right". Disarmament activists derive moral authority from their commitment

to the principles of non-violence and personal accountability, which extend to the disruption of military work, such as disabling weapons or machinery or occupying military vehicles or sites, as long as people—including military and law-enforcement personnel—are not threatened, abused or harmed. Though activists in some countries still characterize their actions in terms of civil disobedience, as in the civil rights movement in the United States, when it became a duty to disobey unjust laws, a more usual strategy for disarmament activists these days is to argue that they are actually upholding the rule of law. Though their actions may result in arrest and trial, they will often argue that they are not guilty of any crime or legal offence, and that it was "necessary" to breach a domestic law protecting illegal military activities (for example) in order to uphold international laws, such as the NPT, the Geneva Conventions and rulings of the International Court of Justice (ICJ). For most disarmament activists, non-violent direct action is not solely a tactic, but rather a manifestation of the principle that means should be consistent with ends and people are personally responsible for acting in accordance with their conscience.

Neoliberals and new multilateralists incorporate the agency of civil society into their theorizing, though they may disagree about the nature, mechanisms and significance of non-governmental influence on national and international decisions and events. Realists, however, continue to ignore or devalue civil society's contributions, as reflected in the structures and rules of multilateralism. It is no coincidence that civil society participation is more excluded and circumscribed in security- and disarmament-related negotiations than in any other area of multilateralism. Even so, examples from negotiations spanning from nuclear weapons to small arms show a growing range of civil society actors, networks and activities with the knowledge and skills to influence policy choices and negotiating outcomes. These show how civil society can contribute to multilateral arms control by stigmatizing a weapon or practice, raising political awareness and focusing public opinion to demand its abolition or control.

Once negotiations have commenced, civil society experts will increasingly work with constructive governments to formulate strategies and advise on tactics and options. As negotiations proceed, civil society will work to harness support for particular outcomes (or, conversely, opposition against certain proposals). Finally, if the negotiations have been able to deliver an outcome that significant sections of public and expert opinion can endorse,

governments may find that they need civil society to continue to be engaged to monitor compliance and promote entry into force. The more the structures and rules of multilateralism try to exclude civil society, the less successful and relevant the negotiations are likely to be.

NEGOTIATING TACTICS

Regardless of the specific issue, multilateral negotiations have spawned a variety of strategies and tactics that diplomats, and other actors, can employ to promote constructive outcomes, obstruct or delay negotiations, or try to increase relative gains. Though progress has been made, more needs to be done to develop the kinds of strategies and tactics that would change how other players view the negotiations and expand the zone of feasible agreements, thereby fostering integrative solutions.

The boundaries between constructive and obstructive tactics are not always clear cut, and can depend on the interests and preferences of both the user and the perceiver. Depending on a negotiator's intention and the circumstances of the interaction, a particular demand or action—calling for an inquiry, for example—can either be used as a delaying tactic or as a constructive, cognitive tactic aimed at facilitating convergence through shared understanding. In this final section, I have developed a topology of negotiating tactics used to delay, conceal, link, defect, trade concessions, bridge differences, change perceptions and bypass obstructions.

DELAY

If negotiators wish to obstruct negotiations they may employ a variety of tactics of delay, concealment or defection. Delaying tactics are frequently exhibited in the pre-negotiations phase, for example, to prevent a programme of work, agenda or negotiating mandate from being adopted. Johann Kaufmann[40] identified three kinds of delaying tactics, which he called Waiting for Godot, quicksand and Ping-Pong. In Waiting for Godot, a negotiator continually insists that the time is not yet ripe, while impeding all attempts by others to create more positive conditions. Quicksand is produced by bogging down a proposal or initiative in questions, objections or demands for definitions, or by insisting on an inquiry or further expert consultations. Ping-Pong, a third, popular delaying tactic, is to have an initiative or issue referred to another committee, forum or authority and, if

possible, to get it shunted back and forth between rival bodies for as long as possible.

This tactic was employed for several years by opponents of a total ban on anti-personnel mines, who variously insisted that the issue must be addressed under the auspices of the CCW, where it was bogged down, or in the CD, which was busy negotiating the CTBT and highly unlikely to deal with anti-personnel mines for a very long time. Similarly, opponents of negotiations to promote outer space security have stymied progress in different forums by evoking a rigid separation between civil and military activities that is not borne out by the commercial and technological realities of space operations. This tactic has resulted in the issues being bounced between the First and Fourth Committees and between Vienna (home of the Office of Outer Space Activities) and Geneva (where the United States has for years opposed prevention of an arms race in outer space, or PAROS, talks in the CD).

Concealment

States may also employ a variety of tactics to conceal their real objectives, intentions or interests. Concealment tactics are used by weak, insecure states or governments that are acting contrary to stated ideology, national policy or public opinion. They may also be deployed by alliance or group members who do not wish to be exposed as pursuing national self-interest at the expense of collective policy, or even by diplomats that disagree with their instructions or government's position, which is more common than might be expected.

Frequently observed examples of concealment tactics include "hide and seek", "slipstreaming", "fronting" and "faking". In the hide and seek tactic, real objectives are masked by high-minded rhetoric or a mass of technical data and extraneous detail. With slipstreaming, a delegation keeps quiet about its own preferences and coasts behind another delegation that holds the same position. Fronting is a frequently observed collaborative form of slipstreaming, in which one delegation adopts a position that is stronger than its own interests would require, enabling others to benefit by coasting in its wake. This has often been demonstrated by the United States and Israel or by China and Pakistan. The fronting delegation is usually but not always the stronger: Britain has also fronted for US positions, in situations where the United States does not wish to be exposed.

Faking is the tactic of pretending to support a proposal that you actually oppose or vice versa.[41] It may involve manipulating another country (or countries) to take the lead in advocating or opposing a position, leaving them responsible if it fails. As is sometimes the case in slipstreaming, faking is deployed by states that want to keep favour with allies or dominant states, or by governments with positions that they assume would attract domestic criticism if made public. There are instances, however, of states being taken up on their fake positions and having then to stand by them, as happened when the Soviet Union suddenly accepted NATO's "zero option" in the mid-1980s, leading directly to the Intermediate-Range Nuclear Forces Treaty in 1987.

Linkage and defection

The third category of tactics involves linkage and defection, with the aim of blocking agreement or providing grounds for pulling out of any agreements that might be reached. Two commonly used defection tactics are "moving the goalposts", in which standards are shifted or objectives are moved further away to ensure that agreement is rendered more inaccessible; and "best versus good", which is a version of moving the goalposts in which a remote or unobtainable ideal is persistently evoked to prevent agreement on a more practical, achievable measure. India used these tactics to considerable effect during the CTBT negotiations. For example, India's position at the beginning of the negotiations was to oppose any threshold, safety tests or exemption for "peaceful nuclear explosions", as advocated by different P-5 delegations. When, against all odds, a zero-yield scope without these provisions was agreed half-way through 1995, India quickly moved the goalposts to link the ban on nuclear testing with a time-bound framework for complete nuclear disarmament. This laudable demand was not realizable in the context of the test ban negotiations, but it could allow India to claim the moral high ground when it refused to adopt or sign the final treaty.

It is sometimes difficult to determine whether a state is genuinely holding out for a more radical solution or deploying best versus good tactics for the purposes of obstruction or defection: one basis for judgement would be the degree to which a government actively worked towards achieving the "best" outcome or merely evoked it in criticism every time it appeared as if the "good" alternative might be achieved.

Some states defect by means of the maximalist "all or nothing" demand, which is closely related to the linkage tactics that tie progress on agreement on one issue with agreement or gains on another issue. The hallmark of "all or nothing" is the mantra "nothing to be agreed until everything is agreed". Various states deploy this tactic to ensure that commitments important to them cannot be dropped once the dominant states have got what they wanted. As such, it may reflect not an intention to obstruct the negotiations as such, but an assertion of a political objective that outweighs the perceived gains of agreement on other elements. One such example in the NPT context would be a nuclear-weapon-free zone in the Middle East; the League of Arab States invariably ensure that this demand is included to their satisfaction before they will back the rest of the final document.

Linkage is a two-edged sword that may be used for positive reasons but which frequently contributes to deadlock. Linkage tactics that prevent negotiations being started on one issue until there is agreement to work on or omit some other subject, which may or may not be related, have long bedevilled the CD. In negotiations, linkage may be exerted in a different way when dominant countries like the United States or Russia try to coerce other parties by pronouncing a particular issue a "treaty breaker". To be convincing, this coercive "hostage-taking" tactic has to be used selectively and sparingly, as when Russia claimed that the inclusion of India, Israel and Pakistan in the CTBT's entry-into-force provision was non-negotiable, or when the United States characterized a certain on-site inspection provision as a treaty breaker. A particularly frustrating, though sadly not unusual, linkage tactic is "tit for tat", in which—regardless of the merits of the question—a negotiator will "pay back" another that has offended in some way, whether intentionally or not. This unhelpful tactic probably has less to do with substance than with rivalries or negative dynamics within the negotiations.

Linkage can also contribute towards convergence, for example through concession trading,[42] which is a bargaining process in which concessions are made on one issue to win favourable compromises on another, which may or may not be substantively related. Other bridging strategies include mediation, when underlying causes of disagreement are addressed; bridge building, in which demands and positions are modified or conceded for the sake of agreement; and third-party bridging, in which an honest broker—for example, a third party or group of middle powers—facilitates agreement by exploring solutions somewhere between the extremes and identifying

and fostering concessions that bring antagonistic parties closer together. In 1995, South Africa proposed that indefinite extension of the NPT should be linked with a strengthened review process and principles and objectives for nuclear disarmament and non-proliferation. This became the basis for the consensus outcome, bridging the considerable gap between those that wanted indefinite extension and the non-aligned countries that feared that indefinitely extending the treaty would remove the pressure for full implementation, especially with regard to the disarmament obligations.[43]

Cognitive tactics

In contrast to obstructive negotiating tactics such as delay, concealment and defection, cognitive tactics are associated with strategies to facilitate integrative convergence and regime building. Four kinds of cognitive tactics are identified here: norm shaping, reframing, stepladder and unpacking.

The aim of norm shaping and reframing is to change the perceptions of other negotiators in order to recast and enlarge the zone of possible agreement. The New Agenda Coalition, for example, used these tactics in its successful strategy from 1998 to 2000, which resulted in agreement on an explicit 13-paragraph programme of action for nuclear disarmament at the 2000 Review Conference.[44] Though cognitive tactics are also utilized for the purposes of bridge building or mediation, the New Agenda example was more than this. Representing their own stated interests in obtaining stronger commitments on disarmament, the New Agenda drew from the 1996 Canberra Commission and ICJ advisory opinion, shaped their findings and repackaged them as part of a strategy to change the perceptions and positions of others and bring about a much stronger and more specific outcome than most had considered possible.

In the cognitive tactic that I have dubbed stepladder, new insights, for example technical information or data about the consequences of differing policy choices, are introduced to enable parties to surmount obstacles or at least to perceive them from a different vantage point. Similarly, the chances of agreement may be enhanced in some cases if negotiators unpack complex issues, disaggregating them so that they can be resolved incrementally.[45]

BYPASS

Finally, when political or institutional obstacles appear intractable, negotiators can choose to perform a bypass operation. The Ottawa process, which bypassed both the CD and CCW to create an alternative forum where a total ban on anti-personnel mines could be negotiated, provides a now famous example of effective use of this tactic. Similarly, leap-frogging is performed when one or a group of states jumps over obstructions placed in the way of agreement. In one notable example from the CTBT, Australia took the finalized treaty text out of the CD, where its adoption had been blocked by India in August 1996, and tabled it in the UN General Assembly, where it was resoundingly adopted by 158 votes in favour, with only three against and five abstentions. Such tactics should probably be treated as a last resort, and the initiator(s) need to have some confidence that the majority will endorse. Leap-frogging, in particular, may be a high-risk strategy, and even when successful, can cause resentment.

Box 4.1. Summary of negotiating tactics

Delay

Waiting for Godot—interminably delaying for the time to become ripe

Quicksand—bogging an initiative down in questions, objections or demands for definitions or an inquiry

Ping-Pong—shunting an issue back and forth between different committees or forums

Concealment

Hide and Seek—concealing real objectives in high-minded rhetoric or a mass of technical data and extraneous detail

Slipstreaming—concealing preferences behind the positions of another delegation

Fronting—a form of collaborative slipstreaming, in which one delegation adopts a position that is stronger than its own interests would require, enabling others to benefit by coasting in its wake

Faking—a tactic of pretending to support a proposal that you actually oppose, or vice versa

Box 4.1 (continued)

Defection and Linkage

Moving the Goalposts—whatever is achievable becomes by definition inadequate and is ditched for a more inaccessible position

Best versus Good—rejecting adequate or useful agreements on the grounds that they do not match up with some grander but less accessible ideal

Linkage—tying progress or agreement on one issue with achievement of agreement or gains on another issue

All or Nothing—a linkage tactic asserting that "nothing is agreed until everything is agreed"

Hostage-taking—coercively presenting a contested point or outcome in your favour as a "make or break" issue for the whole negotiations

Tit for Tat—"you've done something to annoy me, so I'll do something to annoy you back"

Bridging and Trading

Concession-trading—a bargaining process of trading concessions to facilitate convergence

Mediation—when a third party or parties help to promote agreement by enabling antagonists to address underlying causes of disagreement

Bridge Building—in which one or more of the antagonistic parties are prepared to concede or modify demands to promote convergence

Third-party Bridging—an "honest broker" explores ways in which to bring antagonistic parties closer together

Cognitive

Norm-shaping—stigmatizing the weapon or problem, associating with legal or ethical prescriptions, and presenting alternatives and desirable solutions

Reframing—recasting hurdles, problems and options for solution in less adversarial terms, offering an integrative solution with mutual gains

Stepladder—deploying new information to enable parties to view problems from a different perspective and surmount obstacles

Unpacking—in which a problem is disaggregated or separated into its constituent parts to facilitate incremental agreement or progress

Box 4.1 (continued)

Bypass

Bypass Operation—radically redefine the context and create or use an alternative forum for negotiations to bypass political or institutional obstacles

Leap-frogging—to jump over an obstacle and take an issue or treaty to a different forum or authority for agreement

CONCLUSIONS

Recent experiences from the CTBT, Chemical Weapons Convention, NPT and Anti-Personnel Mine Ban Convention show that multilateral negotiations are conditioned not only by relative capabilities, power and interests, but by a clash of conflicting worldviews. States and diplomats clearly hold significantly different assumptions about the role and value of multilateral regime building, the character and determination of the possible solution set, and the ways in which decisions can be shaped by groups of less powerful countries and civil society.

The continuing dominance of realist assumptions in diplomatic training and among policy makers acts against the interests of constructive multilateralism. Failing to describe the contemporary context of multilateral decision-making, realism does not adequately reflect the actual choices facing states and negotiators. Similarly, the ways in which multilateral arms control is usually structured, such as the rules and procedures of the United Nations and the CD, privilege states perceived as having direct interests, through possession or control of the weapons and military practices of concern, above the security interests of other affected parties. Yet these affected parties include populations victimized or impoverished by the trading and accumulation of armaments, and states that have voluntarily renounced such weapons or practices. The current structuring of multilateral arms control continues to leave little room for actors (states *and* civil society) that advocate alternative concepts of security, based on progressive disarmament rather than arms management and differential non-proliferation.

The CD's Cold War genealogy shows through every time negotiators limit their role to tinkering with the tools of arms control and non-proliferation. Too many of the current rules, assumptions and institutional practices reflect the obsolete Cold War power structure and not the human security concerns that are more relevant for the twenty-first century. In so doing, they marginalize alternative approaches that focus on enhancing human security, more comprehensive disarmament and the transformation of power relations to address global security threats and reduce reliance on military capabilities.

Out-dated realist assumptions also foster adversarial interactions and suppress important factors like players' perceptions, uncertainty, learning and change. Though some adaptation of multilateral institutions and rules has already occurred, largely driven by civil society campaigning, more needs to be done institutionally to maximize the opportunities for participatory regime building.

Notes

1 This paper is derived from Dr. Johnson's PhD thesis for the London School of Economics and Political Science, entitled "The 1996 Comprehensive Test Ban Treaty: A Study in Post Cold War Multilateral Arms Control Negotiations".

2 Marie-Claude Smouts, "Multilateralism from Below: a Prerequisite for Global Governance", in Michael Schechter (ed.), *Future Multilateralism: The Political and Social Framework*, United Nations University Press, 1999, p. 294.

3 UN General Assembly, *Final Document of the First Special Session of the General Assembly on Disarmament*, document A/S-10/4, 1 July 1978, paragraph 28.

4 Jayantha Dhanapala, then UN Under-Secretary General for Disarmament, "Multilateralism and the Future of the Global Nuclear Nonproliferation Regime", *The Nonproliferation Review*, vol. 8, no. 3, The Center for Nonproliferation Studies, 2001, pp. 99–100.

5 The terms bilateral, trilateral, and plurilateral denote negotiations among a certain number of parties with direct interests, usually possession of the arms under consideration. Multilateral negotiations

often involve states that do not possess the relevant weapon in addition to those that do.

6 Stephen Krasner defined regimes more specifically as "sets of implicit or explicit principles, norms, rules, and decision-making procedures around which actors' expectations converge in a given area of international relations". See Stephen Krasner (ed.), *International Regimes*, Cornell University Press, 1983.

7 Neoliberal institutionalism centred on a group of American analysts and policy shapers, such as Joseph Nye, Robert Keohane and John Ruggie. For the purposes of this paper, the theoretical distinctions between traditional realism, neorealism, neoliberal institutionalism and the form of synthesized "structural realism" put forward by Buzan, Jones and Little, though important in other contexts, are not as relevant as the broad assumptions associated with the schools of realism and neoliberalism respectively.

8 Where rationalist regime theory derived from the realist and neoliberal schools of thought, the new multilateralism advanced by Cox and Schechter is associated with the reflectivist approach of the "third paradigm" of late twentieth century and early twenty-first century international relations theory, variously identified as structuralism, neomarxism or globalism. The term "new multilateralism" is reputed to have been coined during discussions in the "Multilateralism and the United Nations System" programme under the auspices of Cox during the late 1990s.

9 The realist state is deemed to be a coherent unit, capable of applying rational calculations to the available information to secure its survival, pursue its interests and increase its relative power. While it is recognized that a variety of domestic actors contribute towards determining a state's policies, realists consider that a centralized political authority unifies these disparate influences, so that "the state" represents the collective will and interests of its citizens. Kenneth Waltz, *Theory of International Politics*, McGraw-Hill, 1979, pp. 90–93 and 102–128.

10 Arthur Stein, "Coordination and Collaboration: Regimes in an Anarchic World", in Stephen Krasner (ed.), *International Regimes*, Cornell University Press, 1983, p. 132. Note, realist and neoliberal theories hold that the international system is "anarchic" because there is no overarching political authority.

11 Waltz dismissed many of the influences on state policy and international decision-making as extraneous interferences. Kenneth Waltz, *Theory of International Politics*, McGraw-Hill, 1979, p. 91.

12 See, for instance, John Borrie, "Cooperation and Defection in the Conference on Disarmament", *Disarmament Diplomacy*, no. 82, Acronym Institute, 2006, pp. 34–40.

13 This is assumed particularly in the high politics of security, war and peace. Hegemonic stability theory, developed around Western objectives of a liberal, free trade economic order under US leadership, held that international order depends on a dominant state prepared, in effect, to shoulder the burden of responsibility. The classical statements of hegemonic stability theory are found in the writings of Robert Gilpin and Charles Kindleberger. See, for example, Robert Gilpin, *War and Change in World Politics*, Cambridge University Press, 1981.

14 The so-called liberal realists, also known as the English School, are an exception. See Martin Wright, *Power Politics*, 2nd ed., Leicester University Press, 1978; and Hedley Bull, *The Anarchical Society: A Study of Order in World Politics*, Macmillan, 1977.

15 Robert Keohane and Joseph Nye (eds), *Transnational Relations and World Politics*, Harvard University Press, 1972. Robert Keohane and Joseph Nye, *Power and Interdependence*, 3rd ed., Longman, 2001.

16 Joseph Grieco, "Anarchy and the Limits of Cooperation: A Realist Critique of the Newest Liberal Institutionalism", *International Organization*, vol. 42, no. 3, Cambridge University Press, 1988, p. 486.

17 Robert Keohane, *After Hegemony: Cooperation and Discord in the World Political Economy*, Princeton University Press, 1984, chps 5–6. How the artificial concept of the unified state relates to government authority is a problem for realists, and the oft-found disconnection between state interests and a state's government poses difficulties for realist policy approaches in multilateralism. See Chris Brown, *Understanding International Relations*, Macmillan, 1997, pp. 33–35.

18 The quotation, attributed to a paper given by Robert Cox to the United Nations University, August 17, 1993, is from the preface of Michael Schechter (ed.), *Innovation in Multilateralism*, United Nations University Press, 1999, p. ix.

19 Two of the constitutive principles of the United Nations are that membership is open to all "peace-loving states" and that the organization is based on the "principle of the sovereign equality of all

its members". See United Nations, *Charter of the United Nations*, articles 2 and 4.

20 Paul Taylor, "The United Nations and International Order", in John Baylis and Steve Smith (eds), *The Globalization of World Politics*, 2nd ed., Oxford University Press, 2001, p. 338.

21 Andrew Moravcsik, "Taking Preferences Seriously: A Liberal Theory of International Politics", in Paul Viotti and Mark Kauppi, *International Relations Theory*, 3rd ed., Allyn and Bacon, 1987, p. 250.

22 An early, groundbreaking analysis that challenged notions of rationality in foreign policy decision-making was Graham Allison, *Essence of Decision: Explaining the Cuban Missile Crisis*, Little, Brown and Co., 1971. For an updated analysis, see also Graham Allison with Philip Zelikow, *Essence of Decision: Explaining the Cuban Missile Crisis*, 2nd ed., Longman, 1999.

23 While many analysts have recognized that decision makers must be concerned simultaneously with domestic and international pressures, Robert Putnam's early theorizing about the domestic–international dynamic, which he characterized as a two-level game, was particularly influential. Robert Putnam, "Diplomacy and Domestic Politics: The Logic of Two-level Games", *International Organization*, vol. 42, no. 3, Cambridge University Press, 1988, pp. 427–460. For an alternative approach, see Jeffrey Knopf, "Beyond Two-level Games: Domestic–International Interaction in the Intermediate-range Nuclear Forces Negotiation", *International Organization*, vol. 47, no. 4, Cambridge University Press, 1993, pp. 599–628.

24 On alternatives to accepting agreement and no-agreement dilemmas, see James Sebenius, "Challenging Conventional Explanations of International Cooperation: Negotiation Analysis and the Case of Epistemic Communities", in Peter Haas, *Knowledge, Power, and International Policy Coordination*, University of South Carolina Press, 1992, pp. 323–365.

25 *Treaty Banning Nuclear Weapon Tests in the Atmosphere, Outer Space and Under Water.*

26 These were ENDC/192 (US Draft) and ENDC/193 (Soviet draft). These superseded US–Soviet drafts from 1965.

27 The 1997 Anti-Personnel Mine Ban Convention enshrined a multilateral (but not yet universal) ban on this weapon type. The "Ottawa process" that led to the treaty was celebrated for its groundbreaking "partnership" between civil society and governmental actors, a fact acknowledged when the Nobel Prize was awarded to Jody

Williams and the International Campaign to Ban Landmines (ICBL) in 1997. See Maxwell Cameron, Robert Lawson and Brian Tomlin (eds), *To Walk Without Fear: The Global Movement to Ban Landmines,* Oxford University Press, 1998; Kenneth Anderson, "The Ottawa Convention Banning Landmines, the Role of International Non-Governmental Organizations and the Idea of International Civil Society", *European Journal of International Affairs*, vol. 2, no. 1, European Centre of International Affairs, 2000; and John Borrie and Vanessa Martin Randin (eds), *Disarmament as Humanitarian Action: From Perspective to Practice*, UNIDIR, 2006.

28 Richard Walton and Robert McKersie are credited with coining and defining the term "integrative bargaining", in Richard Walton and Robert McKersie, *A Behavioral Theory of Labour Negotiations,* McGraw-Hill, 1965. On integrative bargaining and mixed motive games, see Thomas Schelling, *The Strategy of Conflict*, Harvard University Press, 1960.

29 James Sebenius, "Challenging Conventional Explanations of International Cooperation: Negotiation Analysis and the Case of Epistemic Communities", in Peter Haas, *Knowledge, Power, and International Policy Coordination*, University of South Carolina Press, 1992, pp. 346–365.

30 Hans Morgenthau, *Politics Among Nations: The Struggle for Power and Peace*, revised by Kenneth Thompson, brief ed., McGraw-Hill, 1993.

31 Kenneth Waltz, *Theory of International Politics*, McGraw-Hill, 1979.

32 Buzan calls this "interaction capacity", which he defined as having systemic importance as an "absolute quality of technological and societal capabilities across the system". See his analysis of attributive, relational and control power in Barry Buzan, "Beyond Neorealism: Interaction Capacity", in Barry Buzan, Charles Jones, and Richard Little, *The Logic of Anarchy: Neorealism to Structural Realism*, Columbia University Press, 1993, pp. 66–80.

33 The distinction between power of—sometimes used interchangeably with the "power within", understood as the empowered capability to *do*—and power over, related with traditional concepts of force and coercion, became a key element in feminist analyses of militarism and patriarchy.

34 The UN's institutional concept of NGO includes private businesses, such as the pharmaceutical industries, and their industrial associations, as well as the non-profit "businesses" or "charities" more usually associated with the term. The concept of civil society used in this

chapter excludes non-state actors who seek political change through violent and militarized means, such as guerrillas, terrorists, and freedom fighters (recognizing that such terms depend on political perspective for their meaning and attributes). This distinction is not based simply on a value judgement, but has important conceptual underpinnings. In particular, such non-state actors' use of violence is the antithesis of common understandings of "civil", epitomized by the usual antonymic juxtaposition of civil and military and the historical association of civil society with "the cultivation of a set of social and political virtues" such as "civility, trust [and] tolerance". Accepting as part of the operative definition of civil society the exclusion of militarized violence as a strategy or tactic does not entail any normative assumptions of a positive, democratizing and progressive role for civil society, in opposition to the state. Such a role may be desirable, but it is not intrinsic to the definition of civil society. See also Mustapha Kamal Pasha and David Blaney, "Elusive Paradise: The Promise and Peril of Global Civil Society", *Alternatives*, vol. 23, no. 4, 1998, pp. 417–450.

35 Ann Florini (ed.), *The Third Force: The Rise of Transnational Civil Society,* Japan Center for International Exchange and Carnegie Endowment for International Peace, 2000, p. 3.

36 Haas defined an epistemic community as "a network of professionals with recognised expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge within that domain or issue-area". Peter Haas, *Knowledge, Power, and International Policy Coordination*, University of South Carolina Press, 1992, p. 3.

37 Richard Price, "Reversing the Gun Sights: Transnational Civil Society Targets Landmines", *International Organization*, vol. 53, no. 3, Cambridge University Press, 1998, pp. 613–644; Ethan Nadelmann, "Global Prohibition Regimes: The Evolution of Norms in International Society", *International Organization*, vol. 44, no. 4, 1990, Cambridge University Press, pp. 479–526; and Emanuel Adler, "The Emergence of Cooperation: National Epistemic Communities and the International Evolution of the Idea of Nuclear Arms Control", in Peter Haas, *Knowledge, Power, and International Policy Coordination*, University of South Carolina Press, 1992.

38 See, for example, the role of the US firearms lobby in Keith Krause, "Multilateral Diplomacy, Norm Building, and UN Conferences: The

Case of Small Arms and Light Weapons", *Global Governance*, vol. 8, no. 2, Lynne Rienner, 2002, p. 258.

39 Though the "epistemic communities" intersect with civil society, some effective epistemic actors may be found in government departments or laboratories. For example, Adler noted that, with regard to nuclear arms control during the 1950s and 1960s: "[T]hey were one community, yet they were everywhere: dispersed among government bureaux, research organisations and laboratories, profit and non-profit organisations, university research centres, and think-tanks". Emanuel Adler, "The Emergence of Cooperation: National Epistemic Communities and the International Evolution of the Idea of Nuclear Arms Control", in Peter Haas, *Knowledge, Power, and International Policy Coordination*, University of South Carolina Press, 1992, p. 112.

40 The list of obstructive tactics has drawn on the perceptions of Johan Kaufmann, in his analysis of multilateralism in the North–South context. Johan Kaufmann, *The Diplomacy of International Relations: Selected Writings*, Kluwer Law International, 1998, pp. 11–30. While retaining some of Kaufmann's categories and names of negotiating tactics, I have greatly expanded the list as a result of my observations of multilateral arms control negotiations during the past 15 years.

41 Likened to a "two-faced" approach, the faking tactic was given the name "Black Peter" by Kaufmann, who described it as: "I do not like this proposal, but I tell people I support it, expecting that country X which is against it, will be left with the stigma of having been responsible for its rejection." Johan Kaufmann, *The Diplomacy of International Relations: Selected Writings*, Kluwer Law International, 1998, p. 22. The concept of faking that I have employed is a bit broader than Kaufmann's definition of Black Peter.

42 Dean Pruitt calls this concession-trading tactic "logrolling", a term adopted by Hampson. However, shifting a logjam can sometimes be accomplished by the removal of just one strategically placed log, which is a rather different matter than trading the removal of obstructions in more than one place, though either method may eventually get the logs rolling. On logrolling and bridging tactics, see Dean Pruitt, *Negotiation Behaviour*, Academic Press, 1981, pp. 153–155; and Fen Hampson, *Multilateral Negotiations: Lessons from Arms Control, Trade, and the Environment*, The Johns Hopkins University Press, 1995, pp. 40–43.

[43] See Rebecca Johnson, *Indefinite Extension of the Non-Proliferation Treaty: Risks and Reckonings,* Acronym Institute, Acronym Report no. 7, 1995.

[44] Rebecca Johnson, "The 2000 NPT Review Conference: a Delicate, Hard-Won Compromise", *Disarmament Diplomacy*, no. 46, Acronym Institute, 2000. The New Agenda Coalition comprised Brazil, Egypt, Ireland, Mexico, New Zealand, South Africa and Sweden.

[45] This is similar to what Fen Hampson called "issue decomposition and sequencing". See Fen Hampson, *Multilateral Negotiations: Lessons from Arms Control, Trade, and the Environment*, The Johns Hopkins University Press, 1995, especially introduction and conclusion.

CHAPTER 5

COOPERATION AND DEFECTION IN THE CONFERENCE ON DISARMAMENT

John Borrie[1]

SUMMARY

On the face of it, that the strong dominate the weak would seem depressingly true in multilateral disarmament and arms control, as well as a recipe for continued deadlock in institutions like the Conference on Disarmament. Or is it? And, if it is, does it have to be that way? Drawing on game theory and findings about the emergence of cooperation, this chapter shows that over time clusters of cooperators (such as states and their civil society partners) can, through their concerted and self-interested action, affect the behaviour even of the most powerful by modifying the pay-off structures in which cooperation and defection occur.

INTRODUCTION

> *"We recommend that you should try to get what it is possible for you to get … since you know as well as we do that … in fact the strong do what they have the power to do and the weak accept what they have to accept."*[2]

These cold and rational words have a modern sound. In fact, they are almost 2,500 years old—the advice of the militarily strong Athenians to the weaker Melians during the Peloponnesian War, according to Thucydides. The island of Melos found itself an unwilling pawn in a vicious struggle between the Athenian and Spartan alliances. The leaders of the powerful Athenian force arriving on Melos's doorstep offered a simple choice: submit to being conquered or be destroyed. The Athenians refused to discuss either the justice of their demands or any substantive argument by the

Melians. Choosing to resist, Melos was annihilated and its survivors enslaved.

There are echoes of the Melians' unenviable situation in some modern day scenarios in international relations, in which problems of conflict and cooperation dictate that "you're either with us or against us".[3] The stark message apparently illustrated by the Melian dialogue is that little guys come last: "the strong do what they have the power to do and the weak accept what they have to accept". This was the lesson drawn by early game theorists and Cold War warriors like the Hungarian-born American mathematician John von Neumann, who was instrumental in the build-up of the United States' nuclear arsenal against the Soviets in the late 1940s and 1950s. Von Neumann was fond of quoting the Melian Dialogue verbatim as a warning against the dangers of the nation appearing weak.[4] Such views have tinted the worldview of certain politicians and military strategists ever since, and have been taught as conventional wisdom to many future diplomats at school and university.

On the face of it, that the strong dominate the weak would seem depressingly true in multilateral disarmament and arms control, as illustrated in the Conference on Disarmament (CD) in recent years. Or is it? And, if it is, does it have to be that way?

DEADLOCK AND ITS DISCONTENTS

International relations can be viewed as essentially theoretical problems of cooperation played out in reality among states with different levels of interest, power and resources. In some multilateral contexts, such as the CD, structural or institutional factors constrain the ways in which cooperation can develop. They are all-or-nothing affairs, in which a single "defection" can prevent agreement even on beginning work.

In the CD's case its procedural rules, strengthened through accumulation of historical precedent, demand consensus as the threshold for formal decision-making.[5] The dominant Cold War powers insisted on this as a safeguard against being out-voted, since vital matters of national security and sovereignty may, in principle, be addressed in the CD. In practice, the CD's manner of work hands a blocking power to a minority of countries to say "no" to cooperation, for whatever reason, regardless of the interests of

many others who might be affected. Cases in point: almost all of the CD's 65 member countries agree that a new international norm is necessary to halt production of fissile materials usable in nuclear weapons, and that progress is urgently needed toward nuclear disarmament. In the post-11 September 2001 world such objectives ought to be beyond dispute—no responsible government wants terrorists to acquire nuclear weapons. Moreover, the growing global stockpile of fissile material (not all of it well secured) and retention of nuclear weapons (many of them ageing) in the arsenals of nuclear-armed countries is an obvious invitation to disaster. Yet the CD has not negotiated any new agreements for almost a decade.

The Conference's efforts to resume work have been in vain because two "key" countries, China and the United States, will not cooperate in joining consensus on a work programme (there may be others, like Pakistan and Israel, hiding behind them.) After initial reluctance, China said it supports negotiations on a fissile material treaty, as does the United States, although lately Washington has wavered, ostensibly over the question of verification. Underlying China's concern about US missile defence plans, however, Beijing insists that alongside fissile material negotiations, the CD should also work towards an agreement to prevent an arms race in outer space. No deal, says the United States.

These mutually exclusive Chinese and American positions have, since 1998, prevented the consensus the CD needs to resume work. As a result, the body has been made an international laughing stock. This deterioration in credibility hurts its less powerful member countries more than it appears to bother China and the United States, who each have UN Security Council seats and other ways, including military muscle, with which to exert their influence on the global scene.

The CD's situation fits the textbook description of deadlock well. In the simplest terms, deadlock occurs when two parties fail to cooperate because neither really wants to—they just want the other party to compromise. In game theory, deadlock is described thus:

	Cooperate	**Defect**
Cooperate	1,1	0,3
Defect	3,0	2,2

In this table, the values from 0 to 3 represent utility, in which 0 represents the least utility (or worst outcome) for a particular actor. In two-party deadlock, each quickly surmises that she should defect because this has the highest utility value (3) for her. Mutual defection turns out to have the second-best outcome (2,2). Mutual cooperation in this analysis earns both parties a rather low utility value (1,1). The worst unilateral outcome is to cooperate when the other party defects—she earns the maximum 3 points, and you earn none.

Of course, global security is more than a two-player game. But for all intents and purposes, the 65-country CD has *become* a two-player game because only China and the United States can change the deadlock. If both of them were to agree, pressure would quickly be exerted on any other (less powerful) states that might be reluctant, as happened in summer 1998 when the CD briefly achieved a work programme (its work year concluded, however, before it could commence any negotiations). As a consequence, the CD has been reduced to serving the interests solely of those two parties content with a situation of deadlock, rather than most of the rest of its members.

Multilateral diplomats and the policy makers of many CD member states have become highly frustrated at their impotence. The CD's long impasse confronts them with the paradox that even as they assert the importance of multilateralism, they are themselves infantilized by the process and procedures of the CD. For example, there is common agreement that certain nuclear dangers are real, and loom increasingly large. It is also generally understood—at least intellectually—that a nuclear incident, whether a terrorist attack, an accidental intercontinental ballistic missile launch or, indeed, the dangerous instability inherent in a spread of nuclear weapons to more countries, would have terrible human consequences, in which the world's politically progressive non-nuclear armed states and its poorer countries (by no means mutually exclusive groups) will be especially vulnerable. Yet, like children trapped in the back of the family car while their parents argue, the attitude of many seems to be to shrug and whisper, what can *we* do? We do not have any power, do we?

This assumption of powerlessness needs to be questioned, especially by countries that have historically been active in efforts to work together in like-minded fashion at the multilateral level. These include many of the Europeans, Canada, Japan, Australia and leading countries in the

developing world such as Brazil, Mexico and South Africa. If the issues the CD is tasked with *are* so important (and that is the commonly held view), then why is more not being done? Do the defectors—China and the United States—really hold all of the cards? As long as agreeing the CD's work programme remains a two-player game, it appears that they do. This is evidenced by various attempts over the years to edge the CD into agreeing a work programme, which have all been seen off.[6]

One obvious alternative would be to change the CD's rules to permit certain decisions to be made without consensus. But this appears fraught with difficulty because any change of the rules of procedure would likely require the agreement of all CD members first. Why would defectors support that?

An important feature of the analysis that follows is that negotiations unfold over time rather than being single snapshots: uncertainty about the future—the length of its "shadow"—is individually subjective. Each party may place different values on the benefits achieved through cooperation versus defection and, consequently, behave differently (cooperation should not be confused with harmony, and is theoretically assumed to be consistent over time for different parties pursuing their interests). Ultimately it is the shadow of the future that is a major driver in any iterated process of decision-making— that is, in which interactions are not one-off, those involved can recall the outcomes of preceding encounters and the likelihood or number of further encounters is indefinite. Of course, the way in which we perceive the shadow of the future may lead us to reject cooperation if we feel we may lose out from it. Conversely, uncertainty about the future is often compelling in real life in getting people and their countries to cooperate, and is thus a powerful basis for arms control. We may be prepared to accept the costs of cooperation because the alternatives—nuclear war, pandemic disease or terror attack, for instance—are worse prospects.

Unhappily, the shadow of the future has failed to encourage progress in the CD. To understand why, let us briefly consider in the most generic terms how cooperation evolves and then apply that understanding to reviewing the CD's predicament.

IT'S ALL OR NOTHING

Many problems in life, including challenges in diplomacy, boil down to the fact that you do not know what the other party, or parties, intend to do. This is classically illustrated by the Prisoner's Dilemma, a hypothetical two-player form of the problem, in which the police arrest two suspects and lock them in different interrogation cells. Each is told that if she implicates the other (that is, defects) she will be set free (3 points), while the other will receive a harsh punishment (0 points), the "sucker's pay-off". If neither talks (cooperation) then both suspects will receive a light sentence for a lesser infraction (2 points), which is better than if they inform on each other, in which case both will get the heavy sentence according to the crime (1 point each). The dilemma is that both suspects realize—rationally—they should defect. But that would make them worse off than if they cooperated.

The utility pay-off structure of the Prisoner's Dilemma looks like this:

	B cooperates	**B defects**
A cooperates	2,2	0,3
A defects	3,0	1,1

As can be seen, this resembles the utility structure for deadlock, except that mutual cooperation appears more advantageous than mutual defection. Of course, with at least 65 parties, the CD is not a two-person dilemma but a much more complex *n*-person game, which hinges on many simultaneous interactions. For the purposes of illustrating the conflict between self-interest and the common good in the CD, however, it is not necessary to reflect that level of complexity here.

Instead, we can note that the countries that are ready and willing to get to work in the CD find themselves in a situation not unlike the Prisoner's Dilemma. On the face of it, it would be in all of their interests to cooperate. But, as in the previous example looking at China and the United States, the CD's pay-off structure presents an obstacle. Put yourself in a cooperator's shoes: the worst case for you would be if you called for work to commence outside the CD, say on fissile material negotiations, and not enough others were prepared to reciprocate (A cooperates, B defects).

You would be left with the sucker's pay-off, perhaps in terms of the financial costs and loss of reputation and influence involved in a failure (0 points). You might make the atmosphere in the CD even worse (or at least be accused of doing so). And, you would likely face the ire of defectors, such as the United States and China, who might wish to punish you in order to deter others from threatening their position with further initiatives. In the face of uncertainty about the intentions or trustworthiness of others, it is more tempting to defect—in this case to stick with the current status quo. The worst you can do would leave you at 1 point, although it would not be as good as if everyone cooperated (2 points). Perhaps this is why no proposals have been offered by CD members for parallel or informal negotiating to begin among those who could already agree to a work programme.

In the CD, how can one go about assessing the utility of each strategy? It is here that perceptions play such an important role, and where they are askew in the CD in at least three ways:

- the expectation that consensus (especially the cooperation of key states) is needed before cooperation entailing pay-offs for cooperators can occur;
- the perception that the CD has inherent value in the long run, beyond facilitating cooperative exchange between participants; and
- the implicit assumption that pay-off structures cannot be altered.

Is consensus necessary for cooperation?

The Prisoner's Dilemma may not appear as hopeless if we follow what happens over time, rather than regarding defection or cooperation as a single snapshot. From the 1970s, there was a surge of interest in many research disciplines—from biology to economics—about the conditions under which cooperation would emerge in a world of egoists without central control. For political scientists with an interest in arms control like Robert Axelrod, the question was not purely a theoretical problem—it occurred to him that:

> nations interact without central control, and therefore the conclusions about the requirements for the emergence of cooperation have empirical relevance to many central issues of international politics.

> Examples include many varieties of the security dilemma such as arms competition and its obverse, disarmament.[7]

Axelrod wanted to find out what would happen if the Prisoner's Dilemma's *iterated*, with each of the prisoners able to remember what the other did the preceding turn. To examine these questions, Axelrod ran computer-based tournaments in which players using various strategies were invited to compete. The strategy that consistently won the Prisoner's Dilemma tournament was called Tit-for-Tat, submitted by a game theorist named Anatol Rapoport.[8]

A Tit-for-Tat strategy plays by cooperating on the first move, and then making the same choice thereafter that the other player did on the previous move. Axelrod observed that this strategy does well in beating a wide variety of others—that is, obtaining a greater pay-off in utility—provided that there is a sufficiently large chance that the same players will meet again.[9]

Things really got interesting when Axelrod and others constructed computer models that would allow more successful strategies in a population—Tit-for-Tat being one example of a strategy—to evolve at the expense of less successful ones over time (in fact, Axelrod dubbed it "the evolutionary approach"). What this means in basic terms is best described in Axelrod's own words:

> This approach imagines the existence of a whole population of individuals employing a certain strategy, *B*, and a single mutant individual employing another strategy. Strategy *A* is said to *invade* strategy *B* if $V(A/B) > V(B/B)$ where $V(A/B)$ is the expected payoff an *A* gets when playing a *B*, and $V(B/B)$ is the expected payoff a *B* gets when playing another *B*. Since the *B*'s are interacting virtually entirely with other *B*'s, the concept of invasion is equivalent to the single mutant individual being able to do better than the population average.[10]

Tit-for-Tat is known as a *collectively stable strategy*. It can get started within a small cluster, spread in a population, and then resist invasion from strategies that refuse to cooperate because it is more successful and, for that reason, expands at their expense. Another feature is that Tit-for-Tat can be characterized as a "nice" strategy. Even though it retaliates for defection, it always cooperates on the first move, and does not defect thereafter unless

provoked by defection.[11] In contrast, a "mean" strategy unconditionally defects.

An important discovery was that the length of the game is key to this strategy's success. Tit-for-Tat only avoids being invaded by other strategies (that is, those yielding higher utility) if the game is likely to last long enough for retaliation to counteract the temptation to pursue a "mean" strategy (that is, to defect). This reflects the shadow of the future, mentioned above.

A second insight Axelrod observed was that a:

> world of "meanies" can resist invasion by anyone using any other strategy—provided that the newcomers arrive one at a time. The problem, of course, is that a single newcomer in such a mean world has no one who will reciprocate any cooperation. If the newcomers arrive in small clusters, however, they will have a chance to thrive.[12]

Third, Axelrod showed that players using nice Tit-for-Tat strategies that never defect first are better than others at protecting themselves from invasion by competing strategies. They do this by only defecting against those that defect against them. It must be recalled that a population of individuals that always defects can withstand invasion by any strategy provided players using other strategies come one at a time. By comparison, Axelrod notes that:

> with nice rules the situation is different. If a nice rule can resist invasion by other rules coming one at a time, then it can resist invasion by clusters, no matter how large. So nice rules can protect themselves in a way that [always defecting] cannot.[13]

That cooperation can evolve in a broader world of defectors is an important theoretical insight. Moreover, it reflects both common sense and historical experience, and can be observed in a wide range of phenomena studied by many disciplines.[14] Common to virtually all successes in multilateral disarmament and arms control—and further afield—have been "like-minded" groups of negotiators and the countries they represent generating momentum through proactive mutual cooperation. Examples include: the core-group in the negotiations on anti-personnel landmines that resulted in the 1997 Anti-Personnel Mine Ban Convention, and the emergence of the

seven-country New Agenda Coalition that helped to broker a success at the 2000 Review Conference of the Nuclear Non-Proliferation Treaty.[15]

The CD's inherent value

International affairs meet the definition quite well of a world of egoists (read: governments) without central authority. Ideally, in such environments, entities like the United Nations or the CD "do not substitute for reciprocity; rather, they reinforce and institutionalise it. Regimes incorporating the norm of reciprocity delegitimize defection and thereby make it more costly."[16] Also, such institutions provide information to participants about others' behaviour and intentions, act as forums to develop and maintain reputations (which in turn becomes incorporated into participants' rules-of-thumb about each others' actions) and even apportion responsibility for rule enforcement.

Is this the case in the CD? Well, no. Underlying US and Chinese differences, lack of progress in the CD occurs because of the context in which negotiating interaction takes place. In the language of game theory: "pay-off structures in the strategic setting may be so malign that Tit-For-Tat cannot work."[17] At time of writing, the pay-off structure in the CD favours defection and not cooperation. It has resisted modification because would-be cooperators perceive that the costs of trying to change the pay-off structure (through a change to the consensus rule, for example, or by taking work outside) are too high.

Many decision makers do recognize that some aspects of how the CD is structured make cooperation difficult. Few predicted that the CD's deadlock would last this long, however, or that the CD would not only conspicuously fail to enhance international security on achieving the priorities in its work programme, it would end up hindering the emergence of other efforts. Defence of the status quo by would-be cooperators boils down to claiming that the obstacles to cooperation created by the CD's current pay-off structure are outweighed in the long run by its other benefits as an institution. This sentimental view belies the reality that the CD's pay-off structure actually achieves the opposite: it persistently obstructs cooperation developing for work on the issues in the work programme.

The real issue is under what conditions international institutions like the CD—as recognized patterns of practice around which expectations

converge—facilitate significant amounts of cooperation for a period of time. Criteria include whether an institution:

- provides incentives for cooperation so that cooperation is rewarded over the long run, and defection punished;
- monitors behaviour so that cooperators and defectors can be identified;
- focuses rewards on cooperators and retaliation on defectors; and
- links issues with one another in productive rather than self-defeating ways.

The CD has not met any of these criteria for some time.

Can pay-off structures be altered?

Of course, countries that count themselves as multilateralist by inclination are loath to set the CD aside. It seems a retrograde thing to do. Indeed, the CD meets in the Council Chamber of the Palais des Nations in Geneva—the very seat of the defunct League of Nations and a continual reminder of an era in which multilateral institutions were abandoned along the road to the Second World War.

As has been demonstrated, however, the CD's pay-off structure continues to work *against* would-be cooperators' interests. It cannot be altered without Chinese or US flexibility, which they calculate not to be in their interests. But just because the CD's current pay-off structure cannot be altered does not mean that progress on the items in its work programme cannot be made. When rational actors are not satisfied with simply selecting strategies based on the situation in which they find themselves, the rational thing to do is to change the context itself.

Significantly, there have been efforts toward doing just that. In 2005, Mexico and five other states circulated a draft text for a possible resolution during the UN First Committee in New York which would have established ad hoc negotiating bodies in Geneva on the basis of the CD's blocked (but substantially agreed) work programme, specifically: fissile material negotiations, nuclear disarmament, negative security assurances and preventing an arms race in outer space. Built in to this initiative was the requirement that these issues would be returned to the CD if it could achieve consensus on a work programme.[18] However, the five nuclear

weapon states closed ranks and put pressure on the initiating states to scuttle the exercise, and on any would-be supporters not to join. Like previous attempts to alter the CD's deadlock in the CD itself, the UN General Assembly draft resolution was seen off before being put to a decision.

Attempting to get the CD working by means of a First Committee resolution appears to have had a positive effect (even if thwarted) in that, in 2006, CD discussions became more substantive. While a work programme continues to elude the CD, hope has re-emerged among some (mainly Western) countries that negotiations on a fissile material agreement might soon be in the offing. If this fails to come to pass, perhaps a more radical solution is necessary. Rather than pursuing priority items in the CD's work programme within existing institutions, such cooperation would be more robust if undertaken as freestanding exercises. Not only would this avoid the "tyranny of consensus", as Nobel Peace Prize Laureate Jody Williams recently described the CD's problems:[19] free-standing negotiations would not be burdened with the legacy of obsolete UN group structures that constrain cooperation by allowing defectors to bully would-be cooperators behind closed doors. For example, the present practice whereby CD presidents consult individually and privately with states arguably advantages defectors because it allows them to exercise a wait-and-see policy, while serving to deny would-be cooperators information that could help them cluster effectively.

An obvious hesitation is this: what will happen if so-called key countries stand outside freestanding negotiations, or refuse to join them once they have been agreed? Will not cooperators be left with the sucker's pay-off? There are several answers to this question. First, international security priorities like fissile material negotiations are not necessarily zero-sum. While it is iniquitous that nuclear-armed countries should get away initially without the constraints on state behaviour that a new norm would entail, the production of fissile material must be halted in the interests of non-proliferation. It is in the interests of the international community to prevent a cascade of horizontal nuclear proliferation whether nuclear weapon possessing states participate in negotiations or not.

Second, it is crucial to recognize that the evolution of cooperation is *dynamic*. By cooperating among themselves, would-be cooperators—actors who see benefit over time of a cooperative strategy—affect pay-offs

globally, including for defectors. A real-world example of this is the Mine Ban Convention, mentioned above. In just nine years this treaty has attracted more than 150 States Parties—a staggering achievement considering that momentum behind it was generated by a small group of medium-sized countries and transnational civil society against the opposition of key states like China, India, Russia and the United States. One important reason for its still-growing success is that many countries that initially defected for narrow national reasons have come to see the benefits of belonging to a global ban on anti-personnel mines and so joined the ranks of the cooperators. While it is true that the states named above are still outside the treaty, the significance of the mine ban regime can clearly be seen in the fact that anti-personnel mine production, transfer and use have largely dried up.[20]

What this shows is that a cluster of cooperators has been able to stigmatize a weapon system to such a great extent that they have clearly affected the behaviour of defectors, even powerful ones. An added benefit is that while these so-called key countries stand outside the treaty, they have less opportunity to suppress the enthusiasm of the cooperators driving the Mine Ban Treaty—or to undermine their work.

Clusters of cooperators are not only a landmine-related phenomenon. For instance, initiatives are occurring at the local and state level in the United States to implement actions consistent with the 1997 Kyoto Protocol's obligations to reduce greenhouse gas emissions, despite the federal government not joining the multilateral agreement, which entered into force internationally in February 2005.[21] Mayors of 279 US cities, as of time of writing, have already signed on to this agreement as it becomes clearer to people at the local level that "Climate change is on people's minds, and they're asking for action."[22]

A third, related, point is that, historically, defectors actually prefer to be inside negotiating processes, even if they have little intention of cooperating over the long run. All of the major military powers participated in negotiations in Oslo on banning anti-personnel mines, even though this was a freestanding exercise outside UN structures, for the simple reason that they wished to influence its course and outcome.

The same has been true of almost any disarmament negotiation in recent decades, including the Comprehensive Nuclear Test-Ban Treaty (CTBT).

Indeed, the CTBT's failure to enter into force suggests an important lesson for multilateral negotiations that is rather different from the usual explanations. Instead of worrying that so-called key states might not participate, a more robust approach to negotiations by a sufficiently strong cluster of cooperators would have been better placed to develop worthwhile norms free of ruinous provisions such as the CTBT's entry-into-force formula.[23] Clusters of cooperators can create pressure on defectors, which over time compels them to change strategy and cooperate or face isolation.

Lastly, the development of cooperation is organic and iterative. Expecting consensus to be the starting-point for cooperation, rather than a possible end-state, is at odds with how we understand cooperation to evolve in a wide range of real-world environments. Instead, reciprocity fuels cooperation, because it enables the building of trust, something that has little chance to flourish at present in the CD's stagnant negotiating environment. Moreover, because iterations may be low in frequency due to the cautious nature and tempo of multilateral negotiating activity, we need to take a long view. France, for instance, did not join the 1972 Biological and Toxin Weapons Convention (BTWC) until 1984, but this did not stop that treaty constituting an international norm constraining its behaviour well before that.

RECOGNIZING INEFFICIENT EQUILIBRIA

Multilateralism should be seen as a generic means by which to achieve cooperative outcomes, and is not in itself an end. Understandably, though, multilateral diplomats and other policy makers who are intimately involved in multilateral work might be inclined to view one as synonymous with the other. The rules and structures of "playing the game" *are* of importance, and changing them or pursuing alternatives should not be treated trivially because it could make future goals more difficult to achieve. And, sometimes, cooperators do not achieve specific outcomes that necessarily benefit them, which is not an automatic reason to discard multilateral work: there is no guarantee that cooperation must always deliver benefit consistently over time or uniformly among cooperators to make it worthwhile. Yet distinguishing between ends and means in multilateral work is important because the rules and structures that have evolved in the

multilateral context are meant to have a purpose over the longer run, like any other cooperation—to achieve benefit of some kind for the cooperator.

One country that has been highly adept at using structures like the CD to prevent meaningful cooperation from developing at the same time as it has evinced frustration with the lack of perceived benefits multilateral processes have delivered to it is the United States. The tough criteria the United States has sometimes demanded be met for its cooperation with others and its willingness to be "unilateralist" or to find other configurations for achieving its security objectives have sometimes been severely criticized. Yet its concerns should be just as relevant to others, especially to smaller and individually less powerful states, as the costs of multilateral institutions and procedures can be even greater for them in real terms in proportion to their resources.

Making such assessments can be difficult to do, of course, because to a large extent our behaviour is affected by our social interactions with others, something that also holds true at the level of international relations.[24] What others think or how we anticipate they will react to our actions plays a role in shaping our perceptions of what it is in our individual best interests to do (this influence is not necessarily beneficial). Even if it were not the case, however, or imagining that—like in classical economic theory—our preferences were fixed and that we could ignore everyone else when we made decisions, their perceptions could still make us worse off. For instance, if the fear develops among other investors that the bank holding your savings will collapse, even if it is not initially in danger of doing so, there may be a run on the bank that hastens it collapse (as happened in the 1930s) and the loss of your savings, whether you were one of the fools standing in line to make a full withdrawal or not. This kind of collective behaviour, like the Prisoner's Dilemma, is what economist Thomas Schelling described as an inefficient equilibrium:

> all the situations in which equilibria achieved by unconcerted or undisciplined action are inefficient—the situations in which everybody could be better off, or some collective total could be made larger, by concerted or disciplined or organized or regulated or centralized decisions.[25]

The problem is that, as we have seen with the CD, the processes arising to achieve these decisions can themselves, over time, become institutions that

lose or alter their purpose, for instance because of evolving custom or expectation. Perversely, such institutions can end up perpetuating inefficient equilibria, especially when participants regard the value of process—the CD as "the sole negotiating forum" or the "only disarmament game in town"—over substantive ends without a clear sense of what that could mean for their interests.

CONCLUSIONS

Where does this leave us? Should the CD's situation be reason to despair? "Game theoretic" approaches, of course, have their limits. But examining the CD's deadlock through this lens dispels the illusion that the CD's deadlock is hopeless. A potential solution to that deadlock—freestanding work—would require governments to show more courage, imagination and initiative. Fuelling the courage of those genuinely concerned should be the realization that such action is consistent with their long-term interests and those of their citizens, whatever the short-term political pressures on them. Moreover, many of the perceived risks of like-minded activity may be illusory because of the dynamic effects of the evolution and clustering of cooperation.

This chapter began with a quote from Thucydides, which was grist to the mill of Cold Warriors and, more recently, to the various pundits who claim, in the post-11 September 2001 world of US President George W. Bush, that the sky is falling in on multilateral cooperation. But, when seen in context, the situation of the Athenians and Melians was relatively unusual. What was common both in the Peloponnesian War and in the world all of us live in today is that our decision-making must take into account the simultaneous and often unpredictable actions of others. Most of the time the Athenians and their Spartan enemies were constrained by the need to impress and retain their weaker allies, as well as winning over neutrals and seeing off other potential adversaries without direct conflict. The periods during the 27-year conflict when each side felt it could act without constraint, as in Melos's rough treatment, were actually rather fleeting, and usually had consequences that nullified any benefit reaped in the short run.

Life is not simply a question of the strong doing what they have the means to do and the weak accepting what they have to. Over time, the weak can, through their concerted and self-interested action, affect the behaviour

even of the most powerful by modifying the pay-off structures in which cooperation and defection occur. This is something that because of the peculiar conditions of the Cold War, many of its theoreticians failed to recognize.

Would-be cooperators in the contemporary multilateral scene need to seize the initiative and act on disarmament priorities like those in the CD's work programme if these are important to their interests and they believe they would have collective benefit. Many (most conspicuously the prime defectors themselves) may try to belittle such like-minded efforts as naïve and hopeless, but the reality is rather different. A clear sense of self-interest can be a great spur to cooperative activity. Leadership, meanwhile, is often illustrated by determination to achieve an end despite obvious difficulties, overcoming fear of the consequences of failure. Being powerful comes with useful tools to minimize these obstacles, which may be why powerful states often lead the way. They are not prerequisites, however. Less powerful cooperators can offset potential costs by virtue of their sustained cooperation and, in the process, change the rules of the game. This is what defectors fear.

If there is to be any chance of making progress on the issues trapped in the CD's deadlock, this must be done soon. Moreover, by sidelining the CD's deadlock, it may also prove to be that institution's best hope of salvation.

Notes

1 An earlier version of this chapter appeared as John Borrie, "Cooperation and Defection in the Conference on Disarmament", *Disarmament Diplomacy*, no. 82, Acronym Institute, 2006, pp. 34–40.

2 Thucydides, *History of the Peloponnesian War,* Penguin Classics, 1972, pp. 401–402.

3 In a joint news conference with French President Jacques Chirac on 6 November 2001, US President George W. Bush said, "Over time it's going to be important for nations to know that they will be held accountable for inactivity … . You're either with us or against us in the fight against terror."

4 See William Poundstone, *Prisoner's Dilemma: John von Neumann, Game Theory and the Puzzle of the Bomb*, Anchor Books, 1992, pp. 142–143.

5 Rule 18 of the CD's Rules of Procedure stipulates: "The Conference shall conduct its work and adopt its decisions by consensus" (Rules of Procedure of the Conference on Disarmament, CD/8/Rev.9, 19 December 2003).

6 For a brief account of the CD's travails and the various proposals put forward to try to overcome its deadlock, see Vanessa Martin Randin and John Borrie, "A Comparison between Arms Control and other Multilateral Negotiation Processes", in John Borrie and Vanessa Martin Randin (eds), *Alternative Approaches in Multilateral Decision Making: Disarmament as Humanitarian Action*, UNIDIR, 2005, pp. 67–129.

7 Robert Axelrod, "The Emergence of Cooperation Among Egoists", *The American Political Science Review,* vol. 75, no. 2, 1981, p. 307.

8 These tournaments are described in Robert Axelrod, *The Evolution of Cooperation*, Basic Books, 1984.

9 Axelrod described a strategy (or decision rule) as "a function from the history of the game so far into a probability of cooperation on the next move". See Robert Axelrod, "The Emergence of Cooperation Among Egoists", *The American Political Science Review,* vol. 75, no. 2, 1981, p. 308.

10 Ibid., p. 310.

11 At first, Axelrod though that Tit-for-Tat was an evolutionarily stable strategy in that it will *always* infiltrate a population and spread throughout it. But there is an instance in which it will not reproduce—a situation in which the entire population cooperates. In such a scenario, Tit-for-Tat would never get a chance to retaliate and so, for all intents and purposes, would be identical to a strategy of "always cooperate".

12 Robert Axelrod, "The Emergence of Cooperation Among Egoists", *The American Political Science Review,* vol. 75, no. 2, 1981, p. 315.

13 Ibid., p. 316.

14 For interesting introductions see Matt Ridley, *The Origins of Virtue: Human Instincts and the Evolution of Cooperation*, Penguin, 1996; and Paul Seabright, *The Company of Strangers: A Natural History of Economic Life*, Princeton University Press, 2004.

15 Vanessa Martin Randin and John Borrie, "A Comparison between Arms Control and other Multilateral Negotiation Processes", in John Borrie and Vanessa Martin Randin (eds), *Alternative Approaches in*

Multilateral Decision Making: Disarmament as Humanitarian Action, UNIDIR, 2005.

16 Robert Axelrod and Robert Keohane, "Achieving Cooperation under Anarchy: Strategies and Institutions", *World Politics,* vol. 38, no. 1, 1985, p. 250.

17 Ibid, p. 249.

18 The text of the draft resolution, co-sponsored by Brazil, Canada, Kenya, Mexico, New Zealand and Sweden, entitled *Draft Elements of an UNGA 60 First Committee Resolution—"Initiating Work on Priority Disarmament and Non-proliferation Issues"*, is available online at <www.reachingcriticalwill.org/political/1com/1com05/docs/draftelementsinitiating.pdf>.

19 Jody Williams was in the Council Chamber of the *Palais des Nations* in Geneva on 23 November 2005 when she used this phrase to describe the lack of effectiveness of some multilateral disarmament processes. A transcript of her remarks is online at <www.unidir.org>.

20 See International Campaign to Ban Landmines, *Landmine Monitor Report 2006*: *Executive Summary*, 2006.

21 For information on the Kyoto Protocol, see the United Nations Framework Convention on Climate Change website at <http://unfccc.int/essential_background/kyoto_protocol/items/2830.php>.

22 "Cities, States Aren't Waiting for U.S. Action on Climate Change", *Washington Post*, 11 August 2006. Information about the US Mayors' Climate Protection Agreement is available online at <www.ci.seattle.wa.us/mayor/climate/default.htm#what>.

23 The CTBT's most serious defect is its entry-into-force provision, which requires the accession of a list of 44 specific countries, including several persistent defectors, and was the result of late deal-making in the CTBT's negotiation. Now that the majority of these nations on this list have joined, the treaty is hostage to a minority—an outcome easily predictable when the CTBT was negotiated. The countries on the list are Algeria, Argentina, Australia, Austria, Bangladesh, Belgium, Brazil, Bulgaria, Canada, Chile, China, Colombia, Democratic People's Republic of Korea, Egypt, Finland, France, Germany, Hungary, India, Indonesia, Iran (Islamic Republic of), Israel, Italy, Japan, Mexico, Netherlands, Norway, Pakistan, Peru, Poland, Republic of Korea, Romania, Russian Federation, Slovakia, South Africa, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America, Viet Nam and Zaire.

[24] Aurélia Merçay and I also explore this in a chapter on complexity elsewhere in this volume. See Aurélia Merçay and John Borrie, "A Physics of Diplomacy? The Dynamics of Complex Social Phenomena and their Implications for Multilateral Negotiations".

[25] Thomas Schelling, *Micromotives and Macrobehaviour*, Norton, 1978, p. 225.

CHAPTER 6

ENGINEERING PROGRESS: A DIPLOMAT'S PERSPECTIVE ON MULTILATERAL DISARMAMENT

Daniël Prins*

SUMMARY

The international climate is not conducive to multilateral disarmament. But states do agree conceptually on the broad principles of collective security. The difficulties that arise in translating this understanding into useful outcomes at the working level are not only due to politics. They are for reasons that are of an organizational and perceptual nature as well. Reform and progress are not impossible—but they do require more flexibility and initiative by disarmament diplomats themselves. This chapter considers options for multilateral disarmament practitioners to make their work more productive.

INTRODUCTION

Almost half a century ago, the pioneering conflict researcher Quincy Wright concluded that the main cause of war is the difficulty in organizing the institutions of peace.[1] Multilateral disarmament efforts fall within the purview of those institutions of peace. Over the past decade, in particular, these efforts have become notoriously difficult to consolidate, as seen in the consecutive failures of international meetings of the Conference on Disarmament, the Nuclear Non-Proliferation Treaty (NPT), the United

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Nations Disarmament Commission, and the UN Programme of Action on the illicit trade in small arms. Moreover, the 2005 UN World Summit failed to agree on any issue linked to disarmament and simply omitted a chapter on this topic.[2]

There have been many views offered to explain these kinds of multilateral failure. In the uncertainties of the post-Cold War world aptly described as "new medievalism",[3] states have difficulty in agreeing on what the common challenges are, let alone the collective strategies to address them. Some states are too weak to be properly organized. Often they lack the ability to deal effectively with the consequences of sharply increased trade, transport, travel and technology. Moreover, many security threats recognize no national boundaries and have become asymmetrical—armed insurgencies and terrorism are prominent examples. According to the Report of the United Nations Secretary-General's High-level Panel on Threats, Challenges and Change:

> Differences of power, wealth and geography do determine what we perceive as the gravest threats to our survival and well-being. Differences of focus lead us to dismiss what others perceive as the gravest of all threats to their survival. Inequitable responses to threats further fuel division. Many people believe that what passes for collective security today is simply a system for protecting the rich and powerful. Such perceptions pose a fundamental challenge to building collective security today. Stated baldly, without mutual recognition of threats there can be no collective security. Self-help will rule, mistrust will predominate and cooperation for long-term mutual gain will elude us.[4]

In such surroundings, organizing the institutions of peace and enabling them to perform their tasks—with United Nations reform as its centrepiece—is a daunting task. Process-wise, obtaining results with such a large number of states around the table is difficult enough. But profound differences in perception and lack of trust further hinder the execution and transformation of processes meant to enable successful cooperation.

These days, collective solutions seem hard to find, especially as there seems to be limited inclination on the part of some key states toward effectively mobilizing multilateral instruments. Still, the UN Secretary-General drew the right conclusion from the High-level Panel's Report:

> Depending on wealth, geography and power, we perceive different threats as the most pressing. But the truth is we cannot afford to choose. Collective security today depends on accepting that the threats which each region of the world perceives as most urgent are in fact equally so for all.[5]

This acceptance of differing perceptions, as well as the inclination to compare them sympathetically to one's own, are prerequisites for better cooperation. States need to ensure, as Karl Deutsch, one of the pre-eminent scholars of international relations, realized, that signals from others are not "merely received, but would be understood, and that they would be given real weight in the process of decision-making."[6] Crucially, collective security means advancing security for *all*. The term itself implies that it is not a limited number of states that would benefit from more dynamism and reform in multilateral diplomacy, but that such progress is for the good of every nation and their people.

Some progress in multilateral work is still possible. The new Human Rights Council and the UN Peace Building Commission, both agreed to in 2005, are cases in point. But the international climate is not conducive to multilateral reform and reforming disarmament seems particularly difficult. The issue touches on the core of state sovereignty, which is why in disarmament negotiations fault lines in perception and mistrust are always near the surface.

It could be argued that adapting the institutions and processes of disarmament to try to make them more effective should be left to better times since these are the least likely international bodies on which agreement to change will be found. Some diplomatic practitioners prefer focusing on preserving the institutional structures intact for later.

However, based on my experience in multilateral disarmament, initiatives for reform and progress coming from within this field could be of impact. And if they do fall on fertile soil, further steps in disarmament could positively contribute to international "climate change". Disarmament has much to gain by greater application of ingenuity and initiative from diplomatic practitioners, fully coordinated with their authorities in capitals.

TRANSFORMATIVE POTENTIAL

Difficult as it may be, reform and progress in the processes of disarmament is not impossible. The 2005 United Nations World Summit Outcome Document showed that states agreed at the conceptual level about the importance of collective security measures. But states failed to agree on the concrete applications of those principles in the field of disarmament. In a time where many governments ideologically and strategically drift about, some might prefer the short-term gain of being seen as strong through the bold prevention of multilateral accords, as opposed to the longer-term gain of contributing to increasing security through non-proliferation, disarmament and arms control agreements. However, governments seldom come to conferences with the firm objective to block an outcome—even in disarmament. More often they will find in the course of negotiations that there is too little benefit to agree to a text that does not reflect their interests well enough. Yes, the wish lists of one group of states might have developed in a very different direction from that of another grouping, but most of the time a basic constructive approach is still there. It is up to diplomacy to somehow integrate these divergent wish lists, even as perceptions of interest have drifted so far apart and the task of finding common ground is becoming more daunting.

Disarmament diplomats play critical roles in the clearing away of obstacles to integrated, collective security outcomes. Although, for the moment, some might have given up on adapting set arrangements in order to create new opportunities for cooperation, their engineering can always make a difference. Political scientist Alexander Wendt advocated the view that the international system is socially constructed, arguing "people act toward objects, including other actors, on the basis of the meanings that the objects have for them."[7] With his insistence that "[t]he process of creating institutions is one of internalizing new understandings of self and other, of acquiring new role identities",[8] Wendt underlined the continued "tranformative potential" of international politics. This is an important contribution to understanding multilateral diplomatic practice—in particular to the field of disarmament:

> Roles are not played in mechanical fashion according to precise scripts, … but are "taken" and adapted … by each actor. The fact that roles are "taken" means that, in principle, actors always have a capacity for "character planning"—for engaging in critical self-reflection and choices

> … . But when and under what conditions can this creative capacity be exercised? Clearly, much of the time it cannot: if actors were constantly reinventing their identities, social order would be impossible … .
>
> The exceptional, conscious choosing to transform or transcend roles has at least two preconditions. First, there must be a reason to think of oneself in novel terms. This would most likely stem from the presence of new social situations that cannot be managed in terms of preexisting self-conceptions. Second, the expected costs of intentional role change—the sanctions imposed by others with whom one interacted in previous roles—cannot be greater than its rewards.
>
> When these conditions are present, actors can engage in self-reflection and practice specifically designed to transform their identities and interests and thus to "change the games" in which they are embedded.[9]

Certainly, Wendt himself stressed that change would be incremental and slow.[10] But his analysis is a strong argument for the need for more dynamism in disarmament diplomacy, and for understanding the decisive role diplomats themselves have in bringing that about.

In essence, representatives must remain focused on opportunities, and on their continued responsibility for finding these openings. As this means an unremitting attention to flexible approaches, the following options for increased flexibility can be considered.

FLEXIBILITY IN REGIONAL GROUPS

In the disarmament context, regional groups generally operate at two levels. In the Conference on Disarmament there are Eastern European, Non-Aligned Movement and Western groups (China is a "group of one"). These groups are used mostly for information exchange and to allocate functions. However, sometimes these groups, and in particular the Non-Aligned Movement, issue joint statements on substance.

Within the United Nations, states assemble more often in "true" geographical regional groupings and organizations like the African Union, Arab League, Association of Southeast Asian Nations (ASEAN), Economic Community Of West African States (ECOWAS), European Union, Group of Latin America and Caribbean Countries (GRULAC), Organization for

Security and Co-operation in Europe (OSCE) and the Pacific Island Forum. These arrangements are important for dealing with the sheer quantity of states in the international arena: once they agree to a joint statement, states from a region feel themselves represented on an issue and consequently there is less need for statements from all individual members. Obviously, nothing prohibits states from national interventions or participating through more than one group statement, like Morocco in the Arab League, the African Union and the Non-Aligned Movement or the Netherlands through the European Union and the OSCE.

In general, regional groups in both manifestations are useful in multilateral disarmament in making possible a balanced distribution of formal functions and in managing the complexity of multilateral action. But their huge drawback is that their existence tends to foster polarization. During the Cold War there was benefit in adding as much gravity as possible to a standpoint and sticking closely together as long as feasible. It was like dividing a bunch of children over a large seesaw: the more kids cling to one end, the more weight they produce as a group.

Not anymore. In twenty-first century multilateral diplomacy, untying the set regional frameworks here and there could make disarmament processes more effective because the old bipolar relationship has been replaced by more cross-cutting divides on lines that differ according to the issue. The myriad subjects for which multilateral solutions are needed, the ever-diversifying interests that develop in an increasingly interconnected world and the fluidity of international affairs impel governments to seek more diverse opportunities to cooperate in pursuit of their interests. For every challenge there might be a different solution, and it is often worth the effort to try to find the right coalition for it.

Diplomats should be less timid in developing ad hoc coalitions beyond regional group consultations. For instance, regional group politics unchanged since the Cold War dominate the Conference on Disarmament, and the constraints this places on member states help to explain why it has not successfully undertaken substantive work in nearly a decade.[11] Yet cross-regional cooperation has been demonstrably helpful in other disarmament-related processes. States have found each other in the New Agenda Coalition, the Human Security Network, and other cross-regional groupings and ad hoc coalitions with results that have sometimes been modest but usually tangible. There is room for further improvement, for

"smart" ad hoc cooperation, exploring possibilities of practically working together on issues of joint interest. Deutsch has argued that the best result is attained when a party offers cooperation, ends this cooperation when the offer does not elicit a favour in return, but then immediately offers it again.[12] That is the model which structurally offers most possibilities for progress—for representatives from all groups.

Box 6.1. The European Union as a regional group

When the Presidency of the European Union speaks in a negotiation on behalf of some 30 countries representing half a billion people (often, EU-associated states join up to statements), it displays the European Union's political, economic, military, and financial weight.

How effective is the European Union as a regional group in disarmament? At the outset it should be noted that EU member states are in very different situations. Two EU members possess nuclear weapons, a number of EU states belong to NATO, while others are "militarily non-aligned" and foster a foreign policy tradition focusing on nuclear disarmament. Within the Conference on Disarmament the profile of the EU has been limited, although joint statements have been possible. On biological weapons, and on human security-related issues such as curbing landmines and the illicit trade in small arms, the EU finds a great deal of common ground.

The challenge is to cooperate overtly only when it adds value, and not to when the EU operating as a bloc does not help matters. Flexibility in the EU's approach to cooperating in disarmament-related negotiations is difficult to manage, but is crucial in obtaining results for its members.

In general, member states should jointly formulate the goals of any given disarmament negotiations as much as possible. But, after having framed the best possible outcome for the EU, more flexibility in attaining these goals would be beneficial. As stated earlier, the high-profile actions of a large bloc are not always helpful in present-day negotiations. In a low-trust international environment without clear ideological poles, there is often more to be gained from unthreatening initiatives by smaller coalitions, and from interventions during discussions that do not carry the weight of so many.

Box 6.1 (continued)

It is, to a large extent, an organizational question. The European Union has internal procedures for coordination in place, and since they are there they tend to be made use of. What adds to this automaticity is that states in the rotating EU Presidency have an understandable wish to want to be seen working actively. In view of this, increased flexibility in the interests of a negotiating outcome requires conscious joint decisions to refrain from working systematically towards combined positions, interventions and standpoints at every stage of a negotiation.

Linked to this internal element, there is an external one to be considered when contemplating tactics for optimum results. Because of the "natural" process of intensive cooperation within the EU, there is a danger of individual member states not being as open to other coalitions—cross-regional ones—as they could be. Diplomats from EU countries may be so focused on the process of EU-internal coordination that they fail to identify and exploit opportunities for ad hoc coalitions of the like-minded more broadly. But European states almost always stand to gain from the bridging of global differences in disarmament negotiations.

All in all, the European Union states could serve their own jointly formulated goals better by plotting different courses in getting there—a strategy which requires high trust and good individual diplomatic skills.

FLEXIBILITY IN PROCEDURES

The recent Review Conference on the UN Programme of Action on the illicit trade in small arms (26 June–7 July 2006) was a fascinating exercise in time management—but not a unique one as it unfolded not unlike other negotiations. As usual, each UN working day has only six effective working hours: 10am to 1pm, and 3pm to 6pm. This conference's two-week agenda was cut short to nine days due to a UN holiday, and a formal UN General Assembly session on the entry of Montenegro into the UN family cut another half day from the roster. That left 52 hours. But the first day was needed to cover agenda points such as election of the President and Statement by the President, address by the President of the General Assembly, address by the Secretary-General of the UN, adoption of the rules of procedure, adoption of the agenda, organization of work, election of officers other than the President, presentation of credentials of representatives to the Conference, confirmation of the Secretary-General of

the Conference, and submission of the report of the Preparatory Committee. More importantly, the "general statements" by states and by representatives from international organizations and from non-governmental organizations (NGOs) covered the whole first week and a day of the second week. All in all, some 20 hours remained for actual negotiations between 192 states with rather diverse interests. And many of these minutes ticked away while representatives discussed the timely provision of translations, the chapter of the final document with which to start, or the method of work: in plenary only or allowing for parallel working sessions. This conference did not come close to finishing negotiations on its final document, and it remains possible that with a greater shared responsibility on substance intelligent compromises could have been worked out.

In an international environment where suspicion of the intentions of others has been steadily on the increase, and in which many states do not feel themselves listened to, dealing with procedure has the tendency to receive disproportionate attention. Moreover, the more difficult it is to deal with complex and multi-faceted issues on substance, the more alluring it will be to stick to one's view on "the rules of the game".

But rules of procedure are meant to help enable processes, not to hinder them. Strikingly, states that wish to cooperate are more reticent about applying rules of procedure of the processes they operate within in their favour, although that would be perfectly legitimate and potentially beneficial to them.[13] A constructive interpretation of rules could, for example in the case of the Conference on Disarmament, mean the following: if a substantial majority of its member states want to start work, but there is no agreement on the mandate, a start could be made anyway *without a mandate* and *without an agreement on a subsidiary body where this discussion should take place*. How? By conscientiously organizing among this large majority of states that on certain dates specific issues will be discussed, or even negotiated, in the plenary—by those who want to. That includes agreeing among these states which delegation would be responsible for drafting and adapting the negotiating document. This is an inclusive model: it would be designed to welcome every state to participate. And states that initially do not join this process retain the right to bring up their points of concern on other issues. They could speak on any item at any time during those meetings; the states that consider themselves in negotiations will then politely listen, after which time they would take up

their deliberations again. The President of the Conference on Disarmament would be back in the role originally intended for them; that is, leading the discussion on items states want to discuss, but not being primarily responsible for the result. Most importantly, the negotiations would create new dynamics, in which those few states that opted not to take part would feel a growing interest to participate.

There would be advantages in diversifying the Chair or President's role as well. A creative, knowledgeable and steadfast Chair helps tremendously in obtaining results. But the task of making progress happen really remains with delegations. All too often, representatives simply look to the Chair for solutions. In the Conference on Disarmament, years have been wasted because it was expected that the President would find a way out of the deadlock. But that is not the Chair's prime task. In a stalemate, it is up to the diplomats who have interests in the process to organize informal deliberations on possible ways forward.

Furthermore, although the rules of procedure describe what the Chair's role is, this is always a matter of interpretation. As stated above, the Chair should not be seen as primarily responsible for the outcome. But he or she can have a decisive hand, remaining the master of business. So, if the Chair is responsible for a text, it would most often be unwise to allow for bracketing of passages in the course of discussions, which is a sure way of losing control: delegations would focus on "their" text proposals not being deleted. The Chair in charge of a text would do better to listen carefully, openly discuss advantages and drawbacks of proposals, appoint so-called friends-of-the-chair wherever helpful to hammer out compromises in informal gatherings, call meetings with key players including regional representatives, and issue a new text under the Chair's responsibility whenever appropriate. And since it is also the responsibility of the Chair to have the meeting conclude in time, the person in charge can choose from the outset to take a firm steering role in discussions.

FLEXIBILITY IN RELATIONS WITH HEADQUARTERS[14]

One interpretation of multilateral diplomacy is that authorities instruct their representatives, who faithfully read out these instructions and report back on what others read out. But if diplomats simply repeated their national positions, consensus would never be reached. It is in the grey zones where

agreement is to be found. These can be deliberately created in instructions, when room for manoeuvring is explicitly spelled out. But preferably Headquarters leaves some unspecified leeway to their representatives (see Box 6.2).

In the Conference on Disarmament this leeway has been lacking in key respects. Diplomats repeat in different wordings their standing instructions from the capital, and these positions are often made more rigid by the development of regional positions. There seems to be little interest in breaking the deadlock or reviewing the purpose of those positions. Mistrust and disappointment have led to a waning of bottom–up initiatives, which are fundamental for finding new ways forward. This situation is exacerbated because delegations increasingly lack the capacity in human-resource terms to be able to cover disarmament issues in a comprehensive and in-depth way. Over the years, a number of capitals have drawn the conclusion from the prolonged standstill in disarmament that engagement on this topic has limited use. Disarmament diplomats nowadays tend to carry a portfolio that includes trade, human rights and other topics; many spend only a small or declining proportion of their time on disarmament issues.

To be sure, a decade ago this was not radically different: capacity in this technical field has always been an issue. But the trend is downward, and it becomes clear that capacity is an underrated factor in hampering progress in multilateral disarmament. Many disarmament practitioners feel their contribution could be stronger if they were able to devote more effort to the subject. In their situation, understanding the present status quo is already quite challenging, let alone being able to contribute meaningfully to the search for new approaches and solutions.

It would be unrealistic to expect governments to suddenly increase their diplomatic presence in multilateral disarmament without seeing results to justify renewed investment. But what can be stressed is that disarmament diplomats, in particular those in the Conference on Disarmament and their colleagues in capital, remain aware of the disadvantages of passivity. National representatives are not in Geneva only as spokespeople for their national governments. They are sent to a *conference* to influence or even broker an outcome. That is the central reason for their attendance, that is why they always need some room for manoeuvring on substance, and that is why the allocation of human resources to Geneva remains of importance.

FLEXIBILITY IN INVOLVING NON-STATE PARTNERS

There is a fourth element of flexibility that is important, which is widening the scope of partners involved in disarmament issues. Multilateral disarmament suffers from the fiction that states are the sole organizing structure in the field of security. To this end, it has been argued:

> Greater non-state actor input into disarmament and arms control processes—like the Conference on Disarmament or the NPT, for instance, in which such input is currently highly circumscribed—may make some states uncomfortable. But inviting a broader range of input, whether it be humanitarian mine clearance operators in the Mine Ban Convention or physicians and civil nuclear scientists in the NPT, should not be seen as some sort of favour to transnational civil society. In fact, a richer flow of information and of knowledgeable perspectives is a practical means to making multilateral processes more effective, especially if they lead to questioning features that have lost their purpose of utility.[15]

More than ever in a globalizing world, whether states face up to it or not, international security matters involve other kinds of actors as well. Business, groups of states, non-state groups, academia and international organizations can contribute interest, expertise, and a broadening of the relevance of the issues in general by their involvement, which ultimately strengthens disarmament processes and agreements:

- The best known example, and often referred to, is the Mine Ban Convention process, in which member governments and civil society have forged a strong partnership (although not without its problems).
- In connection with this, Geneva Call is an innovative initiative involving non-state armed groups in complying with the anti-personnel mine ban.[16]
- NGOs, such as the Women's International League for Peace and Freedom and the Acronym Institute, often offer the best reporting of direct use for disarmament practitioners (which they publish openly, for instance on the World Wide Web) on developments in the General Assembly and other United Nations forums.[17]

- Before UN states agreed on measures to mark and trace small arms in 2005, they sought the advice of industry on the future agreement's substance.
- The contribution of academic experts to the work in the Conference on Disarmament has shown to be of strong practical value and should be further examined by diplomats.

More substantial participation of civil society in disarmament meetings would be valuable. This currently varies from process to process. The Conference on Disarmament does not allow for any sustained civil society involvement in its deliberations (although there is agreement that NGO participation will be improved once the Conference finds a way out of its stalemate). There definitely are advantages to such greater involvement, including that of NGOs and international organizations, which often bring much-needed institutional knowledge and field experience. This is especially welcome in a technical field like disarmament in which diplomats struggle with the subject matter. Increased civil society involvement would also help to improve the flow of information from non-governmental and inter-governmental experts to diplomats and capitals. All too often, even the best expert reports on disarmament from civil society or international agencies do not reach the desks where policy is made, and integrating their contributions to the process could help in addressing that.

If a further opening up of meetings and a better flow of information are useful, NGOs should also realize that their most effective contribution to issues that concern them is often in lobbying parliamentarians, who in turn pressure governments to adjust their policies. In concluding agreements among themselves, of course, governments ultimately make the decisions in multilateral processes—a role that civil society cannot subsume. But, as David Atwood has argued, NGOs and international organizations can help in the shaping of opinion and in the formation of consensus by "being in the middle by being on the edge".

Box 6.2. A flexible approach to a First Committee resolution

In 2005, the Netherlands tabled a resolution (eventually UN General Assembly Resolution 60/68) on the link between small arms and development in the First Committee of the UN General Assembly in New York.

Box 6.2 (continued)

The resolution text was prepared over the summer in Geneva through a series of informal meetings with experts from international organizations and civil society (including the United Nations Development Programme, UNIDIR, the International Committee of the Red Cross, the Small Arms Survey, the Centre for Humanitarian Dialogue and the Quaker United Nations Office). Through their input, a number of elements were developed, the most important of which was the novel concept of integrating armed violence prevention programmes into national poverty reduction strategies.

In New York, meanwhile, the United Nations General Assembly was working on the 2005 Summit Outcome Document. The Dutch resolution was intended to bridge the upcoming outcome of this UN Summit with the review conference of the UN Programme of Action on the illicit trade in small arms and light weapons, to be held the following summer, in June–July 2006. The expectation was that the Summit would produce new thinking on the inter-linkages between security and development. Then, gathering soon after, the First Committee could translate those conceptual baselines into action in the field of small arms.

With a first proposed draft text for the resolution, the Netherlands Geneva disarmament delegation approached The Hague, arguing that a UN resolution on this subject would strengthen Dutch efforts to achieve its national interests, for instance within the Organisation for Economic Co-operation and Development, to better integrate security questions into development policy.

At headquarters, the idea was welcomed and the go-ahead was given—even although the Summit Outcome was not yet known.

This was a crucial moment: a green light in fully unpredictable surroundings. The goal was clear—to link security with development meaningfully in the context of the small arms. Unknown factors were:

- the outcome of the Summit;
- what an outcome (or failure to achieve an outcome) would mean for the draft of the resolution; and
- the actions needed—and the coalitions that would have to be formed—to get the resolution agreed.

In Geneva, EU delegations were informed of Dutch intent, without expectation of their full support immediately, since the text would probably evolve significantly

Box 6.2 (continued)

in the weeks after. But the *goal* was for a text to eventually emerge that EU states could support. In the meantime, early EU co-sponsorship could lend too much Western weight to the resolution (potentially alienating some other countries) and was thus not sought.

The resolution draft was also circulated in an informal meeting of the cross-regional Human Security Network states, with a request for support in due course, but in time for First Committee. Some other key states received an early copy in Geneva as well.

After the Summit Outcome was agreed to, the draft was finalized and circulated in New York at the outset of the First Committee. The Dutch delegation decided it would remain the only chief sponsor of the draft resolution for the moment, until regionally balanced support was found.

At a first meeting the Netherlands convened to discuss the draft resolution during the First Committee, it stressed that the draft resolution should not be regarded as fixed text to which any addition or deletion would be considered an assault. Instead, it was a work in progress, for which, unusually, five informational meetings were planned in the course of the First Committee.

This approach worked well. The draft was substantially altered in the weeks that followed. In particular, its structure was simplified and more emphasis was given to what could be expected from states in a position to render assistance to others. Actually, the text improved.

New versions were shared with the United Nations Development Programme in order to make sure the resolution retained its substantive value, despite evolution of the text.

Process-wise, as this was very much a developing text, the most challenging part for capitals would be that they would not be able to keep pace with the content of new versions issued from day to day. This might make it difficult for them to instruct their delegations to support the resolution. Still, the requests for co-sponsorship grew steadily as the direction of the resolution became clear.

When support from all continents was ensured, the draft was opened up for co-sponsorship by others. In the end, all delegations except one voted in favour.

EVER-INCREASING COMPLEXITY

The treatment of disarmament in seclusion by a caste of governmental professionals has become disconnected from what is needed in practical terms to improve security. There is no present-day benefit in working in an ivory tower of state security, nationally or internationally. In the twenty-first century, the causes of insecurity are such that governments *need* other perspectives than solely their own in order to address in more productive ways international security issues like small arms proliferation or a ban on the production of fissile materials. The multifaceted nature of these issues means that state-centred responses may simply be at the wrong scale to make much difference. And, they may have unintended consequences that nullify their value. Other perspectives—such as from the field and from academics—are also required. Those denying this should not be surprised by a continued lack of progress in multilateral disarmament diplomacy, including on the issues *they* want to bring forward.

In organizing the institutions of peace, individual diplomatic efforts are essential. In full coordination with capitals, delegations need allow their approaches to become more flexible—to "loosen up". This is more easily said than done, of course. What makes it such a challenge is not only the prevalence of top–down command structures in many national foreign services that discourage initiative and flexibility in disarmament diplomacy. Leaving the beaten track is simply difficult to manage in terms of the new uncertainties it introduces for individual negotiators. There are more potential coalitions to evaluate and to work within, more initiatives to consider, more contributions from non-state partners to digest, as well as many alternatives for formal or informal negotiating interaction. However, speaking from my own experience, the rewards outweigh initial risks. In a tough multilateral environment, the instinct of many diplomats and other policy makers is to be risk averse. But this simply is not helpful in exploiting precious opportunities to cooperate, which in turn could create greater confidence and further new prospects for cooperation.

CONCLUSIONS

Over the last decade, the tendency of practitioners in multilateral disarmament has been to accept lack of progress in the greater interests of keeping institutional structures intact.

But sitting back and waiting is not enough, especially for diplomatic professionals entrusted with such important responsibilities for the security and protection of the peoples they represent. There needs to be collective recognition that current diplomatic practice is sometimes not helpful to problem solving. Psychologist Erich Fromm famously stated that "[t]he history of man is a graveyard of great cultures that came to catastrophic ends because of their incapacity for planned, rational, voluntary reaction to challenge".[18] More recently, the scientist Jared Diamond outlined the historical fate of societies that fail to respond effectively and imaginatively to collective problems like environmental damage, which in turn can fuel insecurity and conflict, in his book *Collapse*.[19] Diamond stressed that this failure is not inevitable. Yet it is precisely this incapacity to respond to collective problems that is so visible in multilateral disarmament. A critical mass of well-informed representatives is required, alert to manoeuvring toward solutions of value to them nationally and collectively.

Creative, innovative bottom–up approaches to disarmament can turn the principles of collective security all states agreed to in the 2005 World Summit Outcome into meaningful action. To be successful in managing progress, a critical mass of diplomats and other civil servants must recognize that changing the ways in which they approach multilateral problems would be of real benefit to them.

Flexible attitudes are essential. This always includes being clear about one's own goals. But constant repetition of these goals is not an effective part of such an approach—continuous, thorough consideration of the goals of others is needed. That does not equal a naïve or soft attitude. It requires a state of mind the Austrian novelist and political thinker Manès Sperber described beautifully: "The window is made of glass, and the mirror is made of glass. When we look out of the window, we see the others, but in the mirror we only see ourselves. Nonetheless, we must educate ourselves to observe the same image in both. For in the others, I am as well; and in me are the others."[20]

Notes

1 Quincy Wright, *A Study of War*, University of Chicago Press, 1965.

2 Draft resolution referred to the High-level Plenary Meeting of the General Assembly by the General Assembly at its fifty-ninth session: UN General Assembly, *2005 World Summit Outcome*, document A/RES/60/1, 24 October 2005.

3 "New medievalism" is a term that appeared initially in debates about European integration, but which is better applicable to the developing world according to John Rapley. See John Rapley, "The New Middle Ages", *Foreign Affairs*, vol. 85, no. 3, Council on Foreign Relations, 2006, pp. 95–103.

4 Report of the Secretary-General's High-level Panel on Threats, Challenges and Change, *A More Secure World; Our Shared Responsibility*, United Nations, 2004, pp. 9–10.

5 UN General Assembly, *In Larger Freedom: Towards Development, Security and Human Rights for All, Report of the Secretary-General*, document A/59/2005, 21 March 2005, paragraph 79.

6 Karl Deutsch et al., *Political Community and the North Atlantic Area: International Organization in the Light of Historical Experience*, Princeton University Press, 1957, p. 67.

7 Alexander Wendt, "Anarchy Is What States Make of It: The Social Construction of Power Politics", *International Organization*, vol. 46, no. 2, Cambridge University Press, 1992, pp. 396–397.

8 Ibid., p. 417.

9 Ibid., p. 419.

10 Ibid., p. 418.

11 For more discussion, see Vanessa Martin Randin and John Borrie, "A Comparison between Arms Control and other Multilateral Negotiation Processes", in John Borrie and Vanessa Martin Randin (eds), *Alternative Approaches in Multilateral Decision Making: Disarmament as Humanitarian Action*, UNIDIR, 2005, pp. 67–129 and John Borrie's chapter, "Cooperation and Defection in the Conference on Disarmament", in this volume.

12 ("Was am besten funktioniert, ist Kooperation anzubieten, und wenn sie nicht auf Gegenleistung stösst, sie abzubrechen, aber dann sofort abermals anzubieten"). Karl Deutsch, "Der Einzelne und der Friede", in Hans Jürgen Schultz (ed.), *Was der Mensch Braucht. Über die Kunst zu Leben*, Deutscher Taschenbuch Verlag, 1989, p. 59.

13 For detailed discussion of the different ways in which multilateral negotiators may deploy procedure see Rebecca Johnson's chapter in this volume.

14 Here, "headquarters" is used as shorthand. Who these authorities are (usually foreign ministries, at least) and how many domestic actors are involved in preparing instructions depends on the issue and on the system.

15 John Borrie, "Rethinking Multilateral Negotiations: Disarmament as Humanitarian Action", in John Borrie and Vanessa Martin Randin (eds), *Alternative Approaches in Multilateral Decision Making: Disarmament as Humanitarian Action*, UNIDIR, 2005, pp. 30–31.

16 See <www.genevacall.org>.

17 See <www.reachingcriticalwill.org> and <www.acronym.org.uk>.

18 Erich Fromm, *The Revolution of Hope: Toward a Humanized Technology*, Harper and Row, 1968, p. 62.

19 Jared Diamond, *Collapse: How Societies Choose to Fail or Succeed*, Viking, 2004.

20 ("Das Fenster ist aus Glas, und der Spiegel ist aus Glas. Blicken wir durchs Fenster, so sehen wir die anderen, doch im Spiegel betrachten wir nur uns selber. Indes müssen wir uns dazu erziehen, in beiden die gleichen Bilder wahrzunehmen. Denn in den anderen bin auch ich; und in mir sind die anderen"). Manès Sperber, *Ein Politisches Leben: Gespräche mit Leonhard Reinisch*, DVA, 1984, p. 110.

CHAPTER 7

A PHYSICS OF DIPLOMACY? THE DYNAMICS OF COMPLEX SOCIAL PHENOMENA AND THEIR IMPLICATIONS FOR MULTILATERAL NEGOTIATIONS

Aurélia Merçay and John Borrie

> *"It sounded an excellent plan, no doubt, and very neatly and simply arranged. The only difficulty was, she had not the smallest idea how to set about it."*
>
> Lewis Carroll, *Alice in Wonderland*

SUMMARY

There are big differences between what is "complicated" and what is "complex". This chapter explores what complexity is about, and in plain language terms explains the relevance for multilateral disarmament practitioners of scientific concepts like phase transitions, self-organized criticality, and complexity and network theory. Moreover, it shows how and why complexity science is relevant to understanding problems of human insecurity such as small arms proliferation, and to more effective responses. In addition, multilateral negotiations can themselves be considered as complex social systems, which has practical implications for improving the ways in which negotiators work.

INTRODUCTION

This paper has been realized within the framework of UNIDIR's project entitled *Disarmament as Humanitarian Action: Making Multilateral Negotiations Work*. The project aims at developing new concepts, tools and techniques that might assist negotiators and policy makers, as disarmament

and arms control are branches of multilateral work that have experienced scant success in recent years.

Like other contributions to this volume, the approach adopted in this paper is unorthodox by the standards of the usual literature read by diplomats, representatives of non-governmental organizations (NGOs) and others involved in multilateral negotiations. We examine what scientific perspectives might offer them, in terms of *how they think about problems in general*, rather than merely science as the font of answers to specific technical questions like "what is the virulence of this biological pathogen?" or "how much highly-enriched uranium would be needed to make a nuclear bomb?" In fact, there are many insights from the natural sciences that would enhance responses to global problems associated with armed violence in general—too many to discuss in one paper. The focus here is on scientific understanding of *complexity* and its implications for multilateral negotiations.

For most people working in disarmament, the implications of how the world works in the physical, scientific sense are not something they think about much. This is understandable. In a previous volume, we described how negotiators interacting in multilateral forums seem to be members of a distinctive "community of practice", which is simply a group of people who, over a period of time, share in a set of social practices geared toward some common social purpose.[1] In disarmament diplomacy, that community of practice is rather conservative. While Enlightenment-era rationalism has always been a component, more recent insights offered, for example, by statistical physics, and complexity and network theory, have not been absorbed deeply or widely.

Also, it is not always apparent how new ideas from scientific fields of study actually help in addressing practical problems of international security. Looking at problems as interdependent systems is a nice idea, and is mentioned a great deal in the rhetoric of statecraft. But, it is often less intuitive than attempting to simplify problems by breaking them into their constituent parts. Indeed, when diplomats talk about "complex" phenomena, it seems they often confuse them with those that are "complicated".

As the explanation that follows will show, in science there is a clear distinction between what is complicated and what is complex.[2] Even

though it is very sophisticated, a complicated system like a watch, a computer or a car cannot be considered to be complex. The pieces can be studied in isolation and reassembled to understand the whole. The responses of the components and of the whole are fully determined and the fixed algorithms that rule the system produce linear and predictable outcomes.

Many aspects of government—whether tax systems, legal codes or coordination between bureaucracies—are perceived along mechanistic lines. Perhaps, by extension, diplomats in the Geneva environment often talk in terms of the "multilateral disarmament machinery" in interaction between states. However, while it is a convenient idea to describe political institutions that relate to one another, there are problems with this mechanistic thinking. It can create the impression that the evidence collected in one context will apply to another and that a linear relationship exists between cause and effect in situations where that may not be the case. "In fact, complex systems involve hundreds of nested feedback loops, which result in significantly non-linear behaviour. Change in such systems is at least as much to do with internal structure as with external interventions."[3] Moreover, thinking about multilateral disarmament in mechanistic terms often fails to take into account the power of *unintended consequences*, which occur in all areas of public policy—not least because evaluation (if it occurs at all) tends only to measure intended outcomes.

Real-life international security problems are frequently complex rather than just complicated. We live in a world that is becoming ever more interconnected. The spread of infectious disease; the diffusion of potentially dangerous dual-use technologies; refugee flows; trafficking in people, guns or drugs; and environmental damage are examples of security challenges that are shaped by the interaction of many different variables and, as such, can be difficult to define or predict. Traditional conceptions of the nation-state as utterly sovereign within its borders are not always up to the task of dealing effectively with such phenomena because they cannot be regulated in the way that we would wind up a watch or send commands to a computer.

Policy makers therefore need to move beyond diplomatic rhetoric about complexity and interdependence toward a real conceptual understanding about the characteristics and implications of these phenomena. To try to help convey such understanding, this paper pursues a broad arc. Following

on from introductory ideas outlined in a paper by John Borrie in our first volume, it outlines how the rational approach that has roots in the seventeenth century has shaped our minds and the way we look at the world today.[4] The independence of the observer, the direct and linear relationship between cause and effect and the reductionist approach of studying the parts of a system independently in order to understand the whole are key features brought about by the scientific revolution more than 400 years ago.[5] These principles are deeply embedded in modern policy-making culture and pervade our thinking in ways we are not necessarily conscious of.

Negotiators could benefit from the understanding provided by a "physics of society", whose insights may be counter-intuitive or go against the grain of traditional forms of rationalist education. This is because, however powerful the orthodox rational approach is, it has limitations when it comes to understanding complexity, especially where social systems are concerned. In some circumstances, strict arithmetical reasoning reveals itself as inappropriate and leads to a crude, and sometimes incorrect, description of social behaviour. Correspondingly, this paper explores emerging scientific concepts, such as phase transitions, self-organized criticality, and complexity and network theory. While such insights are not solutions in themselves, they will help to revolutionize multilateral practitioners' understanding of human systems and suggest productive responses that often fall outside current policy thinking. Moreover, multilateral negotiations themselves can be considered as complex systems.

THE RATIONAL APPROACH

ORIGIN

The idea that the world (and by extension, the human beings in it) is fundamentally explicable emerged in Europe in the seventeenth century. Earlier, thinkers during the Renaissance undertook new explorations in science, especially in the fields of what we now refer to as physics and biology, animated by the desire to understand reality. Their experiments provided evidence that the views of the ancient Greek philosopher Aristotle—still widely regarded as the benchmark for knowledge more than 1,500 years after his death—did not give a satisfactory account of how the world worked.[6] However, supported by the Catholic Church, Aristotelian

thought continued to be the main intellectual stream until the Protestant Reformation, which began with Martin Luther in 1517.

Aristotle's authority over scientific philosophy and inquiry was gradually broken over the next centuries by what is often described as the Scientific Revolution, which allowed the development of what is still known today as "modern science".[7] For example, Francis Bacon rejected Aristotle's idea of "final cause" and argued that all knowledge should be based on evidence and experiment.[8] The Italian astronomer Galileo Galilei, who is considered by many as the father of modern science, supported Nicolaus Copernicus' heliocentric model and contributed through his own experiments to the establishment of the modern scientific method. His work prepared the way for Isaac Newton, who, at the end of the seventeenth century, stated the law of universal gravitation and the three laws of motion.[9]

The Scientific Revolution, culminating with the work of Newton, laid the foundations for a completely new and different worldview, one that was essentially mechanistic rather than relying on divine mystery. By the end of the seventeenth century, the predominant strain of thought among contemporary thinkers considered nature to be a precise and logical machine governed by physical laws, which could be uncovered by means of reason and observation. As balls on a billiard table, things in the universe interacted in predictable ways in order to produce predictable outcomes. A century later, influenced by the ideas put forward by the Scientific Revolution, the Enlightenment saw the rise of such rationalism in other fields of endeavour including moral philosophy, politics and economics—a Western legacy that persists to this day.

The Scientific Revolution and subsequent developments of European rationalism brought about four fundamental principles that have become part of the bedrock of modernity:[10]

- **objectivism**: human beings are capable of coming to objective, observer-independent conclusions;
- **reductionism**: a system can be understood by taking it apart and studying its pieces separately, even if it is very complicated. This leads to the idea that all of nature can eventually be described scientifically. In other words, there are no unknowable facts;

- **determinism**: every effect has an explicit cause to which it is uniquely coupled. This means that sufficient analysis of past events creates the capacity to predict future events; and
- **linearity**: The equations governing a linear system are solvable and strictly proportional: small inputs produce small outputs and large inputs produce large outputs. Furthermore, linear systems are modular, which means that the behaviour of the entire system can be analysed by considering the behaviour of its sub-elements separately. This is known as the principle of superposition.

LIMITATIONS

As explained above, much of the work done during the seventeenth and eighteenth centuries remains the foundation of modern science today. Mechanistic physics proved to be very efficient in dealing with many problems and its potency should not be underestimated. However, like any paradigm, it has its limits, and by the second half of the nineteenth century these were becoming apparent.

One limit of mechanistic physics is that it fails to predict phenomena occurring at the atomic scale correctly. Breaking with mechanistic tradition, certain scientists of the nineteenth century—James Clerk Maxwell in particular—explored new conceptual ways of solving these problems.[11] Maxwell "made physics statistical, saying that what matters when we are dealing with huge numbers of virtually identical moving objects is not the detailed behaviour of individuals but the average motions, as well as the extent of deviation from those averages".[12]

Meanwhile, the first attempts were being made to use physical theories in order to understand social phenomena. Measuring populations and economies became matters of acute national importance during the early modern period because European rulers needed better ways to pay for and raise military forces.[13] Most of these early attempts were based on mechanistic principles, and the tools and techniques involved were crude by today's standards, although over time they became more sophisticated.[14] By the later nineteenth century, it had become apparent that, if there should be a physics of society, it would be essentially a statistical one.[15]

While the tools and techniques of statistics and probability theory grew from the need to describe and try to predict social phenomena and were then appropriated by the physical sciences during the nineteenth century, the natural and emergent social sciences were already drifting apart. The comment by the nineteenth-century German thinker Wilhelm Dilthey that "we explain nature but we understand human beings" pithily sums up the distinction and supposed differences in method that each required. More recently, it has been observed that:

> The subsequently drawn distinction between the nomothetic (science-based general laws) and the idiographic (the uniqueness of the individual) seemed to complement Dilthey's distinction. That the uniqueness of the individual is the result of universal processes and mechanisms that can be understood within the framework of natural science is very much a 20th-century world view, and even now, at the start of the 21st century, is still not universally accepted.[16]

The emergent social sciences—and with them many humanities and the field of law—incorporated the mechanistic Newtonian worldview. However, two other factors impeded them taking up subsequent new scientific paradigms about how things happen. Firstly, beside the process of drift mentioned above, "recent social science has tended to adopt a psychological approach to understanding human behaviour, focusing on the ways in which individuals understand and respond to their social environment."[17] Secondly, handling knowledge became increasingly specialized as human understanding of the world expanded, leading to more compartmentalization—an approach that tends toward reductionist modes of framing and addressing problems.[18] Some, like the American biologist Edward O. Wilson, have argued that, in the domain of human study, the gulf between the natural and social sciences has become unhelpful in understanding some social phenomena.[19] New bridges need to be built between them, because each could help the other.

Even though recent developments have proved the limitations of the mechanistic approach, this model is still at the basis of our contemporary cultural education. Objectivism, reductionism, determinism and linearity are rational principles so deeply embedded that their validity is barely questioned. Human intuition suggests that effects happen in proportion to their cause, as already mentioned: if we make a small change to some system, we suppose that there will be a correspondingly small response in

the system's behaviour. In statistical physics and in the real world that is often clearly not the case: if, for example, a system is close to a phase transition, small changes can have tremendous effects.

The result is that sometimes we struggle with small changes having big effects as it can be deeply counter-intuitive to us. Even so, it remains intriguing to many people. A book by the journalist Malcolm Gladwell entitled *The Tipping Point* recently became a global bestseller.[20] Its sub-title was "How Small Things Can Make a Big Difference". Gladwell listed this as one of three characteristics of his conception of a tipping point, the other elements being contagiousness and that change in a "tipping point" situation happens not gradually but in one dramatic moment. In presenting his arguments and examples in pop culture terms (ranging from the fall in New York's murder rate to fads like the wearing of Hush Puppy shoes), Gladwell avoided statistical physics altogether. But his ideas did not surprise physicists and biologists who had been grappling with "tipping points" as part of non-linear phenomena for some time. It is to a basic physical understanding of non-linear phenomena that we now turn.

PERTINENCE OF A PHYSICS OF SOCIETY

Nature presents numerous examples of systems that apparently have little or nothing in common, but nevertheless behave in very similar ways. Phase transitions, for instance, occur between the solid, liquid and gaseous states of matter as well as in magnetic materials. Likewise, many natural phenomena such as earthquakes, forest fires and avalanches share identical regularities: their distribution follows a specific mathematical curve called a "power law", which appears as a straight line in a logarithmic–logarithmic plot (see Figure 7.1 overleaf).

This graph illustrates that the probability of occurrence of an event depends on its "size": small events happen often, events of moderate size happen sometimes and huge events happen rarely.

What is really striking is that the same kinds of regularity are also observed in social systems. Studies on wars, conflicts and acts of terrorism, for instance, have highlighted power law relationships.[21] It should come as no surprise that events killing one or a few people are a lot more frequent that events killing hundreds of people. But what a power law says goes beyond

that: by studying the history of a given war or conflict, it is possible to predict the probability of occurrence of an event depending on its severity in terms of number of people killed. In the case of the ongoing Colombian conflict between government, insurgent and paramilitary forces, for example, data shows that 20% of the events kill five people or more, 5% of the events kill 10 people or more, 1% kill 20 people or more, and so on.[22]

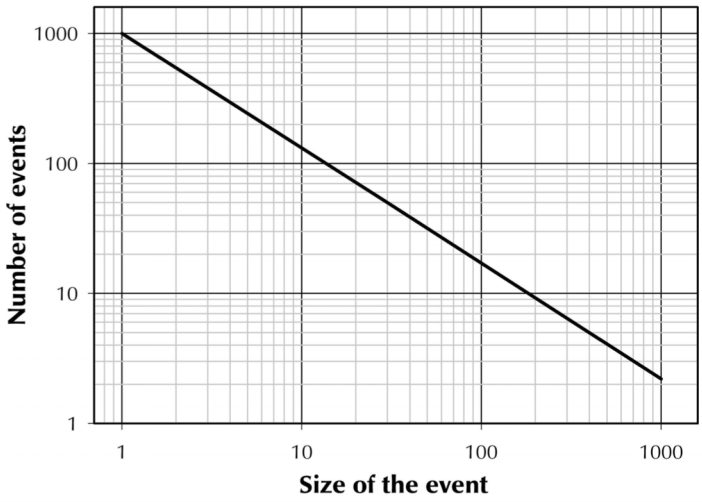

Figure 7.1. A power law represented in a logarithmic–logarithmic (log–log) plot appears as a straight line. In log–log graphs, both horizontal and vertical axes are plotted with a logarithmic scale. That simply means that the difference between two tick marks is not constant, but increases each time by a factor of ten. This kind of presentation is helpful when data covers a large range as it permits changes at different scales to be represented in the same graph.

This kind of distribution is not limited to war: power laws appear to fit such disparate social phenomena as financial market fluctuations, the populations of cities and word frequency in literature.

In recent years, many "agent-based models" have been developed and have proved to be very effective at reproducing observed social

behaviours.[23] One example is the American economist Thomas Schelling's model of the emergence of segregation in a society.[24] Schelling's simulations show that collective behaviour is not the linear extrapolation of many individual behaviours; it is more than that. Yet, a lot of people are still suspicious about the validity of such models because, contrary to particles, human beings have the power to make their own decisions. And, it is an understandable concern. However, as Philip Ball has noted, people are restricted in their actions in many situations because of a wide variety of factors like their immediate circumstances, social background or the limited range of choices available.[25] For instance, although we all have free will, many of us tend to want to drive our cars to and from work at similar times during the day, which can lead to traffic jams. Furthermore, we do not (generally) just decide to drive to our destination on the wrong side of the road. While we have free will, it operates within practical constraints.

A "physics of society" would help multilateral practitioners improve their understanding of what decisions lead to which *type* of consequence. At present, "Policy makers are all too prone to linear thinking: they assume that if we understand how an individual tends to think or behave, we can understand what a population will do."[26] Phase transitions, self-organized criticality, and complexity and network theories are key components to understanding those consequences. For that reason they are discussed next.

SOME KEY CONCEPTS

PHASE TRANSITIONS AND SELF-ORGANIZED CRITICALITY

A phase is defined scientifically as a homogeneous part of a system that has relatively uniform chemical composition and physical properties. The most familiar examples of phases are solids, liquids and gases; phases less familiar to most of us include plasmas, superfluids, as well as paramagnetic and ferromagnetic phases. During a phase transition, a system transforms itself from one arrangement to another: the particles constituting the system do not change—a particle of water stays the same whether the system is in a solid, liquid or gaseous state—but the collective form of organization is modified.

There are two main categories of phase transition: 1st-order phase transitions and 2nd-order (also called "critical") phase transitions. First-order

phase transitions, like solid–liquid–gas transitions, are characterized by an abrupt jump between two alternative global states of a system triggered by small changes (see graph (a), Figure 7.2). When the temperature of water is near 0 degrees Celsius, cooling it down just a little bit will turn water into ice. This is a clear example of a non-linear phenomenon: a small change in temperature has tremendous effects on the structure of the system. Another characteristic of 1st-order transitions is that they do not always happen under a unique set of conditions. It depends on the past history of the system—a point we will return to later.

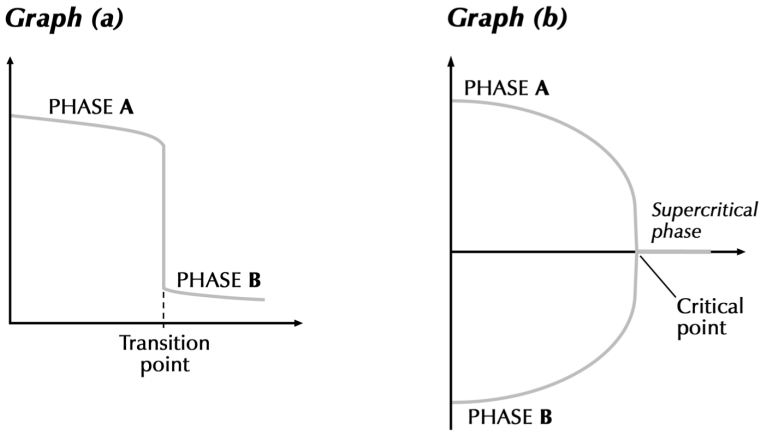

Figure 7.2. Graph (a) illustrates a 1st-order phase transition and Graph (b) a critical phase transition.

When extended to the social sciences, 1st-order phase transitions are more than just a metaphor for talking about abrupt shifts in modes of human behaviour. Campbell and Ormerod, for example, have developed a mathematical model of criminality, which displays 1st-order phase transitions. Other models describing the shift between "high-marriage" and "low-marriage" society and the switch from free to congested traffic show 1st-order phase transition characteristics too.[27]

Box 7.1. What do we mean by a system?

The concept of "system" can be understood in several ways. The definition we refer to in this paper is the following:

A **system** is a combination of interrelated, interacting elements comprising a unified whole. Any element which has no relationship with any other element of the system cannot be part of that system.

Above a certain temperature, it is possible to transform a gas into a liquid without going through an abrupt change of the system. This kind of transition, called *critical phase transition*, happens in well-defined conditions of temperature and pressure, which vary from one fluid to another. The critical point is at which the distinction between the gas and the liquid phase disappears. In other words, the fluid can only exist in one state: neither gas nor liquid, but something in between (see graph (b), Figure 7.2).

The transition between a non-magnetic and a magnetic state is another example of critical phase transition. Above a certain temperature, the dipoles (or "spins") of the material randomly point either up or down, cancelling each other out. The material is not magnetic. But, if the temperature decreases, the system passes through its critical point, after which its magnetization increases progressively until all dipoles point in the same direction.

A critical point is therefore a place where a "choice" is made between two possible states, both being equally appealing: gas or liquid in the case of a fluid, pointing up or down in the case of a magnet. When it passes through its critical point, the system fragments into regions, which can be in either of the two states, the choice being made by pure chance. Power laws are the signature of systems in a critical state for the reason that the size of these regions follows a power law distribution. Putting it differently, the system consists of a huge number of small regions and a few numbers of very large ones.

Although heating or cooling a material to pass through a critical phase transition is easy, it takes careful fine-tuning of the temperature to maintain a magnet in a critical state. Because of this extreme sensitivity to

perturbations, events in one part of the system can have an instantaneous effect in any other part of the system. The interactions are transmitted from particle to particle over long distances, and all particles act together. This phenomenon is known as long-range correlation.

Box 7.2. Energy landscapes

Energy landscapes are used as a mathematical tool to help grasp the dynamics of a specific system. Concretely, an energy landscape consists of a graphical representation of the energy associated with each possible state of a system (see Figure 7.3). Starting from an initial configuration, the system can evolve towards a different state under the action of two kinds of forces:

- Random internal forces called "fluctuations", which, even if their magnitude is very small, can trigger big changes in the configuration of a system depending on its state at that time (see position A in Figure 7.3).
- External forces, whose action is to modify the energy landscape and alter the relative depths of the valleys.

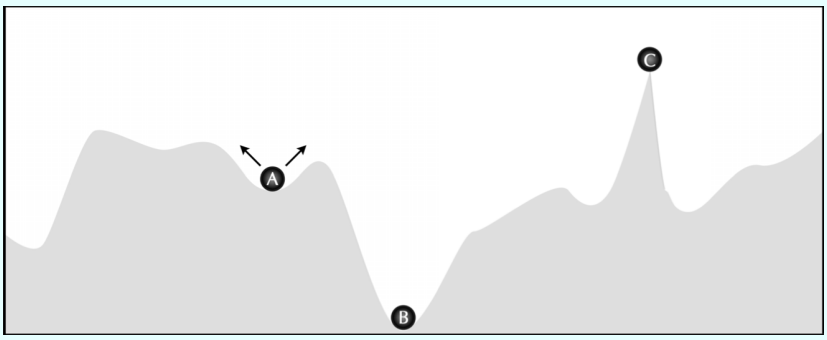

Figure 7.3. Energy landscape. A corresponds to a metastable equilibrium, B to a stable equilibrium, and C to an unstable equilibrium.

The bottom of the deepest valley corresponds to the lowest energy state of the system and is known as "stable equilibrium" (see position B in Figure 7.3). Provided there are no external forces that prevent the system from doing so, it will always evolve towards this global minimum if we wait long enough. Moreover, even though the system is pushed away from this configuration by small disturbances, it will return to it.

Box 7.2 (continued)

A system in a "metastable state" is stuck in a "local" minimum (see position A in Figure 7.3). It is a non-equilibrium configuration, which has the ability to persist for some period of time, whereas, under these specific conditions, another state is actually more stable. An example of such a phenomenon is water cooled to minus 39 degrees Celsius, which temporarily ignores the liquid to solid transition.

However, a system cannot stay in a metastable state forever. The criterion for equilibrium establishes that the system has to minimize its energy to achieve equilibrium; thus, in theory, a metastable state will always convert to the more stable state. But, how is the transformation triggered? Ball explains that, "what destroys a metastable state is the phenomenon of nucleation. If a sufficiently large region of the more stable state happens to form by chance in the metastable state, it can expand rapidly to engulf the whole system … . At some point the least stable of two possible configurations vanishes altogether".[28]

If the system is neither in a global nor in a local minimum, it is in an unstable state. This kind of configuration, which is highly precarious, has a very short lifetime (see position C in Figure 7.3).

Maintaining a magnet in a critical state is an arduous task. Yet, nature offers many examples of systems that continuously reorganize themselves into a critical state without fine-tuning of the parameters.[29]

Let us consider the example of a rice pile: rice is added one grain at a time onto a flat surface. Little by little, the pile grows and the steepness of the slope increases. Occasionally, when the slope becomes too steep somewhere on the pile, some grains slide down causing a small avalanche. But, as more rice is added, the pile starts to grow again. When the slope reaches a certain value, the addition of one more grain may start an avalanche, which can be of any size, ranging from a single grain to a complete collapse of the pile. By analysing the size and frequency of the avalanches at that point, it can be seen that these follow a power law, which is the signature of a system in a critical state. Thus, rice piles, contrary to magnets, evolve naturally towards a critical state and the process by which this happens is known as "self-organized criticality".

Many scientific studies have shown power law distributions in the field of social sciences, providing good reasons to believe that human systems tend

to evolve towards a self-organized critical state. Increasingly, this awareness is permeating policy-making in some domains. For example, economic markets are many-body social systems that have received attention from physicists in this regard, and Ball argues:

> these studies can potentially extend classical economic theory in useful ways, for example by including trader interactions and interdependence directly (rather than indirectly via their effect on prices), allowing for heterogeneity and irrationality in trading practices, moving beyond incorrect assumptions of Gaussian statistics and treating the economy as a truly non-equilibrium system.[30]

Multilateral policy makers need to consider the social systems in which they are expected to intervene toward a specific policy goal as fundamentally out of equilibrium. This is something we will return to in the fifth section of this chapter.

COMPLEXITY THEORY

As discussed earlier, complexity is a fashionable term often employed in an informal way to name something whose behaviour is hard to understand. Multilateral diplomats use the word a lot, although it is not clear whether this is with reference to its formal meaning.

Nevertheless, we explained in the introduction to this paper that the distinction between what is complicated and what is complex is extremely clear in science. Complexity refers to the study of systems composed of many interacting components, or *agents*, that act together in a non-linear fashion and produce patterns of behaviour at the level of the group.[31] The basic properties of complex systems are explained below.

Self-organized criticality

Earlier, we explained that complex systems, such as wars or financial markets, evolve naturally towards a critical state. This process, which has already been described before with the rice pile example, is known as self-organized criticality.

Metaphorically, complexity is said to reside at the edge of chaos (see Figure 7.4 overleaf). Basically, what this means is that it operates in a

region between total order and complete randomness. Some phenomena, like gravity or electricity, are completely predictable; others, such as the movements of a double pendulum, are chaotic and therefore by essence unpredictable. Complex systems evolve at the border between the two, presenting a limited degree of predictability. Self-organized criticality is the process by which complex systems are maintained at this point.

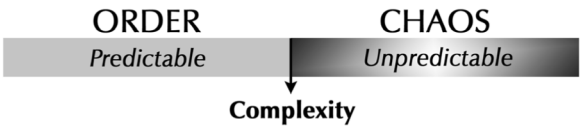

Figure 7.4. Complexity resides on the edge of chaos.

Limited predictability

Just as the principle of reductionism is limited in its applicability to complexity, the rational concept of determinism no longer stands in complex systems. Cause and effect are not uniquely coupled. There is, however, scope for predictability in the sense that, even if it is impossible to predict in detail how a specific agent is going to act, it is possible to find some regularities at the level of the global system.

Limited decomposability

It is important to realize that the mechanistic rational approach is not well adapted to understanding complexity. In particular, the principle of reductionism (decomposing into pieces in order to understand the whole) only leads to a partial understanding of complex systems' behaviour. The key feature of complexity, indeed, lies in interactions: when many agents act collectively, completely new and unintuitive outcomes arise—even though their behaviour is based on very simple rules. This phenomenon is commonly called "emergence".[32] For example, computer simulations have shown that organisms—not just birds, but also fish, bacteria and even people—do not need telepathy to swarm or flock in remarkable ways: it is enough that they be able to respond only to their near neighbours following simple rules.[33]

Emergent phenomena are patterns visible at the level of the group that are generated by the interactions between individual agents. This is an important feature in terms of social organization, as social norms might be considered as emergent phenomena within a group of individuals, the appearance of which is, currently:

> one of the big unsolved problems in social cognitive science. Although no other concept is invoked more frequently in the social sciences, we still know little about how social norms are formed, the forces determining their content, and the cognitive and emotional requirements that enable a species to establish and enforce social norms.[34]

Non-linearity

Because of its high level of interconnectedness, a complex system is hypersensitive: even the smallest perturbations can have tremendous effects. Besides that, as complex systems are in a critical state, fluctuations follow a power law. There is therefore no reason to look for a specific cause of really big fluctuations as it is part of the nature of the system.

Trying to suppress large fluctuations can drive a system into an even more unstable critical condition—called a "supercritical" state—in which the likelihood of very large changes is increased. This is what happens, for instance, with forest fires in Yellowstone National Park: by adopting a zero-tolerance attitude and preventing even fires sparked by natural causes, the United States Forest Service has driven the system into a supercritical state. With a high density of burnable material everywhere, a simple forest fire is more likely to become an all-consuming disaster.[35]

History matters

When a system is in equilibrium, it stays in the same uniform condition forever. History does not matter in a system in equilibrium because nothing happens. As the study of complexity is all about things that are out of equilibrium, history is important.

A place where a choice is made is called a bifurcation. Two identical systems driven further from the same equilibrium can end up in quite different states because of their choice history at bifurcation points. These

choices, which are the consequences of internal forces (also called fluctuations or noise in the system), occur at random.[36]

Universality

There are some processes in the world for which the details simply do not matter. Critical phase transitions and self-organized criticality belong to these generic phenomena. They happen in the same way for a wide range of apparently different systems: a fluid and a magnet, for example, illustrate this fact by approaching their critical point at the same rate.

Close to the critical point, most details become irrelevant and the behaviour of the system is determined by a small number of relevant parameters and mechanisms. As a consequence, if a system is in a critical state (as it is the case for a complex system), making a model that works in essentially the same way is feasible: the details can be ignored, as long as the core logic of the process is captured.

Network theory

The relatively new field of network theory, which describes the topology of systems composed of many interconnected agents, is a useful tool in exploring complexity. In basic terms, networks are composed of nodes connected one with another via links. They fall into different categories according to how the nodes are linked to one another. Scientists developing early network theory investigated the potential of regular lattices and random graphs to study real-world complex networks (see Figure 7.5 overleaf). However, neither of these topologies seemed to give a satisfactory account of how complex systems were organized.

In 1998, Strogatz and Watts highlighted a new class of graphs called small-world networks.[37] In order to characterize the different types of network they studied, Strogatz and Watts defined two variables: the first one, called the "clustering coefficient", measures the fraction of neighbouring nodes that are connected one with another; the second one—the "characteristic path length"—corresponds to the average path length between two nodes chosen at random. An ordered grid, for example, exhibits a high clustering level and a long characteristic path length. Random graphs, on the other hand, are poorly clustered and present a short characteristic path length.

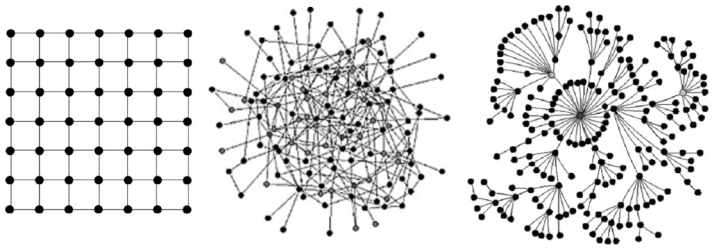

Figure 7.5. Three different kinds of network: a regular lattice or ordered grid (on the left), a random network (in the middle) and scale-free network (on the right).

By adding randomness to ordered networks, Strogatz and Watts observed a swift fall in the characteristic path length, whereas the clustering coefficient dropped rather slowly. This kind of network, lying somewhere between order and randomness and characterized by a short path length and a high clustering coefficient, is called a small-world network. The term "small" is used to express the fact that even two nodes that appear to be widely separated are in fact connected one to another by just a few links. In the context of social network, this phenomenon has been popularized by the term "six degrees of separation"—the idea that any person in the world can be linked to any other person by roughly six connections.[38]

In 1999, Barabási and his collaborators discovered the existence of scale-free networks, which, even though they are highly clustered and present a short path length, differ from the small-world networks by the way they grow.[39] Scale-free networks emerge by the progressive addition of nodes to an existing graph and by introducing links to existing nodes with "preferential attachment". This notion refers to the fact that nodes will wish to link themselves to nodes that are already more connected. In other words, the more links a node has, the more it will get. The degree of connectivity in a scale-free network is described by a power law, described earlier. As a result, there is no "average" node: some hubs have a huge number of connections, whereas most nodes have only one or a few links.

The study of scale-free networks is of particular interest because of their potential to describe complex systems.[40] Social networks, the World Wide Web, the Internet, collaborations between Hollywood movie actors and the

peer-review of scientific literature are just a few examples of networks presenting a scale-free topology.

Scale-free networks exhibit some important characteristics:

- **They are aristocratic:** Random graphs and small-world networks are "egalitarian" as all nodes have roughly the same number of links. In contrast, scale-free networks are fundamentally "aristocratic". That is, scale-free networks present spectacular disparities because of the power law distribution of their links: a few elements—the hubs—possess most of the connections in the network.[41]
- **They are topologically robust:** A scale-free network is inherently resistant to random failure. A significant fraction of nodes (up to 80%) can be randomly removed without the network breaking apart.
- **Scale-free networks are vulnerable to deliberate attacks:** While a scale-free network is relatively resistant to random failure, it is highly sensitive to deliberate attacks targeting the nodes with most links. Removing 5 to 10% of the hubs simultaneously can lead to complete disintegration of the network.
- **The threshold-free nature of epidemics:** In a scale-free network, a virus (or anything that can spread across the network) is almost unstoppable, even if it is not very contagious. The explanation for this lies in the hub topology: thanks to their numerous links, hubs are among the first contaminated. Once infected, they quickly infect many other nodes. For example, there is evidence that the human sexual network is scale-free, hubs playing a unique role propagating AIDS and other sexually contagious diseases. This suggests that, as long as treatment resources are finite, we should primarily target people who are hubs of sexual activity. Of course, the difficulty sometimes resides in identifying who those hubs are.[42]

IMPLICATIONS FOR MULTILATERAL NEGOTIATIONS

Traditional rationalist approaches to problem solving at the international level are constrained because, as the political scientist Robert Jervis observed, "interconnections can defeat purposeful behaviour".[43] For

example, problems of armed violence and of individual and collective human insecurity are ultimately complex social phenomena—complex in the scientific sense that many different agents interact to produce global patterns of behaviour. Moreover, similar phenomena can be observed in some multilateral negotiations tasked with responding to global problems: those negotiations may also be viewed as complex systems. The question is: how could diplomats and policymakers benefit from these new understandings?

REFRAMING RESPONSES TO COMPLEX SOCIAL PHENOMENA: THE EXAMPLE OF SMALL ARMS DEMAND

This section explores how the scientific notions introduced earlier in this paper may concretely be used to help multilateral negotiators deal with specific disarmament issues by applying it to the proliferation of small arms and light weapons.

Curbing the spread of illicit guns is a difficult challenge in international security. Government cooperation in this area is already underway, and has focused on what is often described as *supply-side* measures. Broadly, supply-side measures are "steps to control the flows of arms into, and their availability within, certain settings".[44] Multilateral efforts, as shown by agreements like the Vienna Firearms Protocol and the 2001 UN Programme of Action on the illicit trade of small arms and light weapons in all its aspects, have focused on trying, predominantly through legal and regulatory means, to stop weapons being produced, circulated and used illicitly.[45]

Less well understood are the factors that drive *demand* for small arms and how these interact, both with each other and supply-side factors.[46] Developing such an understanding is important. If policy makers do not understand *why* people want to obtain and use illicit guns—and respond accordingly—supply-side measures alone are like trying to pump the water out of a basement without turning off the broken mains pipe flooding it.

While supply- and demand-side labels are convenient, they have led to confusion among some multilateral practitioners because of their association with conventional economic models. The problem is that these models, which assume that supply- and demand-side factors interact to achieve market equilibrium, fail to adequately describe many social phenomena that have epidemic characteristics. This includes the spread of

small arms and light weapons. In particular, orthodox economic theory assumes that agents, regardless of how others behave, have fixed preferences and rationally maximize their "utility".

Yet we know this to be a poor description of the real world. In many cases, others *do* affect our preferences, and this is likely to be especially true where perceptions of security or insecurity are concerned that might lead us to want to have a gun. Social interactions matter: our choices tend to be affected by what those around us are doing—not least if we think they are armed, or if their fear of those who are armed with illicit guns influences us. And, armed violence may not be rationally planned or "premeditated" but can be responses to the actions of others or perceptions about other people's behaviour.

Starting from the assumption that, if we want to understand social phenomena, we need to take into account social interactions and their influence on our preferences, we have developed a mathematical model in order to try to deepen our understanding of the fundamental mechanisms that drive illicit small arms and light weapons proliferation.[47]

The model is adapted from Campbell and Ormerod's analysis of social interaction and the dynamics of crime. What is striking about their analysis is its different methodological approach to understanding the process by which crime rates increase (or decrease) across populations over time. The approach they took is similar to that used in mathematical biology to describe how potential epidemics are either spread or contained in a population. Key to the model is the simulation of social interactions, which is not taken into account in orthodox economic explanations.

To see how the approach works, consider that Campbell and Ormerod divided the population in their model into three groups. The first group (called "N") is made up of people who are not susceptible to becoming criminals. We can speculate about who might be in this group—young mothers, old-age pensioners—but this is not the purpose of the model whose aim is rather to illustrate the dynamics of flow between the three populations. The second group (called "C") is comprised of those engaged in criminal behaviour. The third group (called "S"), includes everyone who is not in one of the two other groups, N or C, and consists of people *susceptible* to criminal behaviour. A system of non-linear differential equations describes the flows between these groups.

Ormerod and Campbell observed that social interactions "generate considerable nonlinearities in the level of crime associated with different combinations of the parameters, a point which might underlie the wide differences which are reported in the empirical literature on the effects of various factors of crime". Moreover, they concluded that:

> The social interaction factors also give a clear guideline for policy. The bifurcations in the model, and hence the existence of very high crime equilibria, depend upon these factors. Policies which reinforce respectable community values and which provide strong non-criminal role models for those agents who are at any point in time most susceptible to commit crime could have quite dramatic effects in reducing crime levels in high crime areas, as well as preventing explosions in crime in relatively low crime areas.[48]

Models like the one Campbell and Ormerod developed for analysing crime are useful tools both for researchers and policy makers in evaluating how interactions matter to the emergence of other social phenomena. And, as social interactions may lead to emergent behaviours (like crime waves) rather than the linear extrapolations policy makers anticipate, these kinds of model could be used as decision-making aids for multilateral policy-making to calibrate responses to problems when acting on the basis of intuition or precedent may actually be counter-productive.

It is important to recognize, however, that this approach is not the same as prediction:

> the detailed behavior of a [complex adaptive system (CAS)] is fundamentally unpredictable. It is not a question of better understandings of the agents, better models, or faster computing; you simply cannot reliably predict the detailed behavior of a CAS through analysis. You have to let the system run to see what happens. The implications of this are that we can never hope to predict the detailed behavior of a human system. Still, despite this lack of detailed predictability, it is often possible to make generally true, practically useful statements about the behavior of a CAS.[49]

Nevertheless, the extension of knowledge complexity science offers would be a significant leap forward: better methods than anecdotal comparison are needed in order to ascertain to what extent actions can effectively carry

over from one context to another. Models of the kind described here illustrate how small initial changes may lead to very dramatic change—Malcolm Gladwell's "tipping points". As Campbell and Ormerod have pointed out in the context of violent crime, it means that "two populations, whose circumstances are very similar but who happen to lie on either side of the critical point, will end up with dramatically different crime rates."

Our own work is detailed later in this volume in a chapter by Aurélia Merçay that sets out a model describing the dynamics of small arms proliferation. Its ultimate aim is to contribute to a better understanding of the types of positive and negative incentive that work in deterring the spread of illicit weapons within a population. Complexity in the small arms demand context means that multilateral policy prescriptions will not necessarily have analogous impact in differing situations because *history matters*. Each system has multiple equilibrium points that depend upon what has occurred before. These points are always evolving under the effect of external factors.

Such an approach also has implications for gun policy research. As alluded to above, it helps to show that orthodox economic explanations not only fail to describe the spread of illicit small arms, they may actually be very misleading in assuming a single equilibrium point. Beyond this, looking at the "demand optic" from the perspective of modelling social interactions indicates, ironically, that all-embracing theories of causality in understanding the spread of small arms should be viewed with scepticism. Drawing meaningful comparisons between non-linear systems with a view to extrapolating theory with specific predictive power may be quite hopeless. However, this is not because these social interactions cannot be understood. It is because events unfold in dramatically different ways depending on very small changes: the unpredictability is ingrained.

Multilateral policy makers could be more effective in their endeavours through, on the one hand, fully appreciating the limits of their capacity to predictably influence events through "top–down" approaches and, on the other, recognizing that, in interdependent systems, the range of policy alternatives (that is, means to influence behaviour) is potentially wider than often thought.

Effective efforts to respond to human costs of armed violence may, indeed, have less to do with traditional prescriptions to ban, regulate or restrict

weapons than broader efforts to reduce insecurity by leaning more heavily on other dimensions such as development and public health. The economist Steven Levitt, for instance, has argued (somewhat controversially) that New York's falling murder rate during the 1990s probably had less to do with the zero-tolerance policies of the city's police than with the legalization of abortion in the early 1970s: many of the least socio-economically fortunate—who would be more likely to turn to crime—were simply not born.[50] This explanation is empirically quite robust, and so unorthodox by the standards of hitherto prevailing arguments that it did not appear to have previously been considered by crime prevention "experts" at all.

Understanding negotiations as potentially complex systems

The dynamics of complex social phenomena are not limited in relevance to better understanding the *substance* of multilateral negotiating work, however. Multilateral negotiations themselves could also be regarded as complex systems.

Multilateral negotiations are unusual and, in many ways, remarkable human systems. Most activities involving large numbers of people in making decisions collectively are either events intended to be zero sum (like battles, sports games or auctions) or have thresholds for decision making that fall well short of consensus (electoral majorities, for instance). In contrast, these days multilateral disarmament and arms control negotiations often involve hundreds of direct participants with outcomes expected to be non-zero sum while remaining consensus based. When other participants, like those working on these issues in national capitals, are added, the total number of individuals influencing a multilateral negotiation could run into the thousands. Moreover, multilateral negotiations are not singular events, but rather unfold over time.

Why is this significant? It is significant because history matters. Like other social phenomena this chapter has considered, we know that when many individual agents interact with one another completely new and unexpected modes of behaviour can arise at the level of the group that are not necessarily directed, but emerge spontaneously.

This poses a challenge for multilateral practitioners for two reasons. First, like all human beings they are used to thinking about negotiating in linear

ways. This is not surprising: in fact, evolutionary psychologists have argued that the ability to intuitively solve non-linear problems was not a cognitive trait our ancestors ever needed. In contrast, we have an array of well-documented intuitive cognitive faculties hard-wired into all of us that are well suited for linear problem solving.[51]

Our shortcomings in comprehending non-linear problems are easily demonstrated through the paper-folding example shown in Box 7.3.

Examples of this type illustrate the difficulties human beings have in intuitively grasping that they are dealing with non-linear situations or problems. Recently, when we posed this problem to a gathering of around 50 multilateral diplomats and others, none were able to answer it correctly.[52]

The second reason is that if multilateral negotiations *are* complex social systems, unexpected behaviours may emerge, with unintended consequences. In the first volume of the *Disarmament as Humanitarian Action* project's work it was argued that many features of multilateral practitioners' community of practice are not "designed-in", and may be unproductive.[53] The possibility that some behaviours in multilateral negotiations are emergent properties resulting from interactions among agents composing that system rather than necessarily the consequence of intentional action is consistent with that analysis.

Box 7.3. A problem of comprehension

People find non-linear phenomena highly counter-intuitive. This can be illustrated by posing a simple problem: first, take an ordinary sheet of paper and assume that it can be folded in half an unlimited number of times if we want (in reality, this is hard to do more than a few times because of the difficulties in compressing the paper. However, we will overlook that for this thought experiment). Next, fold the paper in half. This is one fold.

How thick would the piece of paper be after 10 folds? How about 30 folds? And, how many times would the paper need to be folded to reach the sun? The answers are provided in Box 7.4 on page 156.

Complexity means that social interactions sometimes lead to huge changes in the organization of a system. Certainly, the *number* of interacting actors or agents matters in a social situation, something psychologists and anthropologists have long realized independent of complexity theory.[54] The evolutionary psychologist Robin Dunbar, for example, has built a case that the ability of individual human beings to manage social relationships is limited to around 150 people.[55] This approximate number represents all of our social relationships, not just those with negotiating colleagues. Beyond that, an individual's ability to maintain and keep accurate track of her social relationships and, just as importantly, the relationships *among* them, becomes increasingly difficult. This is important in multilateral work because negotiating interactions are set against a fabric of social trust between individuals, something diplomats sometimes refer to as "negotiating in good faith".

Dunbar also noted that the social cohesion of groups larger than 150 begins to break down, often leading to fission into smaller groups. There is, indeed, a wide range of evidence to support this case. Dunbar and other researchers found many historical examples including optimum sizes for military formations throughout different periods and even the Hutterites, a religious group farming in South Dakota and Manitoba. The Hutterites regard 150 people as the limiting size for their communities, and split into daughter communities at this point because of acknowledged difficulties in maintaining social cohesion beyond that threshold.[56]

We live in a world in which many interested actors must be accommodated in multilateral negotiations. Moreover, there is unlikely to be a magic negotiation group "size". Nevertheless, group size may be a useful place to start in looking at improving what could be described as the cognitive ergonomics of multilateral diplomacy. Small groups might be more useful for work like drafting or informal trust building, in which complex dynamics may not be helpful. Larger groups possess the cognitive diversity small groups often lack and could be better for making relatively bounded direction-setting decisions, for instance. Formally tailoring group size to the type of work that needs to be done in different phases of a negotiation, rather than the other way around, could make multilateral processes more productive.

Box 7.4. Solution to the paper folding problem

The odds are that you, the reader, answered the paper-folding problem posed earlier in this section incorrectly. Where almost everyone goes wrong on this problem is that they intuit that the increase in thickness is a linear progression. In fact, the increase in thickness each time the paper is folded is exponential, one kind of non-linear progression.[57] The answers are:

10 folds—width of an average human hand
30 folds—outer limits of the Earth's atmosphere
50 folds—distance to the sun
60 folds—size of the solar system
100 folds—the approximate radius of the known universe.

A visual depiction (Figure 7.6) makes this counter-intuitive picture clearer.

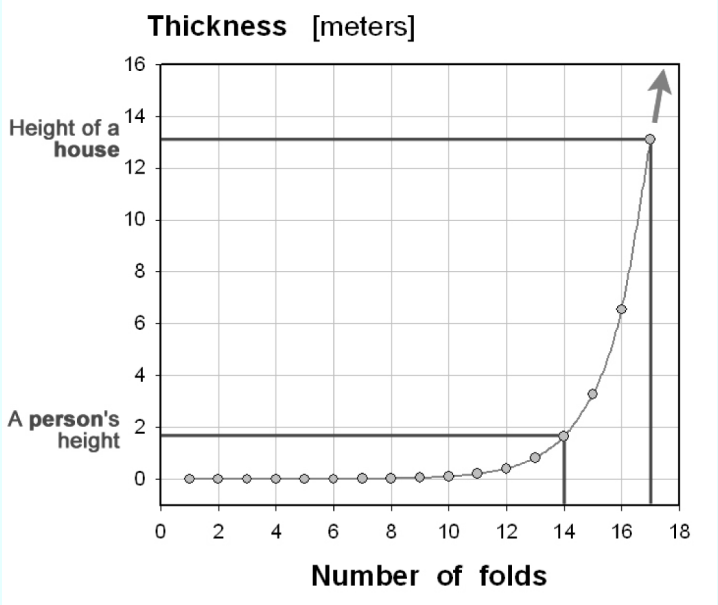

Figure 7.6. Thickness of a folded sheet of paper.

CONCLUSION

This chapter began with a quotation from *Alice in Wonderland*: "It sounded like an excellent plan, no doubt, and very neatly and simply arranged. The only difficulty was, she had not the smallest idea how to set about it."

"Setting about it" (to paraphrase Alice) could be informed by many of the advances in our understanding of complex systems that have taken place in contemporary physics in recent years and the cascade of useful research that has resulted in other fields, including population biology, demographics, neuroeconomics and behavioural economics. This is because, regardless of the appeal of multilateral solutions like arms control treaties in terms of neatness or simplicity, it is clear that many of the problems that governments and their negotiators at the multilateral level try to deal with are anything *but* "very neatly and simply arranged".

The counter-intuitive characteristics of complex phenomena—including aspects of tackling problems of armed violence involving many interacting actors—require different tools and alternative ways of framing problems that are traditionally regarded in command-and-control terms.

Bismarck is reputed to have said that "The less people know about how sausages and laws are made, the better they'll sleep at night." At the multilateral level, diplomats often seem to be much more concerned that their sausages are made the traditional way, rather than what is in them, where the ingredients came from or whether they really meet a need. Uncomfortably often, they arrive at negotiated prescriptions for global problems too exhausted by the process of reaching agreement to worry about whether the response they have crafted is optimal. Not least, multilateral practitioners need to know that what is "complicated" is not "complex" because complexity means that completely unexpected behaviour arising at the level of the group can offset the gains they hope to achieve through collective action.

This chapter has illustrated that phase transitions, self-organized criticality, collective behaviour and scale-free networks are not just loose comparisons describing human systems—they are features of large-scale society. As a matter of fact, alongside policy makers, the social sciences could clearly benefit from the advances in physics by considering how they might be applied for the study of social organizations, as is already occurring in other

disciplines. Although they have inevitable limits, new tools such as agent-based models have proven invaluable in simulating situations in which conventional wisdom or human intuition are misguided.

A physics of society—or indeed a physics of diplomacy—will never tell us what the right thing to do is.[58] Making value judgements, indeed, is obviously not the role of science; its only function is to describe how things are. Contemporary physics clearly has things to contribute, though, which could helpfully challenge diplomats' preconceptions about how human society works and, in the process, contribute to making multilateral responses more effective.

Notes

1 John Borrie, "Rethinking Multilateral Negotiations: Disarmament as Humanitarian Action", in John Borrie and Vanessa Martin Randin (eds), *Alternative Approaches in Multilateral Decision Making: Disarmament as Humanitarian Action*, UNIDIR, 2005, pp. 15–17.

2 See the work of Wendell Jones, from whom some of the ideas in this paper are drawn. For instance, "Complex Adaptive Systems", available online at <www.beyondintractability.org/m/complex_adaptive_systems.jsp>.

3 Jake Chapman, *System Failure: Why Governments Must Learn to Think Differently*, 2nd ed., Demos, 2004, p. 11.

4 See John Borrie, "Rethinking Multilateral Negotiations: Disarmament as Humanitarian Action", in John Borrie and Vanessa Martin Randin (eds), *Alternative Approaches in Multilateral Decision Making: Disarmament as Humanitarian Action*, UNIDIR, 2005.

5 See Wendell Jones and Scott Hughes, "Complexity, Conflict Resolution, and How the Mind Works", *Conflict Resolution Quarterly*, vol. 20, no. 4, Wiley, 2003, pp. 485–494. This article is available online at <www.sandia.gov/ACG/documents/sandreports/complex_SAND_ 04.pdf>.

6 In Aristotelian philosophy, the universe was described as a static and finite thing in which the Earth occupied the central position. Aristotle also believed that the laws governing the motion of the heavens were different from those governing motion on the Earth: objects only moved if an external force was applied. Moreover, all physical things

were made up of four elements: earth, water, fire and air; the human body contained four kinds of liquid (blood, phlegm, yellow bile, and black bile) and illness was caused by the imbalance of these "humours". Unfortunately, the natural laws defined by Aristotle were erroneous in many cases.

7 For a useful general history see John Gribbin, *Science: a History*, Penguin, 2002.

8 Aristotle's principle of "final cause" expressed the idea that everything had a purpose waiting to be actualized. Thinkers of the seventeenth century contested this concept, which like almost all natural laws introduced by the Greek philosopher, was eventually proved to be erroneous.

9 For an excellent—and very entertaining—account of these developments see Timothy Ferris, *Coming of Age in the Milky Way*, William Morrow, 1988.

10 See Wendell Jones and Scott Hughes, "Complexity, Conflict Resolution, and How the Mind Works", *Conflict Resolution Quarterly*, vol. 20, no. 4, Wiley, 2003.

11 James C. Maxwell (1831–1879) was a Scottish theoretical physicist best known for his formulation of electromagnetic theory and his work in thermodynamics. He is considered to be the scientist of the nineteenth century who had the most significant influence on twentieth century physics. Einstein described his work as the "most profound and the most fruitful that physics has experienced since the time of Newton".

12 See Philip Ball, *Critical Mass: How One Thing Leads To Another*, Arrow Books, 2004, p. 52.

13 For a brief overview see Michael Howard, *War in European History*, Oxford University Press, 1976.

14 See Peter Bernstein, *Against the Gods: the Remarkable Story of Risk*, John Wiley and Sons, 1996.

15 See Philip Ball, *Critical Mass: How One Thing Leads To Another*, Arrow Books, 2004, p. 57.

16 Henry Plotkin, *The Imagined World Made Real: Towards a Natural Science of Culture*, Penguin, 2002, p. 12.

17 Philip Ball, "The Physical Modelling of Human Social Systems", *Complexus*, vol. 1, no. 4, Karger, 2003, p. 191.

18 See John Borrie, "Rethinking Multilateral Negotiations: Disarmament as Humanitarian Action", in John Borrie and Vanessa Martin Randin (eds), *Alternative Approaches in Multilateral Decision Making: Disarmament as Humanitarian Action*, UNIDIR, 2005.

19 See Edward Wilson, *Consilience*: *The Unity of Knowledge*, Abacus, 1998.

20 Malcolm Gladwell, *The Tipping Point: How Little Things Can Make a Big Difference*, Abacus, 2003.

21 The British physicist Lewis Fry Richardson was the first scientist to study fatality statistics of wars. In the 1920s, he plotted on a graph the data of 82 wars fought since 1820 and found that the mathematical relationship between the number of conflicts and the size of the conflicts was a power law. See Lewis Fry Richardson, *Statistics of Deadly Quarrels*, Boxwood Press, 1960. Aaron Clauset and Maxwell Young observed the same kind of behaviour by studying the fatalities from acts of terrorism. See Aaron Clauset and Maxwell Young, "Scale Invariance in Global Terrorism", available online at <http://xxx.lanl.gov/pdf/physics/0502014/>. Neil Johnson and Michael Spagat, who focused their analyses on Colombia and Iraq, highlighted power law relationships as well. See Neil Johnson and Michael Spagat, "From Old Wars to New Wars and Global Terrorism", available online at <http://xxx.lanl.gov/pdf/physics/0506213/>.

22 These figures are extrapolated from data presented in Neil Johnson and Michael Spagat, "From Old Wars to New Wars and Global Terrorism", available online at <http://xxx.lanl.gov/pdf/physics/0506213/>.

23 For examples of agent-based models, see Robert Axelrod, *The Complexity of Cooperation*, Princeton University Press, 1997; Lars-Erik Cederman, "Modeling the Size of Wars", *American Political Science Review*, vol. 97, no. 1, American Political Science Association, 2003, pp. 135–150; and John Miller and Scott Page, "The Standing Ovation Problem", *Complexity*, vol. 9, no. 5, Wiley, 2004, pp. 8–16.

24 See Thomas Schelling, "Dynamic Models of Segregation", *Journal of Mathematical Sociology*, 1971, vol. 1, no. 1, Taylor and Francis, 1971, pp. 143–186.

25 Philip Ball, "The Physical Modelling of Human Social Systems", *Complexus*, vol. 1, no. 4, Karger, 2003, p. 204.

26 Ibid., p. 205.

27 See Paul Ormerod, *Butterfly Economics*, Faber and Faber, 1998. The model of crime dynamics is developed in chapter 3. In the same book, chapter 4 presents a model of the evolution of family structures in a social context. For a model of traffic, see Kai Nagel and Michael Schreckenberg, "A Cellular Automaton Model for Freeway Traffic",

Journal de Physique I, vol. 2, no. 12, EDP Sciences, 1992, pp. 2221–2230.

28 See Philip Ball, *Critical Mass: How One Thing Leads To Another*, Arrow Books, 2004, p. 403.

29 See John Gribbin, *Deep Simplicity: Chaos, Complexity and the Emergence of Life*, Penguin, 2004, chp. 5.

30 Philip Ball, "The Physical Modelling of Human Social Systems", *Complexus*, vol. 1, no. 4, Karger, 2003, p. 203.

31 See Wendell Jones, "Complex Adaptive Systems", p. 2, <www.beyondintractability.org/m/complex_adaptive_systems.jsp>.

32 For a useful and comprehensive introduction to this concept and its application see Steven Johnson, *Emergence*, Penguin, 2001.

33 See, for example, Craig Reynolds, "Flocks, Herds and Schools: a Distributed Behavioral Model", *Computer Graphics*, vol. 21, no. 4, pp. 25–34, <www.red3d.com/cwr/papers/1987/boids.html>.

34 Ernst Fehr and Urs Fischbacher, "Social Norms and Human Cooperation", *Trends in Cognitive Sciences*, vol. 8, no. 4, Elsevier, 2004, p. 185.

35 See Mark Buchanan, *Ubiquity: The Science of History or Why the World is Simpler Than We Think*, Phoenix, 2004, p. 91.

36 Random fluctuations do not follow any rules. Thus, when a choice is dictated by random fluctuations, it is impossible to predict what the outcome of the system will be.

37 Steven Strogatz is a professor of mathematics at Cornell University. In 1998, in conjunction with his graduate student, Duncan Watts, he formalized the small-world phenomenon in a celebrated paper (see Duncan Watts and Steven Strogatz, "Collective Dynamics of 'Small-world' Networks", *Nature*, vol. 393, no. 6684, Nature Publishing Group, 1998, pp. 440–442). Duncan Watts is now a Columbia University sociology professor. He is the author of *Six Degrees: The Science of a Connected Age*, W.W. Norton, 2003.

38 The theory of the six degrees of separation was first proposed in 1929 by the Hungarian writer Frigyes Karinthy in a short story called "Chains". Almost three decades later, in 1967, the concept was rediscovered by Stanley Milgram, a psychologist at Harvard University, whose goal was to find the "distance" between any two people in the United States. To do so, he randomly selected people from various places in the United States to send postcards to one of two targets: one in Massachusetts and one in the American Midwest. Recipients could only send their letter on to somebody whom they knew on a first-name

basis and who they thought was most likely to know the target personally. That person would do the same, and so on, until it was delivered to the target himself.
When Milgram asked people how many steps it would take, they typically expected the chain to include a hundred intermediaries or more. It turned out that the median number of intermediate people was only 5.5, a number coincidentally very close to Karinthy's proposition. These findings suggest that "not only are we connected, but we live in a world in which no one is more than a few handshakes from anyone else. That is, we live in a *small world."* See Albert-László Barabási, *Linked: How Everything Is Connected to Everything Else and What It Means for Business*, *Science and Everyday Life*, Plume, Penguin Group, 2003, p. 30.

39 Albert-László Barabási is a professor of physics at the University of Notre Dame and directs research on complex networks. He is the author of *Linked: How Everything Is Connected to Everything Else and What It Means for Business*, *Science and Everyday Life*, Plume, Penguin Group, 2003.

40 See Luís Amaral, Antonio Scala, Marc Barthélémy, and H. Eugene Stanley, "Classes of Small-world Networks", *Proceedings of the National Academy of Science*, vol. 97, no. 21, National Academy of Sciences, 2000, pp. 11149–11152.

41 See Mark Buchanan, *Ubiquity: The Science of History or Why the World is Simpler Than We Think*, Phoenix, 2004, p. 124.

42 See Albert-László Barabási, *Linked: How Everything Is Connected to Everything Else and What It Means for Business*, *Science and Everyday Life*, Plume, Penguin Group, 2003, pp. 123–142.

43 Robert Jervis, *System Effects: Complexity in Political and Social Life*, Princeton University Press, 1997, p. 18.

44 Geneva Centre for Humanitarian Dialogue, *Missing Pieces: Directions for Reducing Gun Violence through the UN Process on Small Arms Control*, 2005, p. 93.

45 The 2001 (Vienna Firearms) Protocol against the Illicit Manufacturing of and Trafficking in Firearms, Their Parts and Components and Ammunition, Supplementing the United Nations Convention against Transnational Organized Crime (the Firearms Protocol), entered into force in July 2005.

46 See David Atwood, Anne-Kathrin Glatz and Robert Muggah, *Demanding Attention: Addressing the Dynamics of Small Arms*

Demand, Small Arms Survey/Quaker United Nations Office, Occasional Paper no. 18, 2006.

47 See Aurélia Merçay, "Non-linear Modelling of Small Arms Proliferation", in this volume.

48 Michael Campbell and Paul Ormerod, "Social Interaction and the Dynamics of Crime", Volterra Consulting Ltd., Research Paper, undated, <www.volterra.co.uk/Docs/crime.pdf>.

49 Paul Plsek, "Some Emerging Principles for Managers of Complex Adaptive Systems (CAS)", <www.directedcreativity.com/pages/ComplexityWP.html>.

50 See Steven Levitt and Stephen Dubner, *Freakonomics: A Rogue Economist Explores the Hidden Side of Everything*, Penguin/Allen Lane, 2005.

51 There has been a huge amount of literature—and sometimes a fair degree of controversy—generated on these issues over the last decade. One very readable and provocative introduction is Steven Pinker, *The Blank Slate: The Modern Denial of Human Nature*, Penguin, 2002. For a useful overview of the main themes for research in the evolutionary psychology field, see Louise Barrett, Robin Dunbar and John Lycett, *Human Evolutionary Psychology*, Palgrave, 2002.

52 A report of this meeting is available online at <www.unidir.ch/html/en/DHA2_seminar.html>.

53 See Vanessa Martin Randin and John Borrie, "A Comparison between Arms Control and other Multilateral Negotiation Processes", in John Borrie and Vanessa Martin Randin (eds), *Alternative Approaches in Multilateral Decision Making: Disarmament as Humanitarian Action*, UNIDIR, 2005, pp. 67–129.

54 For a brief overview of work in this areas since the 1950s, see Louise Barrett, Robin Dunbar and John Lycett, *Human Evolutionary Psychology*, Palgrave, 2002, p. 248.

55 A key feature of Dunbar's thinking is that one feature of language is that of social grooming, and that it enabled human beings to sustain more social relationships than other primates. Ibid., pp. 324–328.

56 Robin Dunbar, "The Co-evolution of Neocortical Size, Group Size and Language in Humans", *Behavioural and Brain Sciences*, vol. 16, no. 4, Cambridge University Press, 1993, p. 687.

57 See "The End of the Line", *The Economist,* 15 July 1995. A similar explanation can be found online at <http://raju.varghese.org/articles/powers2.html>.

[58] See Philip Ball, *Critical Mass: How One Thing Leads To Another*, Arrow Books, 2004, p. 576.

CHAPTER 8

NON-LINEAR MODELLING OF SMALL ARMS PROLIFERATION

Aurélia Merçay[1]

SUMMARY

Innovative approaches from the natural sciences have profound implications for our understanding of social phenomena in policy-making contexts, including the effects of armed violence. The model presented here is a concrete example of how advances in science—and especially complexity theory—can reframe the way multilateral disarmament and arms control negotiators think about some issues they have to deal with. Inspired by techniques used in physics and biology, this model is a conceptual tool whose aim, rather than depicting a particular set of observed situations or making predictions, is to develop our understanding of the fundamental mechanisms driving the proliferation of small arms through a population.

INTRODUCTION

Armed violence is estimated to kill 300,000 people each year in conflict settings and another 200,000 in countries ordinarily classified as "peaceful".[2] The number of survivors, often suffering injuries with lifelong consequences, is likely even greater. In addition to this direct human cost, armed violence has other profound public health and developmental costs for affected societies—impacting on economic activity, diverting public resources, damaging social structures and depleting social capital.[3]

Although we know that possessing a firearm does not necessarily lead people to use guns for illegal purposes, there is evidence that the access to firearms is positively correlated with the national rates of homicide and suicide as well as the proportions of homicides and suicides committed with a gun.[4] Thus, if we want to achieve a significant and lasting reduction in

armed violence in a given context, we should identify the positive and negative incentives affecting people's choices about whether or not to become gun owners.

By highlighting the core factors that influence the demand for small arms and by describing their global (and often unintuitive) effects, the model described in this paper is a tool that will challenge conventional ideas that policy makers, diplomats and academics may have about the way small arms proliferate through a civilian population.

A central feature of the model, which breaks with traditional models that seek to describe "supply" and "demand", is the recognition that, if we want to understand social phenomena such as the spread of small arms, we need to take social interactions into account. As it will be seen later in the paper, this starting assumption generates significant non-linearities that account for sudden jumps, or so-called "phase transitions", between low levels and high levels of gun ownership in a society. Readers unfamiliar with these terms are advised to read the chapter in this volume entitled "A Physics of Diplomacy? The Dynamics of Complex Social Phenomena and their Implications for Multilateral Negotiations".

THE DYNAMICS OF SMALL ARMS PROLIFERATION

The spread of small arms and light weapons is a major policy challenge for the international community. In 2001, two initiatives aiming at countering the proliferation of small arms were agreed within the United Nations framework: the legally binding Protocol on Firearms to the Vienna Convention against Transnational Organized Crime[5] and, separately, a political document called the Programme of Action (PoA) to prevent, combat and eradicate the illicit trade in small arms and light weapons.[6] These agreements, which included a broad range of measures to enhance controls on transfers, availability and use of small arms, were largely *supply*-side oriented.

Today, there is increasing concern that controlling and regulating small arms production, transfer, brokering and misuse is likely to meet with scant success if efforts are not made to identify and tackle the conditions that encourage people to acquire and use guns.[7] Indeed, it has been observed that:

> a prominent reason for the large numbers of small arms and light weapons in circulation is the vigorous demand for them. Much of that demand is inevitably linked to criminality, individual and collective. In addition, however, demand for small arms and light weapons is widely linked to particular social, economic and political conditions.[8]

Efforts integrating both supply and demand approaches are needed in order to address the spread of small arms and light weapons effectively. This implies, in particular, extending the scope of action more broadly to dimensions such as insecurity, social and economic deprivation and human rights abuses. An encouraging step in this direction was the adoption in 2005 by the UN General Assembly of Resolution 60/68,[9] which drew attention to the linkages between development and small arms. Identifying the factors that incite people to acquire a gun and understanding the mechanisms by which the global proportion of gun owners evolve in a population will make small arms reduction efforts more durable and effective.

With this goal in mind, different strategies can be explored. Supply and demand issues have traditionally been studied along economic lines. Dating back to the late-nineteenth century, the model of supply and demand developed by Alfred Marshall is still considered today by many as a fundamental concept of modern economics. Basically, what it says is that the price of a good—in our case, the price of a gun—is determined by the point at which the quantities supplied and demanded are the same. In other terms, this point, called market equilibrium, is the quantity of a good that producers are willing to sell at a given price and the quantity of a good that consumers are willing and able to purchase.

Although conventional economic models are valuable tools when they are used by specialists who understand their limitations, it should be kept in mind that these models often fail to describe how the real world works. This should make us cautious when applying this kind of model to studying social phenomena such as the spread of small arms and light weapons through a population. The major weaknesses presented by conventional economic models include underlying assumptions of:

- **Rationality:** People are considered as rational beings, each making calculations to maximize their own utility. This assumption

has been widely criticized as it poorly describes the way people actually behave. It has been observed that:

> One doesn't need to add much detail to a given decision problem before the calculation of the optimal action becomes extremely complicated. In a dynamic setting with many variables to choose, uncertainty about some of the key magnitudes, and strategic interaction with other actors, figuring out the optimal strategy can be beyond the capabilities of even the fastest computers. There is always a bit of culture shock as graduate students in their first year of an economics Ph.D. program are taught that ordinary people on the street make their decisions using algorithms with which these very smart and capable students had themselves been unfamiliar up until hearing today's lecture.[10]

- **Autonomous tastes and preferences:** Conventional economic theory assumes that the tastes and preferences of a given individual are autonomous of those of other people. Or, more precisely, the only way people influence each other is indirectly by the price mechanism. This is may be true in very specific situations, but in a wide range of circumstances—think about how fashions and ideas spread for example—our preferences are directly influenced by the behaviour of others.[11]
- **Stability and equilibrium:** The assumption that markets move automatically toward their equilibrium point goes against a large body of empirical observation showing that equilibria are exceptions rather than the rule. For instance, Kenneth Arrow, laureate of the Nobel Prize in Economics in 1972, described the volatility of financial markets as "an empirical refutation" of general equilibrium theory.[12]

Most economists are aware of these problems and efforts have been made to find alternative approaches, like the theory of bounded rationality, to overcome them. But the expansion of standard economic theories is limited in scope as the impact of social interactions is impossible—except in extremely simple situations—to formulate analytically.

Yet we know that social interactions play an essential role in the proliferation of small arms and light weapons. When it comes to deciding whether or not to become a gun owner, we are definitely influenced by the choice made by others. If most people around us think that their personal security is endangered and believe that the only way to provide for security

is to possess a firearm, it is likely that we start thinking the same way. Likewise, if owning a gun for criminal purposes develops into a social norm in a population, this may well affect our decision about whether to have a gun since the fear of social disapproval that might have prevented us doing so before no longer exists.

In a previous chapter, John Borrie and I introduced emerging concepts from the natural sciences and described why phase transitions, self-organized criticality, and complexity and network theory are relevant to the practice of multilateral negotiators.[13] Thanks to the new insights we described, much more realistic models can be developed in order to inform policy-making. What makes all the difference is the recognition that simulating interactions between agents—in our case, people—is important. Yet, social interactions modify the global properties of a system in a way that may be deeply counterintuitive, as will be shown later in this paper with the example of small arms proliferation.

A NON-LINEAR MODEL OF SMALL ARMS PROLIFERATION

General description of the model

The model presented in this paper aims to illustrate how small arms and light weapons may proliferate among a *civilian* population. Military personnel and others requiring guns for legitimate professional purposes are not taken into account in the model. This decision to limit the model to civilians is two-fold: first, according to a Small Arms Survey estimate, at least 60% of the global stockpile of 640 million guns is in civilian hands.[14] This percentage, which illustrates that civilian possession is not a minor phenomenon, stresses the need to understand better the factors that influence people's decisions about whether or not to become a gun owner.

Second, the lack of reliable and available data on legal and illegal civilian gun possession is a major obstacle for research on small arms proliferation. This means that even if governments provide information on the number of licensed small arms—and this is not always the case—the data furnished does not necessarily give an accurate picture of the number of small arms in civilian hands. A theoretical model like the one developed here is a useful extension of studies based on statistical data because it deepens our

understanding of the causal mechanisms underlying the proliferation of legal and illegal small arms through a civilian population.

The approach we have taken is largely inspired by the work of two British economists, Campbell and Ormerod, on the dynamics of crime.[15] The methodology they adopted is similar to that used in mathematical biology to describe how epidemics spread through a population. There are various vectors of disease transmission, but a fundamental mechanism is the transmission from one person to another through *social contact* (via the air, blood, saliva or other body fluids). For Campbell and Ormerod, the spread of crime, like the spread of an epidemic, is fundamentally a social process.

Social interactions matter greatly when it comes to understanding how a disease or crime spreads and they are likely to play a fundamental role in the process of small arms proliferation as well. Indeed, it is interesting to note that several studies make reference to the "contagious" nature of armed violence.[16] Likewise, the problem of small arms proliferation is often described in literature as an "epidemic" process. However, I am aware of no attempts to go beyond these simple analogies. The model outlined in this chapter, by using the methodology developed in biology, shows that it is clearly possible to go further than just making comparisons: a real quantitative analysis of the dynamics of small arms proliferation is feasible.

Broadly speaking, the model of small arms proliferation described below in detail, assumes that the population can be divided in three groups, which differ in their potential to become gun owners: the first group, called "N", is comprised of people who are not susceptible to acquiring a gun; the second group, called "S", is made up of people considered to be susceptible (that is people who are not yet but might become gun owners); finally, the third group, called "G", includes people who actually possess a gun.

Although the pertinence of dividing the population into such groups can be questioned, it should be kept in mind that the model is primarily a theoretical tool and, as such, its relevance is above all a matter of judgment. Of course we can make speculations about the kind of people we will find in each group—most children and old-age pensioners, for instance, may belong to the non-susceptible category—but this is not the goal of the model. Its aim is rather to illustrate how people, who are not confined to a given category, move from one group to another. The dynamics of flow

between the three groups depends in particular on social interactions between people. In the model, social influence operates in two different ways: first, the greater the proportion of the population that possess firearms, the more likely it is that people who are susceptible will actually become gun owners; second, the greater the proportion of the population who are not susceptible to acquiring guns, the greater the pressure on those who have them to give them up.

No single factor is responsible for small arms proliferation. Quite the contrary: the proportion of gun owners in a population is the global result of many interacting determinants, which are sometimes hard to identify and differentiate. The aim of the model is to extract the core elements that influence civilian demand for small arms. After examination of the literature,[17] eight external factors have been identified in addition to social interactions:

- **Culture of hunting and sport shooting.** Of course, the relevance of this factor differs from one population to another. But it is fair to say that in a number of countries, a tradition of hunting and sport shooting is a major factor driving civilian demand for small arms. If, for the case considered in the model, the culture of hunting and sport shooting is not relevant, the parameter's value can be set to zero.
- **Public and personal insecurity.** Deficiencies in states' internal security may lead people to conclude that their security depends on their own capacity to defend themselves or deter attack, thereby increasing the demand for small arms. More precisely, rather than the actual level of insecurity of a given situation, it is the *perception* that people have of their level of (in)security which is a fundamental driver of demand for firearms.[18]
- **Social and economic deprivation.** Even though social and economic deprivation does not necessarily result in a higher level of criminality and armed violence, there is evidence that these latter phenomena are more prominent in certain contexts. When people find themselves in a particularly unfavourable socio-economic situation, they may want to acquire small arms in the expectation these will offer them new possibilities. This can, of course, be a vicious cycle, as "The presence of arms undermines development, and persistent underdevelopment increases the

likelihood that small arms will become part of the long-term problem."[19]

- **Political motivations.** Politically motivated individuals or groups may want guns to fight against inequalities and human right abuses, as means to have access to government representation, or when involved in armed conflicts. This last aspect, as Muggah and Griffiths have described it, can have a strong impact on small arms proliferation: "Of the 30 to 50 conflicts that occurred each year between 1989 and 1995, more than 95% took place in developing countries. In these environments, small arms, not heavy weapons, are the predominant tools of conflict."[20]
- **Cultural meaning of small arms.** In many societies, guns have significant cultural meaning. Guns may be associated with prestige, wealth, power and masculinity, and are incentives that encourage people, and especially young men, to acquire and use small arms in order to achieve a particular status. Besides individual affirmation, guns sometimes play a role in reinforcing the membership of a given community.
- **Demographics.** There is evidence that people belonging to specific demographic groups, such as young men, are at dramatically higher risk of being perpetrators and victims of gun-related violence than others. In Colombia, for instance, men represent more than 90% of all firearm deaths and armed violence is responsible for shortening life expectancy of Colombian males by more than three years.[21] Globally, estimates show that half of firearm homicides involve men aged 15 to 29.[22] As pointed out by the Small Arms Survey, this distinctive gender and age pattern of contemporary violence seems to appear across different socio-economic contexts.[23]
- **Deterrence.** Deterrence refers to all of the negative incentives affecting people's choices about whether or not to become gun owners. This includes, in particular, gun laws and regulations, the costs of gun acquisition and ownership and penalties for illicit possession and misuse. However, it does not include the pressure of social stigmatization, which is represented in the model through the simulation of social interactions.
- **Availability of weapons.** This parameter, which reflects the level of difficulty faced by civilians wanting to acquire a gun can be set to any value between 0 and 1. Conceptually, if there is no access at all to firearms, the factor is set to 0. If, on the contrary, weapons

are widely available and affordable, the factor is set to 1. It should be kept in mind that, even if people do not have the financial resources to buy firearms, these can quite often either be stolen or illicitly produced.

As it has been described above, people move from one category to another, influenced, on one hand, by others' behaviour and, on the other hand, by external factors. This, for instance, can be illustrated by "non-susceptibles" becoming susceptible if the socio-economic context in which they live deteriorates. Likewise, influenced by a great proportion of gun owners in the population, "susceptibles" may ultimately decide to acquire firearms. As we will see, it is possible to go further than such qualitative statements about the way small arms proliferate through a civilian population as the formal model presented in the next section shows us.

Formalization

The mathematical model developed here is very similar to that built by Campbell and Ormerod for the analysis of crime dynamics. For the sake of simplicity and readability, some mathematical aspects have been omitted from the description that follows. Readers interested in these aspects and who seek more extensive information can consult Campbell and Ormerod's article "Social Interaction and the Dynamics of Crime".[24]

As explained in the preceding section, the population considered in the model—taken here to mean a country, a city or a neighbourhood—is divided into three groups: people who are not susceptible to becoming gun owners (N), people who are susceptible (S) and people who possess a firearm (G). Individuals switch from one group to another under the influence of various external parameters and social interactions. This leads to a dynamics of flows between groups (see Figure 8.1 overleaf), which can be formalized mathematically.

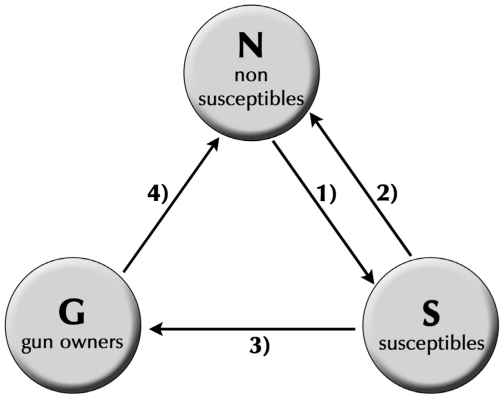

Figure 8.1. The model postulates that the population is divided into three groups ("non-susceptibles", "susceptibles" and gun owners), whose sizes change over time because of the flows of people between them.

Let us consider, for instance, the flow from non-susceptibles into the susceptible group. We assume the strength of this flow to be due to a global factor, called Ω_1, summarizing the overall effect of six underlying parameters: the culture of hunting and sport shooting, the level of public and personal insecurity, the level of social and economic deprivation, political motivations, the cultural meaning of small arms and the level of deterrence in the population considered.

In addition to that, the flow from non-susceptibles into susceptibles is also influenced by a demographic factor, called θ_{NS}, which represents the propensity of young men to become gun owners. This does not mean that each young man will necessarily become a gun owner. Quite the contrary: a young man can stay in the susceptible (or "at-risk") group, never become gun owner and go back to the non-susceptible category when old enough to exit the at-risk population. But it is also possible that, when in the susceptible category, young men, influenced by other factors, such as social and economic deprivation for instance, ultimately decide to acquire small arms (the global factor Ω_1 still applies to every gender).

The flow out of a particular group is assumed to be proportional to the size of the group.[25] Starting from that assumption, it is possible to explicitly formulate the four flows illustrated in Figure 8.1. The flow from non-susceptibles into susceptibles is then given by:

$$Flow_1 = (\Omega_1 + \theta_{NS})\, N$$

Identically, the flow from susceptibles back to the non-susceptible category can be written as:

$$Flow_2 = (\Omega_2 + \theta_{SN})\, S$$

The parameter Ω_2 represents the same underlying factors than Ω_1—culture of hunting and sport shooting, level of public and personal insecurity, and so on—but, contrary to Ω_1, it illustrates the negative incentives that discourage people from acquiring guns. Let us imagine, for example, that the level of insecurity decreases significantly in a population. Then, it is probable that people in the susceptible category will switch back to the non-susceptible group as they may not feel the need for a gun to protect themselves anymore. The second term in the equation, θ_{SN}, represents the demographic movement of men, who are old enough to exit the susceptible category.

The third flow corresponds to the movement from susceptibles to gun owners. Part of this flow is supposed to be due, again, to a global factor Ω_3 representing the overall effect of the six underlying parameters cited above. But the pressure on susceptibles to acquire small arms is also a social one: the greater the proportion of people who already possess a gun in the population, the more likely it is that susceptibles will imitate them. This can be formalized by the term σ_{SG} multiplied by G, where σ_{SG} represents the impact of social interactions and G is the proportion of gun owners in the population.

To complete the description of this flow, a multiplying factor μ representing the availability for weapons is added: conceptually, if no weapons are available, μ is set to zero and the flow between susceptibles and gun owners is non-existent; if there is a complete access to firearms, μ is set to 1, indicating that there is no restriction on the flow from susceptibles to gun owners. The third flow can therefore be written as:

$$Flow_3 = \mu\,(\Omega_3 + \sigma_{SG} \cdot G)\,S$$

Table 8.1. Summary of the mathematical terms used in the model

Flows	Factors		Effect represented
$N \rightarrow S$	Ω_1	Omega 1	Factor acting on the flow from non-susceptibles to susceptibles and representing the global effect of six underlying parameters: • culture of hunting and sport shooting; • public and personal insecurity; • social and economic deprivation; • political motivations; • cultural meaning of small arms; and • deterrence.
	θ_{NS}	Theta *NS*	Demographic movement of young men into the susceptible category.
$S \rightarrow N$	Ω_2	Omega 2	Factor summarizing the global effect of the six parameters cited above on the flow of susceptibles who go back to the non-susceptible category.
	θ_{SN}	Theta *SN*	Demographics movement of men old enough to exit the at-risk category.
$S \rightarrow G$	Ω_3	Omega 3	Factor representing the overall effect of the six parameters cited above on the decision of susceptibles whether or not to acquire a gun.
	σ_{SG}	Sigma *SG*	Impact of the number of gun owners in the population on the decision of susceptibles to become gun owners.
	μ	Mu	Parameter representing the availability of small arms.
$G \rightarrow N$	Ω_4	Omega 4	Factor representing the global impact of the six parameters cited above on the decision of gun owners to give up their arms.
	$\sigma_{GN}\,(N)$	Sigma *GN*	Impact of the number of non-susceptibles in the population on the decision of gun owners to give up their arms.

The last flow consists of people who possess guns and decide to give them up. Part of this flow is due to external influences already discussed above and symbolized by Ω_4 in the equation. We also allow for the effect of social disapproval, which is expressed as a function of the number of people who belong to the non-susceptible category. As Campbell and Ormerod have described it (*N* also standing for "non-susceptible" in their model of crime dynamics):

> the impact of disapproval is unlikely to be one of simple proportionality to N. Where N is already high, further increases may well have little effect in influencing the small number who are criminals, whilst for low values of N, in areas where crime has almost become the norm, further declines may also have little effect.[26]

By applying this logic to our model, the net effect of social interactions, $\sigma_{GN}(N)$, can be expressed by the following expression:

$$\sigma_{GN}(N) = \frac{\Sigma_{GN}}{1+\exp(-\rho\,(N-N_C))}$$

The parameter ρ represents the sensitivity of disapproval to changes in the value of *N* and N_C corresponds to the value of *N* for which social disapproval becomes significant. If, for instance, the proportion of non-susceptibles is much lower than N_C, then the function $\sigma_{GN}(N)$ tends towards zero and there is no social disapproval. If, however, the number of non-susceptibles is sufficiently high in the population, the impact of social disapproval becomes significant and influences gun owners' behaviour. The fourth flow is formulated mathematically as:

$$Flow_4 = (\Omega_4 + \sigma_{GN}(N))\,G$$

Now that all flows have been described, it is possible to formulate the global dynamics of the system by a set of equations. Let us consider, for instance, the variation of the proportion of non-susceptibles in the population. This can be written as:

$$\frac{dN}{dt} = -Flow_1 + Flow_2 + Flow_4$$

By expressing the flows in mathematical terms:

$$\frac{dN}{dt} = -(\Omega_1 + \theta_{NS})\, N + (\Omega_2 + \theta_{SN})\, S + (\Omega_4 + \sigma_{GN}(N))\, G \quad (1)$$

Likewise, the equations describing the evolution of the numbers of susceptibles and gun owners in the population can be written as:

$$\frac{dS}{dt} = (\Omega_1 + \theta_{NS})\, N - (\Omega_2 + \theta_{SN})\, S - \mu\, (\Omega_3 + \sigma_{SG} \cdot G)\, S \quad (2)$$

$$\frac{dG}{dt} = \mu\, (\Omega_3 + \sigma_{SG} \cdot G)\, S - (\Omega_4 + \sigma_{GN}(N))\, G \quad (3)$$

These three equations are completed by a mathematical identity stating that the proportions of non-susceptibles, susceptibles and gun owners add up to make the whole population:

$$N + S + G = 1 \quad (4)$$

Taken together, non-linear differential equations (1) to (3) and identity (4) describe the global dynamics of gun ownership in a population. The equilibrium points correspond to the situation where the flows between groups cancel each other out and the proportions of non-susceptibles, susceptibles and gun owners are fixed:

$$\frac{dN}{dt} = \frac{dS}{dt} = \frac{dG}{dt} = 0$$

In summary, the problem to solve consists of a system of four equations:

$$0 = -(\Omega_1 + \theta_{NS})\, N + (\Omega_2 + \theta_{SN})\, S + (\Omega_4 + \sigma_{GN}(N))\, G$$
$$0 = (\Omega_1 + \theta_{NS})\, N - (\Omega_2 + \theta_{SN})\, S - \mu\, (\Omega_3 + \sigma_{SG} \cdot G)\, S$$
$$0 = \mu\, (\Omega_3 + \sigma_{SG} \cdot G)\, S - (\Omega_4 + \sigma_{GN}(N))\, G$$
$$1 = N + S + G$$

Thanks to the development of numerical methods using computers, it is now feasible to solve such sets of non-linear differential equations quickly and accurately, which were difficult, if not impossible, to solve manually before. A Matlab[27] computer program was developed in order to perform this task.

EVALUATION OF THE MODEL

There are essential properties that the model has to preserve in order to be plausible. Our intuition tells us, for instance, that a higher level of insecurity, or increasing the level of socio-economic deprivation, should lead to a greater proportion of gun owners in the population. On the contrary, increasing deterrence should result in a decrease in the number of gun possessors. These intuitive relationships have to be preserved when running the model, and the first step in evaluating its validity is to investigate whether this is the case or not. The impact of each factor has been studied individually—one factor's value changes while the other factors are kept fixed—and the consistency of the results obtained has been examined. This analysis shows that intuitive relationships such as the ones cited above are conserved.

The second criterion is allowance for large variations across time and space of gun ownership. We know that populations living in apparently very similar contexts may sometimes present huge discrepancies in the number of people possessing a gun. This phenomenon has also been highlighted by Campbell and Ormerod in relation to the large variability of criminality:

> Even making due allowance for problems with the reliability of the data, there are massive variations, even at the level of individual housing estates which are virtually next door to each other. These variations are too large to be accounted for by differences in factors such as unemployment and the nature of the punishment system.[28]

The model should be able to produce substantive variations in the proportion of gun owners while the external factors, such as the level of insecurity, are almost kept fixed. This point has been investigated and the results obtained when running the model show that, in certain contexts, the same external conditions can be associated with two very different levels of gun ownership: a low and a high one. The results also illustrate that the

dynamics of small arms proliferation is not a regular process. The proportion of gun owners in a society evolves in a very non-linear way with sudden and dramatic changes between the two global levels of gun ownership. These large fluctuations, which are described in more detail in the following section of the paper, are generated by the simulation of social interactions between people.

The third property that the model must satisfy concerns the range of values that *N*, *S* and *G* can take. As they represent proportions of the population, meaningful solutions of *N*, *S* and *G* cannot be less than zero, or greater than one. Moreover, the mathematical identity stating that the three groups add up to 1 has to be respected. The results obtained have been examined and the proportions *N*, *S* and *G* fulfil the conditions required.

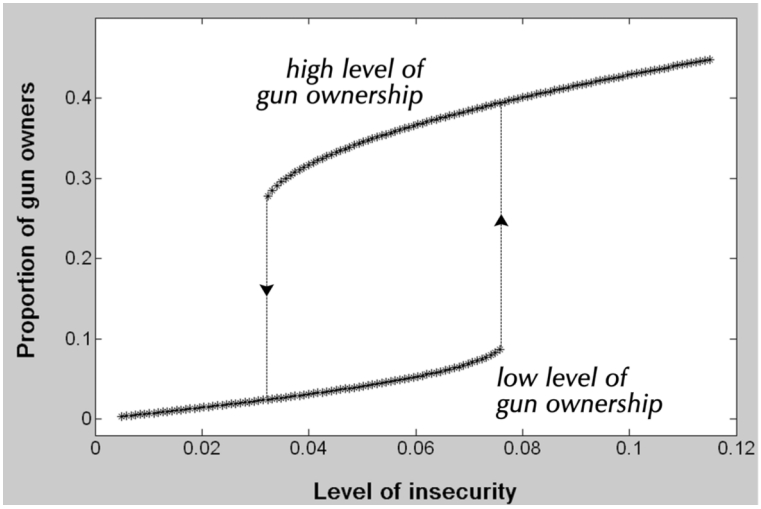

Figure 8.2. This graph represents the proportion of gun owners as a function of the level of insecurity. Logically, the qualitative effect of increasing the level of insecurity is to increase the proportion of gun owners in the population. The quantitative influence of such changes, however, is not as straightforward as could be expected: the model shows that a system can jump abruptly from a "lowly armed" to a "highly armed" population and the reverse.

RESULTS AND IMPLICATIONS

Figure 8.2 above shows the kind of results obtained when running the model. This graph illustrates the relationship between the level of insecurity and the proportion of gun owners in the population, while the other parameters are kept fixed. What the graph tells us is that two different levels of gun ownership are possible: one low (corresponding to the lower branch) and one high (represented by the upper branch).

Let us consider, for instance, a system situated at the extreme left of the lower branch. This corresponds to a population living in highly secure conditions and presenting a low number of people carrying a gun. Starting from this point, if the level of insecurity is increased little by little, the system moves along the lower branch and the proportion of gun owners increases slowly in the population. It is interesting to note that even after a substantial worsening in security conditions, the gun ownership level has increased but in a very moderate way. However, it does not work like that forever: when the end of the branch is reached, the system jumps suddenly from the lower to the upper branch. At this point, a tiny deterioration of the security level can bring about a tremendous change in the number of gun owners in the population.

Identically, if the system starts from the right extremity of the upper branch, improvements in security conditions lead at first to a limited decrease in the proportion of gun owners. It is only when the system reaches the downturn at the end of the upper branch that an abrupt jump is observed. At that point, a small improvement of security conditions makes the system switch from a society presenting a high level of gun ownership to a society with a low number of gun owners.

While the core of the model is based on simple assumptions, it produces results that are far from intuitive for the human brain, which unconsciously tends to analyse things in a linear way.[29] In reality, complex social phenomena, like the proliferation of small arms and light weapons, are all but linear: such a conclusion has important implications for gun policy. It means, in particular, that theories assuming a direct and linear relationship between cause and effect may not only fail to describe the spread of small arms, but may actually be very misleading when used as a starting assumption for the elaboration of policy prescriptions.

To sum up, the model shows that two populations living in exactly the same external environment can present two very different levels of gun ownership depending on where they start from (see Figure 8.3). In other words, for a wide range of conditions, there is not one but two states possible and the state in which a given population will end up depends on the past history of the system. This conclusion runs against most traditional economic theories, which assume the existence of a unique equilibrium point.

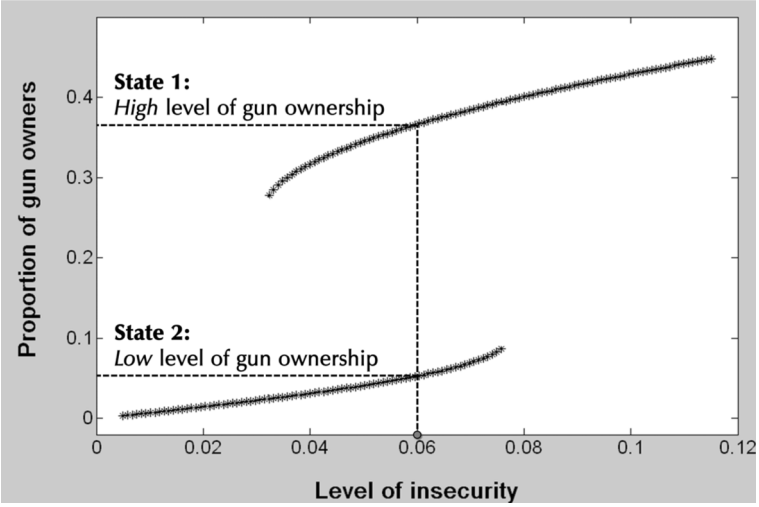

Figure 8.3. Two populations living in the same external context can present two very different levels of gun ownership.

Another important element put forward by the model is the notion of "tipping points". If the population is near the end of a branch, a small modification of any external parameters can bring about a dramatic change in the state of the system (see Figure 8.4 overleaf). Some populations with a relatively low number of gun owners may rapidly turn into "highly armed" societies, and a high rate of gun owners can abruptly collapse into "lowly armed" population states. These tipping points, which are a direct consequence of social interactions, have big implications for multilateral policy makers when formulating joint policy prescriptions to be implemented at the regional, sub-regional or national levels. It means, in

particular, that policy prescriptions (such as stiffer legal penalties for illegal gun possession, stricter controls on legally held firearms, money spent on social programmes in deprived areas or measures to enhance public and personal security) may not necessarily have the same impact when applied in different contexts. Ormerod explained that point by using the example of criminality in New York City during the 1990s:

> The social interaction effects in the model imply that large and seemingly inexplicable changes in crime rates take place. Inexplicable, that is, within the conventional mindset which looks for simple cause and effect mechanisms. If the actual process which generates crime in New York were close to a critical level, the introduction of a zero-tolerance could shift the system to a new, altogether lower level of crime. But this does not mean that the adoption of such a policy in other cities will necessarily have the same impact.[30]

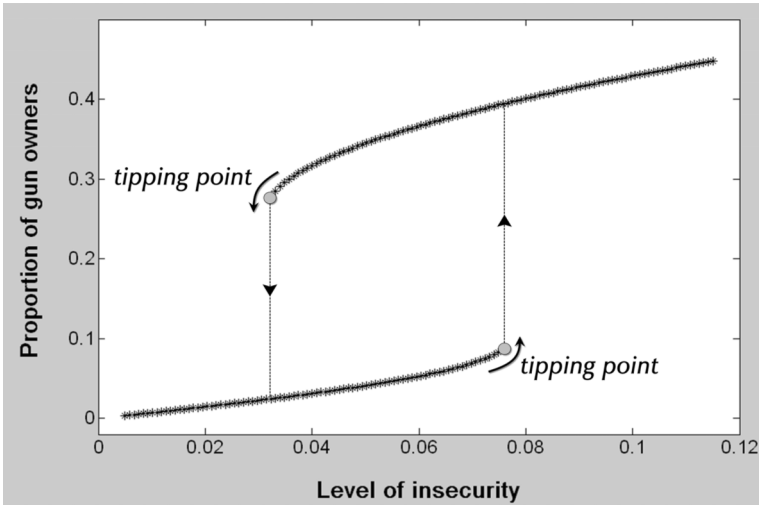

Figure 8.4. When the system reaches the end of the branch, it suddenly jumps to another state and the point at which this happens is popularly referred to as the "tipping point".

The essential feature of the model is that the behaviour of individuals can be altered by the behaviour of others. And this is not a trivial element:

observations of the real world provide ample reason to believe that a group composed of many individuals is more than just the sum of its parts. People linked together through a social network mutually influence each other and this process gives rise to specific—and sometimes completely unexpected—behaviour at the level of the group. Crowd panic, the synchronization of applause during an ovation, and the formation of businesses and alliances are significant examples attesting to the importance of social interactions.

This kind of group behaviour is also highly likely to play a role in the process of small arms proliferation. If almost everybody in your neighbourhood possesses a gun, there is thus social pressure on you to acquire a firearm too. On the other hand, if nobody around you feels the need for a gun, this belief is likely to influence you as well. While most policy prescriptions aiming to limit gun proliferation focus on the availability of weapons, recognizing the importance of social interactions opens the way to alternative approaches. Measures aiming at establishing and reinforcing social norms against gun possession may be efficient drivers to curbing small arms proliferation. This includes, for example, the creation of gun-free zones and initiatives to tackle mental associations between guns and power, prestige and masculinity. The British physicist Philip Ball has stressed the importance of social norms very clearly: "In a cultural steeped in social etiquette and peer pressure, this [shame and social exclusion] is perhaps a more powerful deterrent than any draconian penalties imposed by law."[31]

When the tipping point is reached, the system may switch to the other branch, but this does not necessarily happen. It is possible that the system goes beyond the transition point and stays in what is called a "metastable" state (see Figure 8.5 overleaf).[32] This kind of configuration, however, cannot last forever and a metastable state will always convert to the more stable configuration after some period of time. Ball described the process by which a system in a metastable state switches to a stable configuration in the following way:

> what destroys a metastable state is the phenomenon of nucleation. If a sufficiently large region of the more stable state happens to form by chance in the metastable state, it can expand rapidly to engulf the whole system.[33]

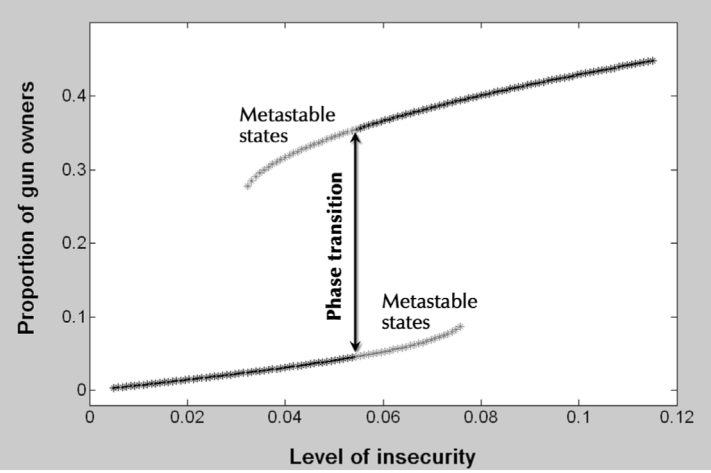

Figure 8.5. The model displays a 1st-order phase transition. The tipping point lies somewhere midway along the region of overlap rather than being at the end of the branch. The system can go beyond this point and sustain a metastable state for a while. Ultimately, however, it will always convert to the more stable state.

Nucleation has implications for gun policy research. Let us imagine a population situated beyond its transition point near the end of the upper branch. This corresponds to a society in a "highly armed" state, whereas under these conditions, a low proportion of gun owners is actually a more stable configuration. If, for instance, a small island of people deciding to give up their arms happens to form in the system, it can spread out very rapidly until everybody—with maybe the exception of the most determined gun owners—decide to do the same.

WHY THIS MODEL IS USEFUL

The model developed in this chapter is useful for three reasons. First, it highlights the core factors influencing demand for small arms in a way that takes into account the profound effect of social interactions on individual decision-making, which other approaches in the small arms research field have not done. Second, the model described here helps to account for puzzling disparities in rates of gun ownership between social situations that

are apparently similar. It also displays phase transition patterns, that is, non-trivial sudden switches between two very different levels of gun ownership. These non-linear phenomena are typical of systems composed of many interacting elements—in this case, people. Third, this better understanding offers the prospect of framing new policy options to address aspects of small arms proliferation.

Of course, modelling the proportion of gun owners in a given population does not provide information about the frequency of use of these weapons or whether or not these weapons are used in violent settings. Ultimately, and most importantly, it does not give information about the humanitarian cost of armed violence. But, we should keep in mind that the model introduced here represents a first step in applying emerging concepts from the natural sciences to the field of disarmament and arms control. As such, its aim is rather to expose gun policy research to these new tools and illustrate that taking social interactions into account is necessary if we want to model complex social phenomena, such as the proliferation of small arms, in a realistic way.

NEXT STEPS?

One next step could be to extend the model by splitting the group of gun owners into non-users, users for non-violent purposes and users for violent purposes. Nevertheless, this new division, although conceptually interesting, would not substantially alter the global dynamics of the model. Another potential area of further research would be to calibrate the model for a specific situation. Ormerod and others, for instance, successfully calibrated their model of crime dynamics using data on property crime and on violence against people collected in the United Kingdom.[34] Finally, and perhaps of most interest, an agent-based approach could be explored.

Agent-based modelling (ABM) is a particular kind of computer simulation specifically designed to study systems composed of many interacting elements. It is a useful tool for analysing complex systems' behaviour, whether in physics, biology or the behavioural and social sciences. The basic idea is to specify the rules of behaviour of the individual entities composing the system—for instance, it could be particles, ants, or people—as well as how these agents interact one with another. Then, using

simulation runs, it is possible to explore the consequences at the level of the group of the assumptions stated at the individual level.

The methodology of ABM, that is, in understanding how emergent properties arise "from the micro-processes of interactions among many agents",[35] differs significantly from mathematical models like the one explained in this chapter. Indeed, although our model, like ABM, explicitly allows for social interactions, that social interaction is simulated at the aggregate—or macroscopic—level. In contrast, ABM design is at the microscopic level. In other words, in our model it is the global proportion of gun owners that influences the decisions of susceptibles about whether or not to acquire a firearm. In the same way, gun owners may decide to give up their arms based upon the global proportion of non-susceptibles in the population. ABM, on the other hand, possesses a major advantage over our approach: each individual in the model can be described differently. Agents are connected through a specific network, whose topology can be modified, and social interactions take place between agents that are linked one to the other.

Simulations of this kind may yield important insights into how grass-roots-level social interactions drive small arms proliferation that more orthodox research methods have had difficulty in analysing. At the very least, they would provide useful aids alongside other methods and would help policy makers and researchers achieve a clearer understanding of armed violence in all its complexity.

Notes

1 John Borrie first had the idea of creating a model of small arms proliferation by adopting a methodology similar to that used in biology to describe how epidemics spread through a population, which eventually led to my work presented here. My thanks to him for his assistance and encouragement. We were inspired, in particular, by Paul Ormerod, *Butterfly Economics*, Faber and Faber, 1998; and Philip Ball, *Critical Mass: How One Thing Leads To Another*, Arrow Books, 2004.

2 Small Arms Survey, *Small Arms Survey 2001: Profiling the Problem*, Oxford University Press, 2001, p. 197.

3 See *Armed Violence Prevention Programme (AVPP): Support to Community Based Violence Prevention Programmes, Project*

Document, a joint undertaking involving the Small Arms and Demobilization Unit of the United Nations Development Programme's (UNDP) Bureau for Crisis Prevention and Recovery, and the World Health Organization's Department of Injuries and Violence Prevention, at <www.who.int/violence_injury_prevention/violence/activities/en/avpp_overview.pdf>.

4 See Martin Killias, "International Correlations between Gun Ownership and Rates of Homicide and Suicide", *Canadian Medical Association Journal*, vol. 148, no. 10, 1993, pp. 1721–1725.

5 For more information, see <www.unodc.org/unodc/crime_cicp_convention.html>.

6 Readers who seek more information can consult the UN website, <www.un.org/events/smallarms2006/>.

7 Several recent papers have stressed the need for a demand optic in the field of small arms and light weapons. See for example: David Atwood, Anne-Kathrin Glatz and Robert Muggah, *Demanding Attention: Addressing the Dynamics of Small Arms Demand*, Small Arms Survey/Quaker United Nations Office, Occasional Paper no. 18, 2006; Ernie Regehr, *Reducing the Demand for Small Arms and Light Weapons: Priorities for the International Community*, Project Ploughshares, Working Paper 04-2, 2004, <www.ploughshares.ca/libraries/WorkingPapers/wp042.pdf>; and Angela McIntyre and Taya Weiss, *Exploring Small Arms Demand: A Youth Perspective*, Institute for Security Studies, Occasional Paper 67, 2003, <www.iss.co.za/Pubs/Papers/67/Paper67.html>.

8 See Ernie Regehr, *Reducing the Demand for Small Arms and Light Weapons: Priorities for the International Community*, Project Ploughshares, Working Paper 04-2, 2004, p. 3, <www.ploughshares.ca/libraries/WorkingPapers/wp042.pdf>.

9 Resolution 60/68 aimed at addressing the negative humanitarian and development impact of the illicit manufacture, transfer and circulation of small arms and light weapons and their excessive accumulation. It is available online at <http://daccessdds.un.org/doc/UNDOC/GEN/N05/491/68/PDF/N0549168.pdf>.

10 See James Hamilton, "The Neoclassical Paradigm", *Econbrowser,* 17 January 2006, <www.econbrowser.com/archives/2006/01/the_neoclassica.html>.

11 This matter is broadly developed in Paul Ormerod, *Butterfly Economics*, Faber and Faber, 1998.

12 Quoted in Paul Ormerod, "Turning the Tide: Bringing Economics Teaching into the Twenty First Century", *International Review of*

Economics Education, volume 1, no. 1, 2003, pp. 71–79, <www.economicsnetwork.ac.uk/iree/i1/ormerod.htm>.

13 See Aurélia Merçay and John Borrie, "A Physics of Diplomacy? The Dynamics of Complex Social Phenomena and Their Implications for Multilateral Negotiations", in this volume.

14 Small Arms Survey, *Small Arms Survey 2001: Profiling the Problem*, Oxford University Press, 2001, pp. 59–90.

15 Michael Campbell and Paul Ormerod, "Social Interaction and the Dynamics of Crime", Volterra Consulting Ltd, Research Paper, undated, <www.volterra.co.uk/Docs/crime.pdf>.

16 Armed violence and small arms proliferation are often described as "contagious", "epidemic", or "spreading" phenomena. For instance, Florquin and Berman of the Small Arms Survey have argued, "West Africa's history shows that violence is contagious and that 'spillover' is common" (see Nicolas Florquin, Eric Berman (eds), *Armed and Aimless: Armed Groups, Guns, and Human Security in the ECOWAS Region*, Small Arms Survey Yearbook, 2005, p. 389).

17 See the documents listed in note 7.

18 See Maria Fernanda Tourinho Peres, *Firearm-related Violence in Brazil—Summary Report*, Center for the Study of Violence, University of São Paulo, 2004, pp. 7–8.

19 See Ernie Regehr, *Reducing the Demand for Small Arms and Light Weapons: Priorities for the International Community*, Project Ploughshares, Working Paper 04-2, 2004, p. 7, <www.ploughshares.ca/libraries/WorkingPapers/wp042.pdf>.

20 See Robert Muggah and Martin Griffiths, *Reconsidering the Tools of War: Small Arms and Humanitarian Action*, Humanitarian Practice Network, HPN Network Paper 39, 2002, p. 8, <www.reliefweb.int/rw/lib.nsf/db900SID/LGEL-5DTCXB>.

21 Reported by the Small Arms Survey in a press release of 26 June 2006, <www.smallarmssurvey.org/files/sas/publications/year_b_pdf/2006/2006SAS_press_release_aym_en.pdf>.

22 Ibid. The number of annual firearm homicide victims worldwide is estimated to be between 140,000 and 200,000 people (see Small Arms Survey, *Small Arms Survey 2004: Rights at Risk*, Oxford University Press, 2004, p. 200). This figure does not include deaths in armed conflicts as they are usually defined.

23 See Small Arms Survey, *Small Arms Survey 2006: Unfinished Business*, Oxford University Press, 2006, p. 296.

[24] See Michael Campbell, Paul Ormerod, "Social Interaction and the Dynamics of Crime", Volterra Consulting Ltd, Research Paper, undated, <www.volterra.co.uk/Docs/crime.pdf>.

[25] The assumption that the flow out of a particular group is proportional to the size of the group is made because, as Campbell and Ormerod noted in their work, "this is perfectly justifiable, since the lack of conclusions in the empirical literature on the impact on crime of the factors listed above means that there is little guidance as to how we should express these factors in a formal, mathematical way" (see Ibid., p. 7).

[26] See Michael Campbell, Paul Ormerod, "Social Interaction and the Dynamics of Crime", Volterra Consulting Ltd, Research Paper, undated, <www.volterra.co.uk/Docs/crime.pdf>.

[27] MATLAB is a high-level language and interactive environment that enables computationally intensive tasks to be performed. For more information, see < www.mathworks.com/products/matlab/?BB=1>.

[28] See Michael Campbell, Paul Ormerod, "Social Interaction and the Dynamics of Crime", Volterra Consulting Ltd, Research Paper, undated, <www.volterra.co.uk/Docs/crime.pdf>, p. 8.

[29] See Aurélia Merçay and John Borrie, "A Physics of Diplomacy? The Dynamics of Complex Social Phenomena and Their Implications for Multilateral Negotiations" in this volume.

[30] See Paul Ormerod, *Butterfly Economics*, Faber and Faber, 1998, p. 45.

[31] See Philip Ball, *Critical Mass: How One Thing Leads To Another*, Arrow Books, 2004, p. 398.

[32] A "metastable" state is a non-equilibrium configuration, which has the ability to persist for some period of time, whereas, under these specific conditions, another state is actually more stable.

[33] See Philip Ball, *Critical Mass: How One Thing Leads To Another*, Arrow Books, 2004, p. 398.

[34] See Paul Ormerod, Craig Mounfield and Laurence Smith, "Non-linear Modelling of Burglary and Violent Crime in the UK", Volterra Consulting Ltd, Research Paper, 2001, <www.volterra.co.uk/Docs/crimevolt.pdf>.

[35] See page 4 of Robert Axelrod and Leigh Tesfatsion, "Appendix: A Guide for Newcomers to Agent-based Modeling in the Social Sciences", in Leigh Tesfatsion and Kenneth Judd (eds), *Handbook of Computational Economics, Volume 2: Agent-based Computational Economics*, Elsevier/North-Holland, 2006, <www.econ.iastate.edu/tesfatsi/GuidetoABM.pdf>.

CHAPTER 9

SECURITY OF JOURNALISTS: MAKING THE CASE FOR MODELLING ARMED VIOLENCE AS A MEANS TO PROMOTE HUMAN SECURITY

Nathan Taback and Robin Coupland[1]

SUMMARY

Attacks on journalists are worthy of particular attention because, first, this profession constitutes a distinct vulnerable group in conflict areas and, second, there are wider implications for human security because of the importance of media reports pertaining to armed violence. We use a methodology for studying attacks on journalists that builds their "security profile" and which could be applied to any issue relating to both human security and the use of weapons. We conclude, first, that media reports can generate meaningful data about the multiple potential effects of armed violence on any particular vulnerable group (as exemplified by journalists working in conflict areas) and, second, that the method presented could be a useful tool in collective international efforts to enhance human security, including in disarmament, by supplementing field-based studies about the effects of armed violence.

INTRODUCTION

The link between attacks on journalists in conflict zones and the notion of human security[2] is intuitive. Such attacks are significant because they are directed towards a specific and usually unarmed group; they are equally important because journalists convey information about acts of armed violence—especially politically motivated violence in all its forms—to the rest of the world. Although they may not necessarily acknowledge it, policy makers are influenced by media reports of human *in*security in prioritizing and deciding on foreign policy or national and even international security

matters. It follows that where journalists are most in danger is where journalists' work is most important for promoting human security.

Multilateral disarmament processes have the potential to contribute to human security as the 1997 Anti-Personnel Mine Ban Convention and the 2001 UN Programme of Action to curb illicit trade in small arms, for instance, have shown. The three strands of the obvious common thread between human security, attacks on journalists and disarmament are weapons, how they are used in violence, and the effects of this violence. And yet there is no international surveillance system for the effects of armed violence on peoples' lives and well-being as there is for infectious diseases, for instance.[3]

Media reports about armed violence constitute the only day-to-day public source of information about human insecurity available for analysis. This source may be far from comprehensive, but it is the best available. Attacks on journalists are worthy of study because first, this profession constitutes a distinct group in conflict areas and, second, there are wider implications for human security because of the importance of media reports pertaining to armed violence. Furthermore, attacks on journalists tend to be well reported by other journalists. Our method of data gathering about armed violence and its effects as applied to attacks on journalists could be applied to informing policy makers on many aspects of human security, including multilateral disarmament.

HUMAN SECURITY AND THE EFFECTS OF ARMED VIOLENCE

Human security has become the main theme of international humanitarian actors, and for some countries an important element of foreign policy. The "broad definition" of human security is debated but the Human Security Report 2005 says it concerns intersection of economic development, good governance, and military security.[4] Whether or not one agrees with this definition, most would agree that human security focuses on the notion that peoples' lives and well-being are unnecessarily at risk from other people who resort to violence and that this risk can and must be reduced if not eliminated. Most would also agree that disarmament, when framed as humanitarian action, constitutes an important component of human security.

One advantage of human security as an approach is that it brings together disciplines such as political science, economics, law and public health. However, given the World Health Organization definition of health,[5] and the accepted definitions of violence[6] and of weapons,[7] it is obvious that the effects of violence on peoples' health are the irreducible elements when different disciplines examine human security.

More important than definitions of, and disciplines addressing, human security is the evidence that natural science methodology—in particular those from the domain from public health—are productive ways to investigate human insecurity. In turn, this may lead to proposals about how to improve human security. This is exemplified by publications pertaining to anti-personnel mine injuries,[8] civilian deaths and injuries from cluster bombs,[9] the impact on civilians of the availability of small arms,[10] the overall impact of war on civilians,[11] weapons injuries following the departure of peacekeepers,[12] mortality among people displaced by conflict,[13] conflict deaths,[14] the impact on civilians of the 1999 conflict in Kosovo,[15] massacres,[16] the prevalence of war-related sexual violence in Sierra Leone,[17] violence and mortality in Darfur, Sudan,[18] the number of people killed in Iraq since 2003,[19] and, recently, the impact of the conflict in the Democratic Republic of the Congo[20] (the Congo conflict, in particular, has demonstrated irrefutably how an insecure environment associated with armed conflict has a massive impact on health far beyond the number of deaths and injuries caused by use of weapons). Many of these studies are pertinent to disarmament and can contribute to policy makers framing it in terms of humanitarian action. All these studies, and many more besides, show that credible data can be gathered under difficult conditions.[21]

While it is often difficult for policy makers to make best use of this research, for various reasons, the "data-to-policy" process is an important aspect of devising meaningful responses to problems of armed violence in human security terms. The data generated by the kind of studies cited above may contribute to momentum toward the creation of treaties and policies regarding exports of weapons or destruction of stockpiles. They may provide evidence of war crimes or crimes against humanity. By necessity, field-level interventions such as clearance of mines or explosive remnants of war and firearm destruction programmes, as well as a host of remedial health interventions, are informed by such studies as well. In brief, data

gathering and interpretation is an essential part of ensuring that disarmament contributes to human security.

However, the primary observers in most of the studies cited above were health professionals or academics. They used a variety of methods to gather data regarding the impact of armed violence, direct or indirect, on peoples' health. The things that are detrimental to human security are the stuff of everyday international news and the everyday observers and reporters of human insecurity are journalists and not health professionals or academics. The translation of media reports of individual events into meaningful data has been demonstrated in two independent studies: the first, in relation to Colombia[22] and the second in relation to the number of civilian deaths and injuries in Iraq since March 2003.[23] Managing publicly available material in this way has clear and important implications for journalists' work, journalists' security and for human security more widely.

We have published the means by which any report, including media reports of individual events of armed violence, can be translated into meaningful data using a public health methodology.[24] This is centred on a model of armed violence which incorporates values pertaining to the effects of the armed violence in question, the kind of weapon, the number of weapons in use, the way the weapon or weapons were used, the vulnerability of the victims to suffer the effects and a variety of context variables. This model has already been invoked as a tool for dialogue to promote disarmament and arms control in the context of the *Disarmament as Humanitarian Action* project's work.[25]

WHY STUDY ATTACKS ON JOURNALISTS IN CONFLICT AREAS?

Journalists and other media workers may, in their professional activities, suffer the effects of various forms of armed violence. This is often related to their reporting of armed conflict or other forms of political violence. Journalists may be "caught in the crossfire" or be specifically targeted. People in positions of power may use violent tactics, including arrest and physical violence, to prevent journalists from communicating information about armed violence and its effects. Journalists may also suffer punishment for having communicated certain information which may be the only information coming out of a certain context. There is anecdotal evidence that journalists reporting on conflict and violence are at increased risk of

becoming victims of violence compared to other civilians since they are often targeted.[26]

Journalists working in international armed conflict are specifically mentioned in international humanitarian law.[27] Their non-combatant status is affirmed and states are obliged to recognize both the dangerous nature of journalists' work in conflict areas and their unambiguous status as civilians. Human rights law, by applying outside armed conflict as well, should ensure that journalists, as other civilians, be accorded the basic rights such as the right to life, freedom of speech and freedom from arbitrary arrest. However, journalists are frequently the principal reporters of violations of these same laws and so the contexts in which journalists are most at risk are likely to be those in which violations of these laws are likely. The reporting of violence often begets violence against journalists. It follows then that promoting journalists' security and ensuring that their reports are as complete and accurate as possible are important means to promote human security.

There are various organizations that document violent events involving journalists and media workers such as the International News Safety Institution (INSI), Reporters Without Borders, and the Committee to Protect Journalists. INSI is the only one of these organizations dedicated to the safety of journalists and media workers, and the two other organizations are more focused on freedom of the press. The data that we have generated from this study has been used as a basis by INSI for part of a global enquiry of journalists' deaths and injuries.

In the study we describe below, our objective was to use media reports of attacks on journalists to create a security profile of journalists. The term "security profile" encompasses the ensemble of the profile of effects of armed violence together with the profile of risk factors. It also shows how the security profile can change with geography or evolve in relation to political events. A security profile carries a potential for prediction of certain effects of armed violence when risk factors are known; likewise, it could clarify contexts about which information is lacking in relation to risk factors when the effects are known or obvious. The power to do so rests on the size and quality of the database from which the security profile is generated.

In a pilot study, we used a methodology that converts qualitative data in media reports of armed violence and its effects into meaningful quantitative

data within a public health model.[28] The pilot generated some global data about armed violence and its effects on unarmed people. It showed how the model might predict certain effects of armed violence or clarify questions about contexts.

Using similar methodology to the pilot study, we undertook a study on the effects of armed violence on journalists in areas of armed conflict or political violence *as reported by journalists*. The effects investigated were not only deaths and injuries but also threats, kidnapping or detention, assuming these would lead to psychological "secondary effects." The first objective was to generate a specific security profile of journalists working in conflict areas. As part of this first objective, we investigated whether the method would indicate where and how the security profile of journalists has changed since 30 September 2001. The second objective was to show the potential of our model to apply to other aspects of human security and, in particular, to how issues relating to disarmament might be framed as contributing to human security.

Box 9.1. Methods

All English language (possibly translated) news reports of events involving armed violence against journalists from 1 January 1999 to 31 December 2003 were collated.

When data errors were suspected we discussed the corresponding reports with the data enterer and then the data was corrected.

Factiva was used to obtain the media reports. The search terms used to construct the database were a combination of the word "journalist" and "effect" terms (for example, killed, injured, arrested) in the article headline only.

The search did not include Australia, Japan or New Zealand, nor countries in Western Europe or North America.

Strict criteria for the inclusion and exclusion of articles were applied. An event involving armed violence (an event) was defined as: at least one act of armed violence (as defined in the pilot[29]) involving a perpetrator and a victim occurring at a specific place and time.

Each of the five effects was measured as a binary (yes/no) variable (that is, whether the journalist in question was killed, wounded, detained, threatened or kidnapped).

Box 9.1 (continued)

Risk factors of the effects of armed violence can be categorized into four main constructs:[30]

- weapons involved were quantified as a categorical variable (explosive, firearm, other);
- the potential number of weapons in use was quantified as a categorical variable (military, organized armed group, police, civilian);
- vulnerability was quantified by assessing whether the journalist's vulnerability was increased or not (for example, if the journalist was tied up before being harmed); and
- intentional use of force was quantified as a categorical variable. The intent of the user of the weapon intended to cause "all", "some", or "none" of the effects suffered by the journalists.

According to information in a report, the actor was categorized as: "civilian", "military"—part of a state's armed forces (for example, use of the word "soldiers" or "a military attack"), "organized armed group"—the actor(s) belonged to an identifiable or named armed group (for example, "Hamas claimed responsibility"), or "police".

Whether or not the report included details of the health effects suffered by the journalist and mention of follow-up or investigation of the event were both recorded as binary variables.

The countries were categorized into six regions according to the World Bank definition of regions.[31] Location of the event was recorded as a categorical variable: "building", "crowded area", "outdoors" or "vehicle". Another context variable was whether the event occurred in a populated area as defined by a "concentration of civilians" as in international law.[32] Each event was classified as related to conflict or not according to given details and our understanding of the context.

Statistical Methods

Frequencies and percentages were calculated for categorical variables. Odds ratios were calculated as an approximation to the relative risk of a particular health effect given an exposure. Median and inter-quartile range (IQR—difference between the 75th and 25th percentile) values were calculated for continuous variables of interest. All reported *p*-values and confidence intervals were calculated using exact methods. Fisher's exact test was used to compare proportions. We consider $p \leq 0.05$ to be statistically significant. All analyses were done using SAS 8.0.

Box 9.1 (continued)

Results

The search resulted in 511 reports. The median word count was 213 (IQR=169). Effect details were given in 43.05% (n=220) of reports and follow-up was discussed in 77.7% (n=397) of all reports.

By region, 101 (19.8%) originated from sub-Saharan Africa; 45 (8.8%) from East Asia/Pacific; 146 (28.6%) from Eastern Europe/Central Asia; 71 (13.9%) from Latin America/South America; 42 (8.2%) from the Middle East/North Africa; and 106 (20.7%) from South Asia.

The actors were civilian in 182 (36%) events; police in 153 (30%) events; organized armed groups in 80 events (16%) and military in 45 (9%) events. The actors' status was not reported in 51 (10%) events. In 444 of the 511 events, information was available on both the actors' status and whether or not the event was related to a conflict. Among these events when civilians were perpetrators, 83 (49%) were related to conflict; when police were the perpetrators, 77 (51%) related to conflict.

In relation to effects, in 149 events (29%) a journalist was killed; in 131 events (26%) a journalist was wounded; in 32 (6%) a journalist was kidnapped; in 147 events (29%) a journalist was detained; and in 76 (15%) a journalist was threatened.

There is a statistically significant difference in the proportion of deaths according to the status of the actor ($p=0.0000$). Civilians and non-military actors were the most common actors in lethal events (44.30%, n=66 and 24.83%, n=37 respectively.) A similar relationship ($p=0.0000$) and pattern is found when the effect is wounding of a journalist. The identity of the actor varied significantly in relation to risk of detention ($p<0.001$), threat ($p=0.05$) and kidnapping ($p=0.018$) with, respectively, police, civilians and organized armed groups being the most common actors. The type of weapon was a significant risk factor for a lethal outcome ($p<0.001$), wounding ($p<0.001$), or threat ($p<0.001$). When perpetrators did not intend to cause the health effect suffered by the journalists (that is, the journalist was in the wrong place at the wrong time), the risk of being wounded is 11.52 times higher than being killed (95% CI:[2.96,64.97]; $p<0.001$). Vulnerability was intentionally elevated in 27 events with a 3.54 times increased risk of a lethal outcome (95% CI:[1.52,8.40]; $p=0.002$).

Box 9.1 (continued)

In the 244 events in which the kind of weapon was not reported, 209 (86%) related to journalists being detained, threatened or kidnapped. Combinations of weapons were used in 15 events (2%). In the 152 events where firearms were the only weapons used, journalists were killed in 101 events (67%) and wounded in 36 events (24%). In the 25 events where explosive weapons only were used, eight (32%) were lethal and 12 (48%) resulted in wounds. In terms of lethal events, civilians used firearms in 53 (80.30%) and explosive weapons in one (1.02%); organized armed groups used firearms in 28 (75.68%) and explosive weapons in five (13.51%); and military actors used firearms in eight (57.14%) and explosive weapons in four (28.57%) (and in two events the type of weapon was not reported.)

The risk of the different effects suffered varies significantly according to all chosen context variables. The exception is that kidnappings did not vary significantly by location ($p=0.09$). In events related to conflict, journalists are less likely to be detained (OR=0.63; 95% CI[0.42,0.95]; $p=0.0$) and more likely to be kidnapped (OR=3.63; 95% CI[1.34,12.28]; $p=0.005$). Kidnapping is less likely in populated areas (OR=0.23; 95% CI[0.09,0.61]; $p=0.002$).

The only region where the majority of deaths (63%, n=7) were caused by military actors is the Middle East/North Africa region. The only region where the majority of deaths (53%, n=20) were caused by organized armed groups is the Latin America/Caribbean region. In all the other regions the majority of deaths were caused by civilians. A similar pattern is manifest for injury of journalists.

The Middle East/North Africa region had 18 events before 30 September 2001 with two events (11.11%) resulting in a journalist's death; after 30 September 2001 the region experienced 24 events with nine (37.50%) resulting in death. This yields a significant difference of 26.39% (95% CI [2.18,50.59]). One of the two deaths before 30 September 2001 was caused by a civilian and the other by a member of an organized armed group; after 30 September 2001, seven of the 11 deaths were caused by military actors.

STUDY LIMITATIONS

The principle limitation of this study is that raised in the pilot study, namely, the potential inaccuracy and incompleteness of media reports. The fact that this is a study based on journalists being exposed to armed violence should reduce this limitation. However, as compared with the global overview in the pilot study, journalists do not obviously dedicate a greater word count

to, describe more details of, nor report follow-up more of, an event in which a colleague was subject to armed violence. It is likely though that the number of threats sustained by journalists is underreported.

We do not claim to be able to calculate the absolute risk to journalists because we have no means to know the critical variable—the total number of journalists in a given context. However, this does not preclude the creation of the security profiles of journalists in a given context nor the comparison of security profiles of journalists in different contexts. Furthermore, proving that acts of armed violence constitute a violation of international law or human rights does not normally rely on knowledge of this variable.

DISCUSSION

The study supports the conclusion of our pilot study that qualitative reports about armed violence and its effects can translate into meaningful quantitative data.

The relationships proposed in the pilot between effects of armed violence and the risk factors are supported by the results. Lethality—as the proportion of people injured who are killed—is the effect best measured by both these studies. Specifically, high level of intent, use of firearms, actors in small groups and elevated vulnerability are all significant risk factors for increased lethality of attacks. Likewise, use of explosive weapons is associated with low lethality (this is intuitive as explosive weapons cannot be directed to a vital organ of an individual victim as can a firearm).

This study describes in general terms the security profile for journalists in regions involved in conflict. Overall, deaths and injuries of journalists are most often inflicted by civilians or organized armed groups. The detention of journalists is, not surprisingly, mostly the domain of police. Whether or not events are related to conflict, the risks for journalists of being killed or wounded do not differ. However, those events so related carry less risk of a journalist being detained and a higher risk of kidnapping which tends to take place in areas that are not populated. The number of threats in relation to lethal attack varies by region and actor; therefore, contexts in which threats are more likely to be carried out with lethal effect are identified.

Approximately half of the deaths due to civilian actors and half of the events in which journalists were detained by police are unrelated to conflict. This means there is a background set of risks for journalists through being involved in, or suspected of, ordinary crimes; the risks related to conflict are then superimposed. Except in the Middle East/North Africa region since September 2001, the main risks to journalists *in relation to conflict* do not come from military actors. Military actors in the Middle East/North Africa and organized armed groups in Latin America/Caribbean are more likely to execute a threat as compared with other actors elsewhere. The lethality of attack by military actors in the Middle East/North Africa region did not stand out from all other regions before 30 September 2001, but did afterward (data has not been given for individual countries; the reason is to avoid the political and even security implications if we, or the institutions we represent, work in high-risk countries in the future).

The reporting bias by region noted in the pilot is reflected in this study. Given that sub-Saharan Africa has a number of highly dangerous contexts, the small number of events found in both studies is likely to represent there being few journalists present in the region.

Journalists, and news organizations employing them, could use the information that could be generated by our methodology to gain a deeper understanding of journalists' insecurity in a given context. It might help the creation and implementation of appropriate security policies. Indeed, this study might help news organizations develop dynamic security policies that are as current as the information their journalists are reporting.

Therefore, assuming media reports exist, our method could provide a safe, inexpensive supplement to studies based on primary data collected at field level about the effects of armed violence on a vulnerable group. Importantly, the database could be updated on a real-time basis and so permit "monitoring by newswire." Further study would be required to compare mortality estimates, for example, based on newswire reports and primary data collected in the field.

By extrapolation, using our methodology and journalists' reports, security profiles could be generated for any vulnerable group whether by region, religion or race given a sufficiently large database of events. We therefore propose that, because our primary outcome of interest is the effect on health, accurate and unbiased reporting by journalists and media

organizations of armed violence and its health effects on any vulnerable group could have a protective influence on that group, that is, it could lead to an improvement in human security. This, in turn would make the proposed methodology a more effective tool for dialogue. It could also bring an evidence-based approach to what is really happening to peoples' health as a result of armed violence in the post-11 September 2001 world.[33]

The wider implications of this study are that reports originating from journalists or others can be translated into meaningful data and analysed by scientific methods on an open ended, ongoing basis. Qualitative reports such as newswires are the most complete and the most accurate source of data available pertaining to human security and, like it or not, with little or no analysis, this data drives policy at national and international level.

We are proposing that the huge source of qualitative data represented by newswires and other written reports can be turned into quantitative data to investigate contexts of human insecurity and to support disarmament as humanitarian action. The method has already been adopted as a tracking system for sexual violence in conflict areas by the Alliance for Direct Action Against Rape in Conflict, to initiate the Registry of Explosive Force (a collaborative project between Landmine Action and Medact to track the global phenomenon of use of explosions in populated areas as a means to pursue political objectives.) The method was used to conduct a confidential study of security incidents affecting the staff of the International Committee of the Red Cross.

The fact that such data can be gathered on a day-by-day basis would permit tracking of armed violence against any particular vulnerable population chosen. It could, were enough data gathered, permit a degree of forecasting of how, for example, changes in peoples' vulnerabilities or the way weapons are used change in response to political or military events. It would provide important indicators of whether or not an intervention such as a small-arms buy-back programme really was effective in terms of preventing deaths and injuries.

CONCLUSIONS

Human security and using disarmament negotiations to promote human security are aided by data pertaining to human insecurity. Our method translates media reports about individual events of armed violence and its effects into meaningful data.

Using our method, we have created a basic security profile of journalists working in conflict areas. We hope this information could be used for security policies for journalists and the organizations that employ them. The method could be used in a similar way to promote the security of other vulnerable groups working in conflict areas, such as aid workers. In fact, our method could be applied to any other context or vulnerable group. We propose it is a useful tool for those working on human security issues and, in particular, in viewing disarmament as humanitarian action.

Attacks on journalists have a three-fold impact. First, there is the human impact of these attacks, which is noteworthy for any vulnerable group of people. Second, attacks are of particular significance because of the special role journalists play in conveying information about armed violence to the world, including to policy makers, which may be impeded as a result: media reports are, as we have explained, by far the most important means by which acts of armed violence detrimental to human security are conveyed to the rest of the world. A third impact of documenting attacks on journalists is that it could be an important early indicator of trends detrimental to human security in a given context, if decision makers choose to listen.

Notes

[1] The views expressed in this publication are the views of the authors and do not necessarily reflect the views or policies of the Ontario Ministry of Health and Long-Term Care, University of Toronto, St. Michael's Hospital, or the International Committee of the Red Cross. Nathan Taback gratefully acknowledges the support of the Ontario Ministry of Health and Long-Term Care. The authors also wish to thank Jean-Luc Metzker for entering the data.

2 The concept of human security referred to is related to personal security, and does not include economic development. See the Human Security Centre, *Human Security Report 2005: War and Peace in the 21st Century*, Oxford University Press, 2005.

3 See the "Epidemic and Pandemic Alert and Response" of the World Health Organization, <www.who.int/csr/en/>.

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CHAPTER 10

INVESTMENT POLICIES AND ARMS PRODUCTION—EXPERIENCES FROM THE *NORWEGIAN PENSION* FUND–GLOBAL

Gro Nystuen

SUMMARY

In the late 1990s, a public debate concerning ethical guidelines for the Norwegian Government Petroleum Fund (now the Pension Fund–Global) led to the development of Ethical Guidelines for the Fund. In 2006, 15 large companies producing arms were excluded from investment by the Fund. This chapter will explain how the Ethical Guidelines came about and how they function. It also looks at the consequences of the Guidelines for investment in arms production more generally, and their implications for on-going advocacy work related to cluster munitions.

BACKGROUND

Norway receives substantial revenue from its petroleum industry. In 1990 the Norwegian government established the *Government Petroleum Fund*. Since January 2006 the official name of the fund is the Norwegian *Government Pension Fund–Global*. It amounts to approximately €200 billion at present, making it one of the world's largest public funds.

As the Fund increased, a public debate arose about whether it ought to be subject to ethical standards. One incident that in particular generated much debate on the investment policies of the Fund was a 1999 news story pointing out that the Fund was invested in a Singaporean company producing anti-personnel mines. This information captured the public's attention particularly because of Norway's high international profile in the Ottawa process, which resulted in the Mine Ban Convention, banning the

use, development, stockpiling, production and transfer of anti-personnel mines. It was pointed out that although Norway was a party to this Convention, public money was nevertheless being invested in anti-personnel mine production.

In response, the Norwegian government established an Advisory Commission on International Law in 2001. Its mandate was to determine whether investments through the Petroleum Fund could constitute a breach of Norway's international legal obligations. The Commission recommended to the Ministry of Finance that the Singaporean company (Singapore Technologies) be excluded from the Fund's investment universe,[1] because any investment in such a company could constitute a violation of the complicity provision in the Mine Ban Convention (Article 1.c).[2]

Very few international treaties, however, have provisions that ban *investments* in prohibited activities. The mandate of the Advisory Commission on International Law was thus relatively narrow, and soon politicians, non-governmental organizations (NGOs) and other civil society actors in Norway began to demand guidelines for the Fund that would cover more than just breaches of international law through investments. In 2002, a governmental commission (the Graver Commission) was established, with a mandate to propose a set of ethical guidelines for the Fund. Based on the Graver Commission's report and the discussions in Norway's Parliament that ensued, the Ethical Guidelines for the Fund were adopted by the Government in November 2004.[3]

This chapter will first provide an overview of the mechanisms in place to ensure the *Government Pension Fund–Global's* ethical investment policies. It will then look more closely at the role of the Council of Ethics with regard to investments in production of cluster weapons, nuclear weapons and anti-personnel landmines. The chapter will also look at the effects of these ethical guidelines on investments in arms production more generally, and possible implications for on-going multilateral efforts on the issue of cluster weapons.

THE ETHICAL GUIDELINES

Two sets of ethical considerations constituted the foundation for the Guidelines; first, the Fund should benefit future generations and thus secure

long-term returns; and second, while securing the returns, the Fund should not be complicit in serious unethical conduct. Many politicians and members of the public had previously viewed the aims of making profit yet working to ensure that ethical considerations are taken into account in investing as mutually irreconcilable. Now, the Guidelines were designed to bridge that gap. Point 1 of the Guidelines thus reads as follows:

> - The Government Pension Fund–Global is an instrument for ensuring that a reasonable portion of the country's petroleum wealth benefits future generations. The financial wealth must be managed with focus on generating a sound return in the long term, which is contingent on sustainable development in the economic, environmental and social sense. The financial interests of the Fund shall be consolidated by using the Fund's ownership interests to promote such sustainable development.
> - The Government Pension Fund–Global should not make investments which constitute an unacceptable risk that the Fund may contribute to unethical acts or omissions, such as violations of fundamental humanitarian principles, serious violations of human rights, gross corruption or severe environmental damages.[4]

The Ethical Guidelines contain three different mechanisms:[5]

- exercise of ownership rights;
- negative screening; and
- ad hoc exclusions.

Whereas the Central Bank is responsible for the exercise of ownership rights, an independent *Council on Ethics* was established to implement the two latter mechanisms.[6] While the Central Bank is responsible for investments, the Council on Ethics is responsible only for disinvestments (exclusions) of companies. The Council thus limits the Bank's investment universe.

The Council consists of five members and has a working secretariat (presently of four persons).[7] When a case has been researched and the Council deems it appropriate to invoke the exclusion criteria, it makes a formal recommendation to the Ministry of Finance. The latter then decides whether to follow the Council's recommendation or not. In either case, the Council's recommendation is made public. The Central Bank, however, is given due notice to sell the relevant instruments before publication of the

recommendation takes place. As of May 2006, six Council recommendations have been made public, four of which relate to arms production.[8]

Exercise of ownership rights

The first mechanism, the *exercise of ownership rights,* is based, among other things, on the principles of the UN Global Compact and the Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises.[9] The Central Bank, which administers the Fund on a daily basis for the Ministry of Finance, is responsible for this mechanism.

In general terms, the purpose of exercising ownership rights is to protect and develop the capital that the shareholder has invested in a company.[10] A shareholder can influence the company through dialogue, voting rights and board representation and in some cases by buying and selling ownership interests.

As a financial investor, the Fund is not usually represented on corporate boards. This is because the possibility of acquiring "insider information" limits the scope for buying or selling equities when the Fund so desires. The Fund has instead developed a corporate governance and sustainable development policy as a key instrument in exercising ownership rights. This is to ensure that the board and management of the company concerned act in a way that serves the shareholders' long-term interests. The Pension Fund can use its influence through voting at general meetings, communicating with other investors or stakeholders, and communicating directly with corporate management.

There is no direct linkage between the Central Bank's exercise of ownership rights and the functions of the Council on Ethics, which implements the two other mechanisms under the Guidelines. It is, however, understood that exclusions of companies from the Fund's portfolio will take place only when it is probable that exercise of ownership rights is not sufficient to reduce the risk of complicity in unethical activities.

NEGATIVE SCREENING AND AD HOC EXCLUSIONS

The second and third mechanisms, *negative screening* and *ad hoc exclusions* of companies from the Fund's portfolio, both constitute *exclusion of companies* from the Fund. The Council on Ethics are mandated to recommend exclusion of companies based on a set of specific criteria contained in the Guidelines.[11]

- Negative screening entails screening with a view to identifying companies in the Fund's portfolio involved in the production of weapons regarded as ethically unacceptable. Such companies will be excluded from the Fund. Negative screening is thus focused primarily on the *production of certain products*. The term *screening* indicates that the aim is to exclude *all* companies involved in the production.
- Ad hoc exclusion is when a company is excluded from the Fund's portfolio because of unethical activities relating to serious human rights violations and violations of individuals' rights in war or conflict, severe environmental damage, gross corruption and other particularly serious violations of fundamental ethical norms. Ad hoc exclusion is thus focused primarily on *company conduct*. Such decisions are made on an ad hoc basis.

While negative screening aims for the exclusion of *all* companies within the Fund involved in producing products of relevant concern, the exclusion mechanism because of company conduct only targets companies on an ad hoc basis. It is not considered realistic to actually screen the whole portfolio for every company that may be complicit in human rights violations, environmental damage etc. Company conduct may change relatively quickly, while it is less likely that a company changes what it actually produces.

There was substantial political debate on which products ought to be subject to negative screening. Many politicians and members of the public were in favour of including, for example, tobacco on the list of such products. In the end, however, the list of screened products was limited to specific weapons.

We now turn to examining more closely how the negative screening mechanism works.

HUMANITARIAN PRINCIPLES AND NEGATIVE SCREENING OF CERTAIN WEAPONS PRODUCERS

The first paragraph of Point 4.4 of the Ethical Guidelines states that the Council on Ethics shall recommend exclusion of companies producing *weapons that through normal use may violate fundamental humanitarian principles*. These humanitarian principles are as follows:

- the **principle of proportionality**, which refers to weapons that through normal use lead to unnecessary suffering or superfluous injury;
- the **principle of distinction**, which refers to weapons that do not distinguish between military objectives and civilians.

Different types of weapons, ammunition and means of warfare are prohibited under existing international law with reference to these principles. Both the Advisory Commission on International Law and the Graver Commission assumed that it would be in violation of Norway's obligations under international treaty law to invest in companies that produce or sell chemical weapons, biological weapons or anti-personnel mines. Moreover, the Graver Commission assumed that it would be gravely unethical to invest in the production of weapons and ammunition mentioned in the UN Convention on Certain Conventional Weapons (CCW) (weapons the primary effect of which is to injure by fragments which in the human body are not detectable by X-rays, as well as booby-traps and certain mines, incendiary weapons and blinding laser weapons).

All of the above mentioned weapons are prohibited under international law. However, certain weapons *not* clearly prohibited under international law still might be considered to violate fundamental humanitarian principles. This was, both by the Graver Commission and the Parliament, considered to be the case for nuclear weapons and cluster weapons. The preparatory work of the Guidelines thus lays down an exhaustive list of weapons, including both prohibited *and* non-prohibited weapons that were considered to violate humanitarian principles. These are: chemical and biological weapons, blinding laser weapons, munitions with fragments not detectable by X-ray, incendiary weapons as referred to in the CCW, anti-personnel mines, cluster weapons and nuclear weapons.

CLUSTER WEAPONS

Soon after its establishment, the Council on Ethics examined the Fund's portfolio with a view to identifying companies involved in production of cluster weapons. The Council first set out to define the term "cluster weapons", and then to identify companies involved in production of key components of such weapons.

On 16 June 2006, the Council submitted a recommendation to the Ministry of Finance to exclude seven companies. These companies were General Dynamics Corp., L3 Communications Holdings Inc., Raytheon Co., Lockheed Martin Corp., Alliant Techsystems Inc., EADS Co. (European Aeronautic Defence and Space Company) and Thales SA.

The Council, referring to the terms "fundamental humanitarian principles", based its recommendation on the principle of *distinction*[12]—the Council recognized that cluster weapons generally are indiscriminate, as they affect an area rather than being aimed at specific targets. It is for this reason that they are often labelled "area weapons". Also, many cluster weapons remain unexploded after the end of hostilities and thus continue to pose a danger to the civilian population.

The Council on Ethics discussed in detail why the use of cluster weapons could potentially contradict the principle of distinction:

> Estimates concerning the dud rates for cluster munitions vary. Producers often refer to a failure percentage between 2 and 5. Military forces have, under some circumstances, accepted a failure rate of up to 10–12 percent. Mine clearers often report that the portion of cluster munitions duds is between 10 to 30 percent. … The failure rate depends on various factors such as what type of ammunition is used, the delivery method and the circumstances pertaining to where the ammunition lands. In recent years, cluster munitions have increasingly been used as rocket- or artillery-fired ammunition, while at the same time the use of air-dropped cluster munitions has diminished. The most common firing system of late is the so-called Multi Launch Rocket Systems … . Humanitarian organizations have alleged that cluster munitions fired by this method caused over 4,000 deaths after the Gulf War in 1991. Under this ("Desert Storm") operation in Iraq, artillery-delivered cluster munitions (with a capacity for 7,728 explosive devices dispersed by 12 rockets) had

> a failure rate of approximately 16 percent (the Pentagon's estimate in a report from 2000).[13] This implies that there would be approximately 1236 un-detonated explosive devices in an area of 12 to 24 square kilometers.[14]

The Council therefore recommended that the Fund stop investment in companies involved in the production of key components of cluster weapons. These components include the explosives themselves, the surrounding canister, and the mechanism or fuse which makes the explosive charge detonate. Guidance mechanisms, which steer the cluster weapon toward its target and make them strike at the correct angle, were also considered as key components.[15]

Due to the variety of types and product specifications within the term "cluster weapons", the Council did not attempt to establish an exhaustive list of what key components in such weapons might be. The recommendation only cited examples of what *could* be considered key components.

The Council found that not all cluster weapons fall within the exclusion criteria. Certain weapons called "advanced munitions", generally containing no more than 10 bomblets per munition, were explicitly exempted from the Council's recommendation. As the bomblets are target seeking and made to detonate only when they hit armoured vehicles, they were deemed to be of limited risk to civilians during hostilities. The weapon was therefore not classified as an "area weapon" designed to hit randomly over a large area. Moreover this weapon type contains better fuse mechanisms resulting in lower failure rates, thereby posing less danger to civilians after hostilities. For these reasons, advanced munitions were not considered to be in violation of fundamental humanitarian principles.

Having decided what would fall within the criteria on cluster weapons, the Council recommended that seven companies be excluded from the Fund. The recommendation was based on information from a number of different sources. In addition to the Council's own research, information was gathered from databases of Jane's Information Group, the Norwegian People's Aid landmine division, the Human Rights Watch's Arms Division, the International Campaign to Ban Landmines, the Norwegian Defence Research Establishment and the Ethical Investment Research Service. It was emphasized by the Council that its recommendation did not necessarily

contain an exhaustive list of possible producers of cluster weapons, and that new recommendations concerning the further exclusion of companies may be given at a later date.

Before making its final recommendation, the Council requested that the Central Bank ask companies to verify their possible involvement in cluster weapons production. The question posed by the Bank to the companies is cited in the Recommendation. Each was asked if their company, or subsidiaries of their company, were producing, assembling or planning to produce or assemble:

> key components of air delivered or surface delivered cluster dispensers such as aerial bomb dispensers, rockets or other containers, and/or sub-munitions for such dispensers, such as ICM (Improved Conventional Munitions) or DPICM (Dual Purpose Improved Conventional Munitions)/CEM (Combined Effects Munitions).

Some of the companies responded that they were not involved in cluster weapons production. Others did not answer at all. Based on the responses from companies and on the other information gathered over several months, the Council gave a detailed explanation for why each of the seven companies was subject to the exclusion criterion.

The Ministry of Finance subsequently decided to follow the recommendation and instructed the Central Bank to sell its shares in the relevant companies. On 2 September 2005, the recommendation was made public.[16]

NUCLEAR WEAPONS

As mentioned above, nuclear weapons are among the weapons that were included in the criterion on negative screening. This had, however, been a controversial political issue, partly because Norway is a member of NATO, and benefits from a defence strategy involving nuclear arms. But at the same time, Norway has a clear and unequivocal nuclear weapons policy which entails that nuclear weapons are prohibited on Norwegian territory in peacetime.

The Graver Commission concluded that the Fund should not invest in companies that “develop and produce key components to nuclear

weapons".[17] This was seconded by the Parliament in subsequent discussions. The Council assumed that "development and production" encompasses more than just the actual production of nuclear warheads. The term includes, for example, the missile carrying the warhead. Certain forms of testing of new weapons and maintenance of existing weapons also fall within the scope of the exclusion criterion. The Graver Commission specifically pointed to the possible future production of "mini-nukes" stating that:

> The idea is to use such weapons in warfare and not only as a deterrent. Such a strategy will necessarily lead to the collapse of the non-proliferation regime, and rapid global use of nuclear weapons. If the proposal receives political and financial support, the production of such weapons could start in a few years. The Petroleum Fund could therefore provide a signal effect by limiting its investment possibilities with regard to the development and production of such small nuclear weapons.

The preparatory work thus indicates that development and production of small nuclear weapons, including "bunker busters", would fall within the criterion.

In the work regarding nuclear weapons, the main challenge for the Council was to interpret the term "development and production of key components" to nuclear weapons. It was assumed that production of material that can be used in warheads and the production of the warheads themselves only take place at government-owned facilities, and would thus not be within the Fund's portfolio. Private companies, however, may be directly involved in the development and testing of nuclear warheads. The Council considered any form of testing of nuclear weapons to be crucial to the development of nuclear weapons, and found therefore that such activity falls within the Fund's exclusion criteria. Companies that provide services related to operation and maintenance of buildings and general infrastructure at facilities that may produce nuclear warheads, but take no other part in the actual production, were not considered for exclusion.

The Council found that development or production of products or materials or other activities that may be categorized as "dual use" was, as a point of departure, not covered by the Guidelines. This would for example be production or enrichment of uranium for other purposes than nuclear weapons. It would also be production and maintenance of delivery

platforms (aircraft, surface ships, submarines, missiles) that can also be used to deliver conventional weapons. Moreover, nuclear-powered submarines were considered to fall outside the criterion. Although they are propelled by means of nuclear energy, such submarines can carry both conventional and nuclear weapons. The same applied to naval vessels, as they can carry both nuclear and other weapons.

However, missiles that serve no purpose other than to deliver nuclear warheads were not considered "dual use". Such missiles would be intercontinental ballistic missiles launched from land or sea, and were regarded as key components to nuclear weapons. The Council also regarded programmes of upgrade and renewal as a continuous production process and equalled this to initial production of key components to nuclear weapons.

When the Council had arrived at a delimitation of what would be covered by the criterion on nuclear weapons, it started to collect information on which companies that would be candidates for exclusion. The Council collected information from different sources such as the companies' web sites, Jane's Information Group databases, and the Norwegian Defence Research Establishment. Companies that had already been excluded from investment by the Fund due to their production of cluster munitions, such as Lockheed Martin and EADS, were not considered on the basis of the nuclear weapons criterion.

The same procedures with regard to contacting companies, as described in the above section on cluster weapons, was undertaken. The relevant companies were asked whether they, or any subsidiaries, were involved in the development, testing, production, assembly or maintenance of components made for nuclear weapons. Some of the companies that received this request responded that they were not involved in nuclear weapons production. Several companies did not reply to the letter, and some responded in a manner that confirmed the company's involvement in production or development of nuclear weapons. Based on the responses from companies and on the other material that had been gathered, the Council gave detailed reasons explaining why each company was deemed to fall within the exclusion criterion on nuclear weapons.

In a recommendation dated 19 September 2005 and published by the Ministry on 5 January 2006, the Council proposed exclusion of seven

companies on the basis of the criterion relating to nuclear arms. These were BAE Systems Plc., Boeing Co., Finmeccanica Sp.A., Honeywell International Inc., Northrop Grumman Corp., United Technologies Corp. and Safran SA. As in the cluster weapons recommendation, it was emphasized that the recommendation did not necessarily contain a complete list of companies that might fall within the exclusion criterion and that further recommended exclusions on this basis may follow later.[18]

Anti-personnel mines

As mentioned above, the former Advisory Commission on International Law recommended the exclusion from the Fund of companies involved in the production of anti-personnel mines. As a result, the Fund's portfolio had already been screened with regard to producers of anti-personnel mines when the Council on Ethics was established.

Following a news report on possible future production of a new weapons system classified as an "anti-personnel mine alternative" (APL-A), the Council on Ethics was asked by the Ministry of Finance to assess whether the two weapons systems—*Spider* and *Intelligent Munition System* (IMS)—would be considered illegal under the Mine Ban Convention.[19] The question was, more specifically, whether these weapons systems could be considered to fall within the definition of an anti-personnel mine.

According to the Mine Ban Convention, an anti-personnel mine is "a mine designed to be exploded by the presence, proximity or contact of a person and that will incapacitate, injure or kill one or more persons". The Council found that weapons that are designed to explode because of a person's inadvertent contact, and thus are victim activated, fall within the definition of an anti-personnel mine, irrespective of whether they are classified as such. The weapons in question, Spider and IMS, contain explosives meant to be detonated manually, by a so-called "man in the loop", which means that a person operates the weapon from a distance. If an explosive is detonated manually by an operator it is not prohibited under the Mine Ban Convention. There have, however, been reports that this detonation system could be made inactive through a so-called "battlefield override" function, meaning that detonation would again be victim activated.

The Council found that if the weapons systems in question were going to be equipped with battlefield override function, or in other ways designed to

circumvent the "man-in-the-loop" feature, they would fall within the scope of the prohibition in the Convention because the weapon would be victim activated. The Council therefore announced that it would, if a decision is made to equip these weapons systems with a battlefield override feature, recommend exclusion of the relevant producing companies.[20] The Council on Ethics is therefore following the development concerning these weapons systems closely.

POSSIBLE CONSEQUENCES OF EXCLUSION OF WEAPONS PRODUCERS

In the preparatory work for the Ethical Guidelines it was made clear that the only reason for exclusion of companies on ethical grounds was the desire to avoid complicity in unethical acts:

> In the view of the Committee, striving to achieve justice by using the Fund to penalise or reward is beyond the obligations that should be imposed on the Fund. In practical terms, this means that the Committee will not propose an approach whereby the Fund withdraws its investment from a company that has acted unethically in response to the unethical action. It is the opinion of the Committee that if the Fund withdraws its investment, it must do so because withdrawal is considered necessary to avoid complicity in unethical actions in the future.

There was therefore no explicit intention on the part of the Fund to influence either weapons producers or governments through the criteria in the Ethical Guidelines. However, it seems that the exclusions may have had an influence beyond avoidance of complicity.

First, it seems that other investors are following the Pension Fund's actions to a certain extent. Second, it seems that some of the companies are less likely to advertise about these weapons than they were a few years previously. Third, the exclusions may be an inspiration and encouragement to organizations and other parts of civil society engaged in disarmament and humanitarian issues. These points will be discussed in the following section.

Effects with regard to other investors

Because each recommendation is made public, along with detailed reasons for why the relevant company is excluded under the Ethical Guidelines, it is possible for other investors to use the recommendations for their own purposes, for example to follow the Council's recommendations. Because the recommendations are publicized, the reasons for excluding companies must be based on solid facts. Considerable time and resources are spent to get the facts as accurate as possible. When a draft recommendation has been made, it is sent to the relevant company for comments. This is an important part in improving the quality of each recommendation. There have been a number of cases, particularly within the Nordic countries, where both private and public funds have followed the Fund's exclusions on weapons. Also, there have been examples of investors in other European countries excluding companies on the basis of the weapons criteria, particularly the exclusions made on the basis of production of cluster weapons.[21]

Effects with regard to companies

It appears to be less controversial to exclude companies on the basis of involvement in the production of cluster weapons than of nuclear weapons. Disquiet has grown about the use of cluster weapons in recent decades, as proof has emerged that they pose particular humanitarian risks to civilians in the conflicts in which they have been used. In contrast, nuclear weapons have not been used in warfare for more than six decades and memory of their humanitarian effects on Japanese civilians has faded. Moreover, the possession of nuclear weapons by the Permanent Five on the United Nations Security Council (China, France, Russia, the United Kingdom and the United States) has largely become part of the international legal landscape under the Nuclear Non-Proliferation Treaty, at least until its nuclear disarmament obligations are fulfilled. The international "coalition" of humanitarian organizations and others that fronted the total ban on anti-personnel mines may also have influenced public opinion with regard to cluster weapons. For example in Norway, organizations such as the Norwegian Red Cross and Norwegian Peoples' Aid have campaigned in the press and tried to influence the Government to ban cluster weapons. It is increasingly difficult to find information about these weapons on the web sites of the producers. Many governments have signalled an interest in regulations on use, or even a ban on cluster munitions.[22]

An example of how companies themselves find it undesirable to be associated with cluster weapons was illustrated by recent events concerning the European company EADS. This company was excluded from the Pension Fund because of its ownership of the company TDA, in a joint venture with Thales SA. According to EADS, TDA produced mortar ammunition called PR Cargo, which the Council considered to be cluster ammunition that would fall within the criteria of the Fund's Ethical Guidelines.[23]

EADS had been mentioned briefly in the recommendation on nuclear weapons because of its ownership in the company MBDA and its involvement in the development of the nuclear missile M51. Because the company had already been excluded for its involvement in production of cluster munitions, it was, however, not recommended for exclusion on the basis of its involvement in the production of nuclear weapons.

In a letter to the Central Bank, dated 21 March 2006, EADS stated that the company was no longer an owner of TDA and that consequently there was no longer a basis for exclusion of the company from investments due to involvement in production of cluster munitions. In its letter, EADS confirmed its involvement in the development of the M51, but went on to say: "Unjustified association of EADS with cluster bomb business could impact EADS' reputation in Norway." The Council on Ethics thus made a new recommendation concerning EADS, which upheld the recommendation about its exclusion from the Fund, but on the basis of the nuclear weapons criterion and not because of cluster weapons.[24]

It is interesting to note that the *reasons* for exclusion matter to a company to this extent. It seems fair to assume that the background for this is that cluster weapons are increasingly seen as a humanitarian problem.

CONCLUDING REMARKS

In its recommendation on cluster weapons, the Council on Ethics distinguished between cluster weapons that may "violate fundamental humanitarian principles" and cluster weapons that were seen to fall outside of the criterion. This subject is clearly controversial. There is no agreed definition of what a cluster weapon is. It could, for instance, simply be all weapons consisting of more than one submunition. The mandate of the

Council on Ethics is to exclude the weapons indicated in the Graver Report, but the guidelines themselves clearly specify that they have to be weapons which through normal use violate fundamental humanitarian principles. As mentioned above, the Council concluded that it was the cluster weapons that had an *area effect* and thus were *indiscriminate during an attack*, or which left *duds posing a threat after the attack*, that were to fall within the exclusion criterion. The Council deliberately did not embark on discussions on "tolerable" failure rates. Even as little as 1% could constitute a humanitarian problem if there were hundreds or thousands of submunitions.

The Council's working definition applied in the recommendation on exclusion of weapons companies may provide a contribution to a more general discussion on how to define cluster weapons in terms of what should be covered under a potential international ban. To the author's knowledge, not many other investors have debated exclusion of companies on the basis of weapons in such detail at the technical as well as legal level. In that respect, it could provide input or inspiration, not only for other investors who seek to avoid unethical investments, but also for other civil society actors working for the limitation of inhumane means of warfare.

When assessing the potential effects of ethical guidelines for investment policies, it seems important also to acknowledge the limitations of such policies. There is no doubt that Norway contributed much more significantly in banning anti-personnel mines through its foreign policy strategies and diplomatic work as a government than through its disinvestment in the above mentioned anti-personnel mine producing company. Public disinvestment policies and ethical guidelines for public funds can never constitute very effective foreign policy instruments. At the same time, it seems clear that the publicity generated by disinvestment on ethical grounds does have an impact. For example, in Norway, journalists have started to ask why the Norwegian armed forces can keep the same kind of cluster weapons that have been excluded by the Council on Ethics. Although the Ethical Guidelines cannot take much of the credit for the stigmatization of, for example, cluster weapons by international public opinion, its criteria and concrete exclusions hopefully contribute to an increased awareness concerning these issues among investors, both private and public.

Notes

1 The Fund's investment universe consists of all the companies worldwide that it could invest in. There are tens of thousands of potential investments. It differs from the Fund's portfolio—the companies it is invested in—which is a much smaller number, in the low thousands.

2 See the Advisory Council's recommendation at <http://odin.dep.no/fin/english/topics/pension_fund/p10001682/006051-990424/dok-bn.html>.

3 Norway, *Forvaltning for Fremtiden: Forslag til Etiske Retningslinjer for Statens Petroleumsfond*, NOU 2003:22, 25 June 2003. Under Article 1.c of the 1997 Anti-Personnel Mine Ban Convention, each state party undertakes never to "assist, encourage or induce, in any way, anyone to engage in any activity prohibited to a State Party under this Convention".

4 See Point 1 of the Ethical Guidelines, <http://odin.dep.no/fin/english/topics/pension_fund/p10002777/guidelines/bn.html>.

5 Ibid.

6 Ibid.

7 Ibid.

8 Four of these pertain to the negative screening of weapons producers, and two pertain to the ad hoc exclusion mechanism. Although the recommendations on ad hoc exclusion are not subject to further consideration in this article, they can be found at <http://odin.dep.no/etikkradet/english>.

9 The UN Global Compact and the OECD Guidelines for Multinational Enterprises are built on the notion of "responsible corporate citizenship". For more information on the UN Global Compact see <www.unglobalcompact.org>. For further information and references related to the OECD Guidelines see *The OECD Guidelines for Multinational Enterprises,* <www.oecd.org/dataoecd/12/21/1903291.pdf>.

10 See <www.norges-bank.no/english/petroleum_fund/articels/2004/ownership.html>.

11 See Point 2 in the Ethical Guidelines, <http://odin.dep.no/fin/english/topics/pension_fund/p10002777/guidelines/bn.html>.

12 See Norway, *Forvaltning for Fremtiden: Forslag til Etiske Retningslinjer for Statens Petroleumsfond*, NOU 2003:22, 25 June 2003, pp. 142–

143, which concerns the Graver Committee's understanding of *fundamental humanitarian principles*.

13 Human Rights Watch, *A Global Overview of Explosive Submunitions*, 2002, <www.hrw.org/backgrounder/arms/submunitions.pdf>.

14 <http://odin.dep.no/fin/english/topics/pension_fund/p10002777/screening/recommendations/006071-110251/dok-bn.html>

15 These guidance mechanisms make it possible to drop cluster bombs from greater heights and therefore avoid anti-aircraft fire.

16 The recommendation can be read in full at the web site of the Council on Ethics. The sources relied upon with regard to each company appear both in the text and in the footnotes, <http://odin.dep.no/etikkradet/english/documents/099001-990075/dok-bn.html>.

17 <http://odin.dep.no/fin/english/topics/p10001617/p10001682/006071-220009/dok-bn.html>

18 This recommendation can be read in full at the web site of the Council on Ethics, <http://odin.dep.no/etikkradet/english/documents/099001-990075/dok-bn.html>.

19 The basis for the request was section 4.3 of the Ethical Guidelines, which says that the Ministry of Finance may request the Council's advice on whether an investment can constitute a violation of Norway's obligations under international law.

20 <http://odin.dep.no/etikkradet/english/documents/099001-990071/dok-bn.html>

21 Because very few funds publicize which companies they exclude and why, there is not much available information on this matter in the public domain. However, the Council on Ethics has received information regarding a few such exclusions "in confidence".

22 See for example, the Protocol on Explosive Remnants of War (Protocol V to the 1980 Convention on Certain Conventional Weapons), 28 November 2003.

23 <http://odin.dep.no/etikkradet/english/documents/099001-210003/dok-bn.html>

24 <http://odin.dep.no/etikkradet/english/documents/099001-110011/dok-bn.html>

CHAPTER 11

THE ROLE OF NON-GOVERNMENTAL ORGANIZATIONS IN THE MONITORING AND VERIFICATION OF INTERNATIONAL ARMS CONTROL AND DISARMAMENT AGREEMENTS

Michael Crowley and Andreas Persbo

SUMMARY

The verification of international agreements in the arms control and disarmament field has traditionally been framed in terms of formalized international regimes and institutions. A relatively recent phenomenon is the role of civil society in the monitoring of these agreements. This chapter examines non-governmental organization (NGO) monitoring activities and involvement in verification processes in order to assess their value to arms control and disarmament. Drawing from a number of recent case studies, we explore how such NGO activities can be developed in the future.

INTRODUCTION

In many regions of the world—particularly since the end of the Cold War—the nature of the relationships between civil society and governments has been changing. This has been reflected in the growth of non-governmental organizations worldwide.[1] Ten years ago, the United Nations estimated that there were nearly 29,000 international NGOs[2] in existence and since then research indicates that the number of NGOs has continued to increase apace.[3]

In certain issue areas, this growth in NGO numbers has coincided with a perceived increase in the influence that NGOs can and do exert upon governments. Indeed much research has highlighted the important roles

NGOs have played in promoting and influencing the negotiation of a wide variety of international agreements on issues of global concern whether they be on the environment, public health, human rights or debt, trade and development.[4] In the field of human rights, for example, NGOs have played important roles in developing proposals, and promoting and building government support for a number of international agreements, processes and bodies such as the UN Convention Against Torture, the UN Convention on the Rights of the Child, and the International Criminal Court.

Even in the more sensitive areas of arms control and disarmament, there have been some important NGO achievements, most notably the successful signing of a global treaty to ban anti-personnel mines in 1997. In recent years, NGOs have done much to highlight the devastation wrought by conventional weapons—particularly small arms and light weapons—and to promote national, regional and international governmental action on this issue, culminating in an ongoing global campaign—*Control Arms*—for an Arms Trade Treaty to control conventional arms transfers.[5]

While such NGO campaign and advocacy work has, by its very nature, received widespread attention, NGOs are also increasingly involved in the implementation of international agreements, sometimes directly and sometimes through assistance to states. In this regard, one area of NGO activity that has not been adequately studied has been the crucial role played by the NGO community in monitoring, and in some cases verifying, international agreements. Indeed, non-governmental monitoring, sometimes referred to as "citizens' reporting", "inspection by the people" or "civil society monitoring", has become an important element in the international community's evaluation of how effectively states implement their treaty obligations on a wide range of issues.

This chapter will examine the roles that NGOs currently play in monitoring international agreements, particularly those covering arms control and disarmament issues, by reviewing a number of case studies of organizations and networks currently active in the field. The chapter will then explore how such activities can be developed in the future. However, a short descriptive overview of monitoring and verification in the context of arms control and disarmament is provided first.

DEFINING VERIFICATION AND MONITORING

In terms of international relations, verification can be defined as "a process covering the entire set of measures aimed at enabling the parties to an agreement to establish that the conduct of the other parties is not incompatible with the obligations they have assumed under that agreement".[6] In 1995, a UN verification panel defined verification as "a process in which data is collected, collated and analysed in order to make an informed judgment as to whether a party is complying with its obligations".[7]

The fundamental function of verification is to gather facts, which subsequently can be assessed against some standard. Guido Den Dekker has broken down this process into three fundamental stages:

- fact-finding (establishing the factual behaviour of the state);
- review (testing the established facts against the rules set out in a treaty); and
- assessment (deciding or estimating the degree of compliance with the rule).[8]

Verification sets very high demands on the impartiality, objectivity and professionalism of any organization—specifically those UN and other inter-governmental organizations tasked and empowered to verify international treaties and other multilateral agreements. In 1988 the UN General Assembly endorsed a set of 16 principles to ensure efficient and effective verification.[9] These have been regularly reviewed and endorsed subsequently, most recently in 2004.[10] These principles formulate two important requirements that any verification arrangement should fulfil:

- it must be able to produce "clear and convincing evidence" of compliance or non-compliance; and
- it must produce this evidence in a timely fashion.

In terms of arms control and disarmament, verification is often a highly legalistic process to determine whether States Parties to a treaty are in compliance with the provisions of that treaty. For certain arms control treaties, verification is undertaken by a specific named international verification body that has been established by the States Parties to that treaty, while for other agreements verification is undertaken by the states

themselves. Given the extremely serious potential consequences of a failure to discover covert cheating of certain arms control agreements or of delivering a "false positive" determination, verification bodies will often be given extensive powers and resources by the States Parties to those treaties. Sometimes these powers will extend, for instance, to undertaking intrusive on-site inspections or remote sensing with satellite technology.

The nature of the verification body and the intrusiveness of the verification permitted can vary considerably. Besides being dependent upon the treaty itself, it is often related to the nature of the arms system being controlled or prohibited and its importance to national and international security. In certain circumstances the verification body may undertake some but not all of the steps outlined by Dekker for a complete verification process.

Effective verification often requires the cooperation of the States Parties.[11] It is not likely that a verification process lacking cooperative elements will be particularly successful. For example, direct communication with a state under investigation and direct observation on the ground are essential elements of any verification regime (see Box 11.1 overleaf). Observation—which for instance is necessary to corroborate a governmental declaration—requires access to the state. Only a cooperative state is likely to allow access.[12] It has been noted by the International Atomic Energy Agency that the effectiveness of its verification regime to a large degree is dependent on the effectiveness of national systems of accountancy and control, and on the degree of cooperation afforded by those systems.[13]

To facilitate cooperation from States Parties, the verification regime itself needs to be objective, impartial and non-discriminatory. Indeed, freedom from the influence of other parties and autonomy in decision-making are key factors in providing a guarantee of trust, credibility and transparency in the working of the verification regime.[14] To support a conclusion of non-compliance, data must be collected, audited and assessed in a principled and careful manner, preferably in a process where subjective determinations are kept to a minimum. Of course NGOs are potentially able to do this quite efficiently. However, there is a risk that, in certain cases, the "progressive" mandate of an NGO may compromise its credibility as a neutral verification body in the eyes of certain states. The danger of this is greater if the NGO has a strong campaigning or advocacy agenda running in parallel with its monitoring and verification activities (see Box 11.2 on page 230).

Box 11.1. What methods are usually employed to gather information?

One essential component of both monitoring and verification is data collection. Organizations that are attempting to monitor and verify compliance with international arms control and disarmament agreements need to be able to collect large amounts of raw data and in ways in which they can have confidence it is accurate. Several methods can be employed to collect data, including:

- observation—passive monitoring by humans or technical means of an area, site or activity of particular interest;
- on-site inspection—a visit, of limited duration, by an inspection team to an area, site or facility; and
- remote monitoring—monitoring of treaty-related objects or activities from a distance. Techniques include satellites, aircraft, electronic intelligence and seismic, hydroacoustic and infrasound monitoring.[15]

The list is by no means exhaustive. Other methods can be used. The rapid technical progress in information technology and expansion of the internet means that there are many opportunities to monitor and collect verification-relevant information. The World Wide Web is available for most NGOs, which should massively enhance their monitoring capacity. However, assuming that NGOs can perform effective monitoring because they have access to the internet may not be true. While the collection and collation of internet materials could constitute "monitoring", the accuracy of such data is notoriously variable and therefore requires stringent sourcing, quality control and information audit procedures. John Carlson, a recognized authority on nuclear safeguards, has observed "media reporting and the internet … contain large amounts of inaccurate, incomplete, biased, repetitive or even fabricated material. Even when reports in the media or the internet appear to provide useful information it is difficult to assess the information's validity and origin".[16] And while following a situation from afar by compiling press reports or other documentation relating to a certain state behaviour can be defined as "monitoring", such compilation can seldom, if ever, replace a human observer on the ground.

Monitoring is a somewhat wider concept. It can be described as "efforts to detect, identify and measure developments and activities of interest".[17] Monitoring is often used with the purpose of finding indications of certain behaviour. Importantly, monitoring does not need to focus on finding evidence that necessarily must match a legal standard. Neither does it need to focus on a certain suspicious occurrence or incident. Instead, monitoring efforts can focus on finding information that helps paint a picture of overall

government compliance, even though the information in itself does not have direct relevance to the question of whether a state has breached an international obligation. In addition, a monitoring mechanism can monitor states that are not parties to a certain agreement. Often, monitoring forms the first stage of the verification process (fact-finding).

Box 11.2. Differentiating advocacy from monitoring

In 1999, the Cambodian government appointed Global Witness, a London-based NGO, as an independent forestry monitor. Under the terms of its contract, it had the right to carry out independent field inspections in concessions, review production and export records and other data.[18] In 2001, Global Witness published a report on the extent of illegal logging in Cambodia, allegedly without consulting with the Cambodian authorities. Later, advocacy by the organization for greater public scrutiny of forest concession plans led the Cambodian government to question whether the NGO had followed the terms of the agreement. Global Witness's contract was terminated.[19] Verification services are now handled by a commercial company, *Société Générale de Surveillance* (SGS). As a result of its experience in Cambodia, Global Witness now has largely separated its campaign and advocacy activities from its monitoring functions and continues to bid on tenders for independent forestry monitors.[20]

Although verification is primarily undertaken by inter-governmental organizations (IGOs) charged to do so under the specific treaty being verified, for certain issues, examples can be found of successful de facto civil society verification. For instance, in the human rights field, well-resourced and respected international organizations such as Human Rights Watch[21] and Amnesty International[22] operate stringent monitoring, review and assessment procedures that, using the above-mentioned definitions, fall very close to verification and are recognized as such by many in the international community.[23]

Furthermore, although not the subject of this paper, it should be noted that there are examples of profit-driven verification companies operating outside the governmental sector. For instance, the SGS is a multinational inspection, verification, testing and certification company with some 43,000 employees and about 1,000 offices and laboratories around the world. The company was founded in 1878 as a French shipment inspection house. Today, the company provides services relevant to verification in

areas such as agriculture, consumer testing, environment, trade assurances, industry, life sciences, minerals and oil, gas and chemicals. These services include inspection, testing and certification.

However, when it comes to arms control and disarmament, research indicates that NGO activities largely fall into the monitoring category. It is difficult to find examples of non-governmental organizations that carry out formal verification, something corroborated by a recent study by the Canadian Centre for Treaty Compliance.[24]

DIFFERING APPROACHES TO NGO MONITORING AND VERIFICATION

In a previous Verification Research, Training and Information Centre (VERTIC) study[25] of NGO monitoring of international agreements, the authors, Meier and Tanner, divided NGO interaction with the official treaty verification regime into three parts:

- official interaction—as part of a formal international verification mechanism;
- quasi-official interaction—loosely linked to official mechanisms; and
- informal interaction—outside of official verification mechanisms.

Such sub-divisions are by their nature imprecise and fluid. An unofficial monitoring process over time can acquire enough prestige and respect to become used by states, relevant IGOs and treaty-implementation mechanisms as a semi-official monitoring process. However, with such caveats aside, the categories are useful in helping to describe the possible roles that NGOs presently play and can play in future monitoring of arms control and disarmament agreements.

Official NGO involvement in monitoring international agreements

In a number of issue areas, such as the environment, NGOs have been able to establish formal links with the international treaty organizations that carry out official verification, or take part in aspects of such verification

themselves. However, such relationships are rare in the field of arms control and disarmament where the extent of NGO input into the official monitoring process is often restricted to the delivery of statements at meetings of State Parties. Examples of such NGO reporting can be seen at the Review Conferences of the UN Programme of Action on Small Arms and Light Weapons, the Biological and Toxin Weapons Convention and the Nuclear Non-Proliferation Treaty. Although NGOs are often allotted several hours or more to deliver their reports, the utility of this as a tool for feeding into monitoring processes is limited at best. An NGO may be able to highlight individual compliance concerns but is rarely given time to give an in depth overview required for comprehensive monitoring reporting. Furthermore the attention and weight given by states to NGO statements at such conferences can vary considerably.

Although formal agreements between an NGO and the relevant international treaty organization in the arms control and disarmament field are rare, there is precedence for such interaction. The Stockholm International Peace Research Institute (SIPRI) and the Preparatory Commission for the Organization for the Prohibition of Chemical Weapons (OPCW) exchanged letters establishing rules for sharing unclassified information. The exchange of letters was repeated after the Chemical Weapons Convention entered into force in 1997.[26]

More developed formal interaction between IGOs, states and NGOs has taken place with regard to issue areas impinging upon arms control and disarmament. An example of this is the so-called Kimberley process.

The Kimberley Process

Global Witness is one of several NGOs that conduct technical monitoring and verification in respect to "conflict diamonds".[27] Monitoring activities are conducted under the Kimberley Process Certification Scheme. This is a joint agreement involving governments, the international diamond industry and civil society actors to stem the flow of diamonds sold in order fund international armed conflict and civil war.[28] The Certification Scheme has enjoyed strong support from the UN Security Council.[29] The accord is a political agreement. It is not binding as a matter of international law. Under the scheme, each country must certify all rough diamond exports as conflict-free and must only allow rough diamond imports from other participating countries that are certified as conflict-free.[30] The initiative

centres on trade controls and minimum certification standards.[31] Some of the diamond trade associations have developed checklists outlining actions that members should take to implement self-regulation. As of November 2005, 69 participating states had passed relevant legislation.[32] One important component of the system is the *Kimberley Process Certificate* issued by designated authorities in exporting countries. This is a forgery-resistant document, which identifies a shipment of rough diamonds as complying with the requirements of the Certification Scheme.[33]

How does Kimberley Process monitoring and verification work in practice? Participating states submit annual reports on the implementation of the certification scheme to a working group on monitoring, of which Global Witness is a member.[34] This group determines whether the report provides adequate information on the implementation of the scheme and whether the information contained in the report raises any significant issues that may require follow-up by the working group or the wider Kimberley Process. The working group follows an agreed methodology. The national report forms the basis of the evaluation. Each member of the working group then assesses the report by filling out an agreed "standard matrix". The chair of the working group collates the individual assessments into a "consolidated matrix". The working group may, based on the consolidated matrix, ask the state to clarify aspects of its initial report (almost all participants receive such requests for clarification).[35]

The annual reports, together with the clarifications, are collated into a summary assessment. In this assessment, the working group may note that further clarification would be useful. It also notes where clarification questions have been adequately answered.[36]

The process is supplemented by "review visits". These visits are voluntary and are carried out with the agreement of the host state. Visits are to be carried out in an "analytical, expert and impartial manner".[37] The purpose of the visit is not to gather information relating to compliance or non-compliance, but rather to focus on "helping participants meet the requirements of the scheme, while identifying weaknesses where they exist and ensuring that serious compliance issues are taken up by the Kimberley Process as appropriate."[38] The process has been characterized by transparent behaviour, with no reported cases of participants having "sought to hide or falsify implementation practices or documentation".[39] The self-assessment of the working group on monitoring suggests that the

process has been able to live up to the requirement of objectivity and impartiality.[40]

QUASI-OFFICIAL NGO INVOLVEMENT IN MONITORING INTERNATIONAL AGREEMENTS

Landmine Monitor

The International Campaign to Ban Landmines (ICBL) established Landmine Monitor[41] in June 1998. Landmine Monitor's mission is to monitor and report on implementation of and compliance with the 1997 Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines (APMs) and their Destruction (also known as the Ottawa Convention). It is the first attempt to create a systematic and global non-governmental monitoring network for APMs.[42] While Landmine Monitor has no official status under the treaty, nor is it formally recognized by the treaty implementation bodies, it does work closely with governments and is funded in large part by them.

Landmine Monitor is a comprehensive, annual publication often numbering more than 1,000 pages. Its reports cover every aspect of treaty implementation and compliance. It also presents information on the anti-personnel mine problems and policies in all countries, including non-states parties, as well as thematic issues. It is normally tabled at the annual conference of States Parties to the Mine Ban Treaty, the first report being presented to the First Meeting of State Parties in Mozambique, in May 1999.[43] Its findings carry considerable weight. Alleged State Party violators are named, as are signatories that have violated the spirit of the agreement, and unusually non-state parties that would be in violation had they signed the treaty. In September 2001, at the Third Conference of States Parties, Landmine Monitor accused one State Party, Uganda, along with six signatories (Angola, Burundi, Eritrea, Ethiopia, Rwanda and Sudan) of having used APMs.[44] More recently, in 2005 it accused several non-party states—specifically Georgia, Myanmar, Nepal and Russia—of using APMs.[45]

Although Landmine Monitor does not claim that it is a formal monitoring mechanism or a technical verification regime,[46] it has gained such respect and trust through the quality of its research and analysis that it has become the de facto monitoring mechanism for the Mine Ban Convention. ICBL,

Human Rights Watch and the other key organizations producing the Monitor have sought to ensure the quality of the research through the careful choice of contributing researchers and organizations, stringent fact checking and review processes and a standardization of research methodology—which is detailed in Landmine Monitor's research manual.[47] The manual is designed to address questions related to, among other things, relevant research standards, key terminology and research coordination.[48] Even a brief review of the manual suggests that the Landmine Monitor team employs sound research methods. For example, the researchers should pursue at least three independent sources for each fact. The researchers are encouraged to doubt the reliability of the sources and to maintain an open mindset during fact collection. During fieldwork, the researchers are requested to be completely transparent with the examined state in regards to the purpose of the fact collection. If one fact cannot be solidly confirmed, the researchers must appraise the reliability of their source.

Important sources of information include interviews with government officials, the local population, community-based organizations, refugees, mine survivors, humanitarian aid organizations (including security personnel), church groups, ex-soldiers and journalists. The researchers are also encouraged to use a wide range of public documents, seeking out primary sources wherever possible. These include materials from the UN Mine Action Service, and agencies such as the United Nations Children's Fund, the UN Development Programme, the UN High Commissioner for Refugees and the UN Department for Disarmament Affairs, as well as regional organizations and governments (e.g. Ottawa Convention article seven reports). Data is also collected and collated from bodies such as the International Committee of the Red Cross, non-governmental demining organizations, commercial demining companies and national mine action centres.

Despite the potential weaknesses sometimes inherent in a system which incorporates the collection and analysis of open source material, Landmine Monitor has over the years succeeded in collecting a large amount of information on state compliance with the Mine Ban Convention.[49] While this inevitably remains an imperfect monitoring system in some respects, it is certainly preferable to the absence of any system and has had an important impact on the Convention's implementation.

Informal NGO involvement in monitoring international agreements

Most NGO monitoring of international arms control and disarmament agreements is completely outside the formal verification system of the treaty (if indeed the treaty has one at all). Such independent monitoring processes are often based upon the systematic collection and evaluation of open source information.

Examples of NGOs providing regular and comprehensive information on treaty compliance include the SIPRI Yearbook, and the CBW Conventions Bulletin produced by the Harvard Sussex Program on Chemical and Biological Weapons.

There are certain processes that, although currently informal, may in time grow to become quasi-formal as states grow to trust them and make greater use of the results obtained. A good example of a relatively new civil society monitoring process that has gained considerable respect from states is the Red Book produced by the Biting the Bullet project.

The Red Book

The illicit trafficking, proliferation and misuse of small arms and light weapons (SALW) is associated with enormous numbers of deaths and injuries worldwide. There are an estimated 300,000 people killed by SALW every year and over one million injured by these weapons.[50] There are an estimated 600 million or more SALW in existence today.[51] They are legally traded for use by government armed forces, police and civilians under licence. However, some of these state-sanctioned small arms transfers have been to military, security or police forces that have used such weapons for human rights violations or breaches of international humanitarian law. SALW have also fallen into the hands of criminals, terrorists and warlords, though diversion from the legal trade, theft from legal stores or through illicit manufacture.

In July 2001, a UN Programme of Action to Prevent, Combat and Eradicate the Illicit Trade in Small Arms and Light Weapons in All its Aspects was agreed by the international community.[52] The Programme of Action (PoA), although politically binding and not a legal treaty, is the most comprehensive international instrument that relates to controlling SALW.[53]

The PoA sets out a range of minimum standards, commitments and measures to be taken by states in areas such as the import, export and transit of SALW, the enforcement of UN Security Council embargoes, the regulation of arms brokering activities, stockpile management and the marking and tracing of SALW. It also contains references to issues such as the disarmament, demobilization and reintegration (DDR) of ex-combatants, and the impact of small arms on development. However, although the PoA also contains a range of commitments relating to information exchange and transparency, there has been little systematic implementation of these commitments, with the levels of such information exchange and transparency varying across SALW issues. The only substantial global information exchange that has so far taken place has been the production of national reports on PoA implementation produced for the Biennial Meetings of States (BMS) and the Review Conference. As of September 2006, 137 states had submitted at least one national report on PoA implementation to the UN Department of Disarmament Affairs (UN DDA). Electronic versions of many of these national reports are available from the UN DDA website.[54] However it should be noted that the scope and regularity of these reports have varied considerably.[55]

UNIDIR, together with its research partners, has produced two detailed analyses of this reporting at the request of governments.[56] These examinations have determined that reporting has increased and improved overall, but that there remains significant scope for further improvement. While some states have used such reporting and the BMS process to share detailed information on systems and standards in place, and some have identified areas in which assistance is needed, overall the character of information exchange is still uneven, and the utility of information provided has varied.

In 2003, in an attempt to fill the monitoring gap, the Biting the Bullet (BtB) initiative—comprised of Bradford University, International Alert and Saferworld—together with the International Action Network on Small Arms (IANSA),[57] published the first comprehensive and detailed examination of progress toward implementing the PoA. This "Red Book" was followed by two similar, but more detailed publications, released in 2005 and 2006.

The 2006 Red Book, which built on the findings of its 2003 and 2005 predecessors, attempted to outline and assess progress toward implementation of the PoA at the local, national, regional and international

levels. It drew on a wide range of primary and secondary sources gathered from over 180 countries. The Red Book aimed to:

> provide a resource for states, regional and international organisations, civil society groups, experts and citizens by: providing a broad, detailed and reliable empirical overview of progress towards implementing the PoA and associated national, regional and international commitments across all regions of the world since 2001 … illustrating experiences and identifying and analysing lessons learned in each of the regions … .[58]

The research was primarily conducted by a research team from Biting the Bullet in cooperation with over 100 members of IANSA and other experts from around the world. Project partner organizations and independent analysts were commissioned to research and provide the information used to prepare some national case studies and regional analyses. This was supplemented by further research, secondary data and the expertise of Biting the Bullet and IANSA members.[59]

The authors explained that considerable efforts were taken to verify facts and assessments contained in the Red Book. Efforts were made to contact as many governments as possible to invite them to provide relevant information in addition to that provided in their periodic reports on PoA implementation to the UN.

However, the 2006 report (combined with the information published in the 2005 and 2003 Red Books) does not claim to provide a complete picture of implementation. The authors explain that there have been several factors that prevent this, apart from limited project resources.[60] These include:

- A lack of transparency in many countries, which made it difficult to conduct research on certain aspects of implementation. The authors state that in some cases verification of information was extremely problematic.
- The wide scope of the PoA, which provides significant opportunities for different interpretations of what constitutes implementation-focused action.
- Implementation of the PoA has been an ongoing process—the Biting the Bullet report was completed in May 2006 and by the time it was published in July 2006, a number of countries had produced updates in time for the 2006 Review Conference.

However, despite these qualifications, the Red Book series has been a very important contribution to the process of implementation of the PoA and a significant resource for governments, international organizations and civil society.

Another civil society process worthy of mention is that of the Bio-weapons Prevention Project (BWPP).[61] The BWPP is a global civil society initiative established in 2002. It tracks governmental and other behaviour that is pertinent to compliance with international biological weapons treaties and other agreements, especially those that outlaw hostile use of biotechnology. Its role is particularly important given the lack of monitoring and verification provisions in the Biological and Toxin Weapons Convention (BTWC) and the subsequent failure of the international community to agree a Verification Protocol. The project works to reduce the threat of biological weapons by monitoring and reporting throughout the world. In this regard, BWPP supports and is supported by a global network of partners. By July 2006, BWPP had some 54 NGO partners that can contribute to the collection and compilation of open source information on BTWC implementation as well as on relevant industry and research developments.[62] The BWPP promotes its research via an annual Bioweapons Report and a searchable online database, the Bioweapons Monitor. These, together with other ad hoc reports produced by the BWPP secretariat or its members, are available on the BWPP website.

ENHANCING THE QUALITY AND SCOPE OF FUTURE NGO MONITORING AND VERIFICATION OF ARMS CONTROL AND DISARMAMENT AGREEMENTS

Arms control and disarmament agreements are intimately connected with the defence and security of states. The tendency of many states has usually been to seek to limit the degree of intrusiveness of all forms of external monitoring or verification whether conducted by other states or IGOs, and most particularly when carried out by NGOs. However, as can be seen from the case studies in this chapter, comprehensive non-governmental monitoring and even de facto verification is possible in certain circumstances. At the heart of such initiatives has been the development of trust between the States Parties and the NGO community, which itself has followed from government recognition and confidence in the independence and expertise of the relevant NGOs.

There are certain steps that can be taken now to increase the effectiveness of unofficial NGO monitoring of arms control and disarmament treaties and to explore the greater use of such NGO-derived information by the relevant treaty regimes.

A previous VERTIC study[63] analysing non-governmental monitoring of international agreements across the environment and arms control arenas, noted that such NGO monitoring has been most effective when:

- NGOs coordinate their monitoring activities internationally;
- NGOs have good access to official declarations and other relevant information;
- there is a clear legal basis for interaction between official verification mechanisms and non-governmental actors or the official verification mechanisms provide a role for NGOs; and
- international organizations and States Parties are open to NGO contributions.

Building upon this study and the findings of VERTIC's current review, we believe that the following initiatives may prove fruitful avenues for enhancing the quality and scope of NGO monitoring of arms control and disarmament agreements:

Securing a stable financial base for NGO monitoring and verification

One relatively simple measure that would do much to strengthen existing NGO monitoring and allow further development of such activities would be the establishment of a stable budgetary foundation for the relevant non-governmental organizations. Financial stability would allow NGOs to recruit, train and retain skilled professionals with relevant monitoring and verification knowledge and experience. Adequate and secure funding would potentially allow NGOs to support all the steps in the monitoring and verification process from information gathering, through fact checking and analysis of the raw research data, to undertaking a compliance determination—thereby ensuring stability and development of these procedures and the building up of long-term contacts with relevant government officials and civil society actors. States that have expressed support or appreciation for a certain NGO-driven monitoring mechanism should consider establishing monetary mechanisms to support this work.

Direct financial contributions by states can be viewed as potentially compromising to NGO impartiality, so stringent mechanisms need to be introduced to preserve NGO independence and objectivity. One possible solution could be the establishment of a multilateral fund that would channel funds from states, or other donors (such as charitable foundations), to specific NGO monitoring and verification processes for a certain treaty. The workings of such a fund would need to be fully transparent, ideally being made public in an annual report as well as being reported regularly to all the States Parties to the treaty.

Facilitating NGO access to relevant state monitoring expertise, training and resources

International NGO monitoring activities such as Landmine Monitor and the Red Book rely, to varying degrees, on informal networks of local researchers to conduct primary research and fact collection. Arguably, this can lead to a certain degree of unevenness in the quality and quantity of the collected information and also potentially lead to possible bias and inconsistency in the consequent analysis and final report.[64] Greater NGO access to governmental or inter-governmental verification professionals—possibly seconded to the NGO—or through NGO attendance at national or international verification training centres may well improve the professionalism of the organization or network considerably. In certain circumstances it may be possible for national governments, regional organizations or international organizations to provide the NGO with access to verification and monitoring information, technology or other resources to facilitate research, for example limited use of satellite information. If such support is offered and accepted, mechanisms would need to be established to preserve the impartiality of the NGO and to verify the research data that arises from such governmental sources.

Mechanisms to ensure objectivity and reliability of NGO monitoring

NGOs must establish stringent operational control mechanisms to safeguard NGO objectivity and the impartiality of their monitoring processes.

In terms of the primary research and information collection and collation, NGOs need to ensure standardization of procedures, reinforced by training

of paid and unpaid researchers. Processes to ensure the veracity of information obtained should be instituted, ranging from basic fact checking, use of multiple sources, internal review processes and external peer review processes. Where practicable, NGOs should be transparent as to their research and editorial methodology, for example publishing their guidelines for field researchers, as in the case of Landmine Monitor.

Those NGOs engaged in advocacy and campaigning, as well as research, need to ensure that their monitoring and verification work is completely separated from their campaign activities (see Box 11.2).[65] This separation safeguards against the organization's advocacy agenda influencing or appearing to influence the conduct or results of its monitoring work. Such a separation may also encourage greater state cooperation in the organization's monitoring activities.

To combat allegations of partiality and inconsistency in monitoring of treaty implementation, NGOs should give consideration to undertaking comprehensive reviews of the activities of all state parties, not just the so-called "problem states". Comprehensive coverage may also lead to the uncovering of activities of concern previously unknown because research had not been concentrated on other states. The aim of universal geographical coverage may well not be feasible for a single NGO and may require the development of, or support from, a network of researchers and NGOs across the world. Landmine Monitor and the Red Book are two successful examples of this. If such a research network or coalition is established, the standardization of research methodologies and establishment of stringent review processes becomes even more important.

Ideally, an NGO treaty monitoring system should review the entirety of States Parties obligations under that treaty rather than be restricted to a narrow range of treaty articles. Such a process would also allow the information to be more readily utilized by relevant international treaty organizations and fed into the treaty review structure. However, as recently reported by the Canadian Centre for Treaty Compliance, explicit, systematic comparison with treaty requirements in an article-by-article fashion is rare.[66] If such universal coverage is not possible given limited resources or NGO mandate priorities, then it is important that the NGO be clear about which specific articles it does monitor and be consistent in monitoring these obligations over time.

Developing greater interaction between NGOs and relevant IGOs

While it is important that NGOs and international organizations maintain their autonomy and focus on their relative strengths, overall monitoring and verification of treaties may well be strengthened if there is a greater interaction between the two communities. This could be facilitated by international organizations becoming more transparent to civil society, for instance by allowing NGOs greater access to data and information that international organizations have collected or have been provided with by states. The international organizations could also be more receptive to, and develop better channels for, NGOs to supply them with information.[67] For such interaction to be successful will require that NGOs maintain the highest standards of professionalism and integrity when researching, analysing and using information, respecting confidentiality and working with regard to the mandates of the relevant IGOs. Depending on the mandate of the international organization, it may be possible to establish clearer rules for interaction between NGOs and the IGO. In some situations it may be possible to formalize these arrangements in agreements detailing the rights and obligations of both sides.

Facilitating greater NGO access to state territory and activities

While some progress has been made to improve contact and build relationships among governments and NGOs, there still are a number of societies—particularly in the developing world—that remain suspicious of NGOs and oppose their involvement in treaty monitoring. In particular, they oppose NGO monitoring activities on their territories. It is therefore important for those NGOs carrying out such monitoring activities to develop a common understanding with the state whose territory or activities they intend to monitor. Misunderstandings between the NGO and the state on the nature and scope of the monitoring and the use to which the information will be put can lead to a breakdown in relations. In the worst-case scenario, misunderstandings can lead to open disagreement between the NGO and the state, resulting in the state restricting or interfering with NGO activities, even detaining NGO members and ejecting and banning the NGO from its territory.

Such situations can be avoided, or at least ameliorated, through greater transparency and clarity of intentions and processes from both sides. One possible mechanism to aid such clarity is by the exchange of "memoranda of understanding" between the NGO and the state. Such documents create an informal or formal foundation on which the subsequent activities of the NGO can rest. The memoranda can also establish legally binding rights and obligations for the NGO and the state respectively.

Enhancing and formalizing NGO involvement in official monitoring and verification processes

In the longer term for certain treaties, particularly those lacking adequate monitoring or verification systems, the international community should give consideration to developing a role for specific NGO monitoring activities, allowing them to feed into the existing formal treaty review processes.[68] The extent of such NGO involvement would be dependent on a range of factors, including:

- the defence and security implications of the weapons system under consideration;
- the specific nature of the control regime, for instance whether the particular weapons system is prohibited, such as with anti-personnel landmines;
- the extent and effectiveness of existing IGO monitoring and or verification regimes;
- the relationship and degree of trust between States Parties and the NGO community; and
- The level of NGO expertise on how to verify states' compliance with the norm in question.

Such a formalization of the relationships between NGOs and States Parties and IGOs would have potential benefits for all the actors and could do much to strengthen existing monitoring and verification processes.

For IGOs, the greater formalization of relations with NGOs could well strengthen and lead to the further development of existing fruitful partnerships. Given the mandate constraints that a number of IGOs face, such formalization may allow IGOs greater freedom to allot resources and personnel to joint monitoring operations with the NGO. Such formalization may also allow the IGO to use the information provided by the NGO as the

basis for further verification activities, increasing the likelihood that the IGO would detect breaches of compliance.

For NGOs, their involvement in the formal process would give their organizations and their research findings increased legitimacy and credibility among States Parties—potentially leading to NGO-highlighted breaches of compliance being more readily acted upon by states. Furthermore, NGO involvement in a formalized treaty monitoring process may lead to NGOs being accorded greater cooperation by all States Parties, for instance with regard to access to relevant sites, facilities and individuals. In time, this could in turn lead to a more official granting of rights and powers to the NGO.

For states, as well as benefiting from potentially more efficient and effective treaty monitoring and verification processes, a formalization of NGO involvement in treaty monitoring would mean that such NGO activities would be clearly defined and their limits established. The activities of such NGOs would become more predictable for the state, and concerns about national security should be consequently reduced.

The development of such formalized mechanisms would likely be a step-wise process, as trust is built between the various actors and the benefits for all are recognized. However, in the present political climate, it is admittedly difficult to envision a world where states would agree to surrender to non-governmental organizations, even to a limited degree, any of the sovereignty that they extend to intergovernmental organizations. Indeed today there are even difficulties in preserving the existing international verification organizations and ensuring that they are properly resourced, allowed to operate without restrictions and that their findings and recommendations are respected and acted upon by the international community.

FINAL THOUGHTS

Traditionally, when multilateral policy makers in arms control and disarmament have focused on verification of international agreements, they have framed these undertakings in terms of formalized international regimes and institutions. Verification efforts by the International Atomic Energy Agency, the Organisation for the Prohibition of Chemical Weapons

and the work of UN Security Council mandated verification commissions in Iraq are diverse examples of these kinds of approaches. Meanwhile, civil society involvement in comprehensive monitoring of international arms control and disarmament regimes is a relatively recent phenomenon and with a range of ramifications that have still to be fully considered by multilateral policy makers.

Such NGO activity is not specific to arms control and disarmament, but appears to be reflective of broader trends in civil society efforts to influence international behaviour including in human rights, international humanitarian law and the environment. Some of these NGO initiatives have been innovative, flexible and effective, strengthening the relevant control regimes to the benefit of all. Other examples have not been so successful, possibly due to a lack of NGO resources or relevant expertise, or because cooperation was not forthcoming from the governmental community.

In this chapter, we do not argue that NGO monitoring activities are a solution that can always substitute well for official monitoring and verification. However, we do believe that NGO engagement with, contribution to and involvement in official processes should be given greater consideration by policy makers. For, in the appropriate circumstances, such NGO activities can add value to existing monitoring or verification regimes, as in the case of the Kimberley Process, or help to fill a monitoring gap, as in the case of ICBL's Landmine Monitor.

This chapter aims to encourage multilateral policy makers' to think about new ways in which they can encourage, facilitate and benefit from appropriate NGO involvement in the monitoring and verification of arms control and disarmament agreements. It may be by sharing experience on effective methodology, or by discussing functional arms control areas where NGO monitoring could be practical and politically acceptable. Policy makers could also think about ways to work in partnership with NGOs, as appropriate. Indeed, NGOs may have roles to play that are more flexible, innovative, cheaper and perhaps even more effective than governments can achieve themselves.

Notes

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3 See "The Growth in the Number of NGOs in Consultative Status with the Economic and Social Council of the United Nations", <www.staff.city.ac.uk/p.willetts/NGOS/NGO-GRPH.HTM>.

4 See, for example, Elin Enge and Runnar Malkenes, "Non-Governmental Organisations at UNCED: Another Successful Failure?", in Helge Ole Bergesen and Georg Parmann (eds), *Green Globe Yearbook of International Co-operation on Environment and Development*, Oxford University Press, 1993, pp. 25–35; Cathleen Fisher, *Reformation and Resistance: Nongovernmental Organizations and the Future of Nuclear Weapons*, The Henry L. Stimson Center, Stimson Center Report no. 29, 1999; Margaret Keck and Kathryn Sikkink, *Activists Beyond Borders: Advocacy Networks in International Politics*, Cornell University Press, 1998; and Philippe Sands, "International Law, the Practitioner and Non-State Actors", in Michael Anderson (ed.), *The International Lawyer as Practitioner*, British Institute of International Comparative Law, 1998.

5 For details of the Control Arms Campaign, see <www.controlarms.org>.

6 Serge Sur, "General Considerations on Verification", in Serge Sur (ed.), *Verification of Current Disarmament and Arms Limitation Agreements: Ways, Means and Practices*, Dartmouth Publishing Company, 1991, p. 13.

7 UN General Assembly, *Verification in All its Aspects, Including the Role of the United Nations in the Field of Verification, Report of the Secretary-General*, document A/50/377, 22 September 1995, para. 15.

8 Guidio Den Dekker, *The Law of Arms Control: International Supervision and Enforcement*, Martinus Nijhoff Publishers, 2001, p. 105.

9 UN General Assembly, *Special Report of the Disarmament Commission to the General Assembly at its Third Special Session Devoted to Disarmament*, document A/S-15/3, 28 May 1988, para. 60.

10 UN General Assembly, *Verification in All its Aspects, Including the Role of the United Nations in the Field of Verification*, document A/RES/59/60, 16 December 2004, p. 2.
11 Allan Krass, *Verification: How Much is Enough?*, Taylor and Francis, 1985, p. 254.
12 Ibid.
13 International Atomic Energy Agency, *The Safeguards Implementation Report for 2004: Report by the Director-General*, document GOV/2005/32, 13 May 2005, p. 12, para. 50.
14 VERIFOR, *Minutes of the Experts' Meeting on Verification in the Forest Sector*, 27–28 April 2006, pp. 7–8, <www.verifor.org/meetings/Meeting%20Report.pdf>.
15 UN General Assembly, *Verification in All its Aspects, Including the Role of the United Nations in the Field of Verification, Report of the Secretary-General*, document A/50/377, 22 September 1995, pp. 125–126, 128.
16 Annette Berriman, Russell Leslie and John Carlson, *Information Analysis for IAEA Safeguards*, Australian Safeguards and Non-Proliferation Office, 2004, p. 4.
17 Guidio Den Dekker, *The Law of Arms Control: International Supervision and Enforcement*, Martinus Nijhoff Publishers, 2001, p. 102.
18 Arnoldo Contreras-Hermosilla, *Law Compliance in the Forestry Sector: An Overview*, SNV Report, 10 August 2001, p. 31, <www.illegal-logging.info/textonly/papers/law_and_compliance.pdf>.
19 US Department of State, "Cambodia's Termination of Forest Monitoring by Global Witness", press statement, 25 April 2003, <www.state.gov/r/pa/prs/ps/2003/19958.htm>.
20 Discussion with David Young, head of IFM (Independent Forestry Monitoring), Global Witness, 27 April 2006.
21 <www.hrw.org>
22 <www.amnesty.org>
23 Human Rights Watch often relies on interviews with victims or key officials. Testimonies are corroborated with a range of other evidence collected by Human Rights Watch. For an example of Human Right Watch methodology, see, for instance, Human Rights Watch, "No Exit: Human Rights Abuses Inside the MKO Camps", p. 3, <www.hrw.org/backgrounder/mena/iran0505/iran0505.pdf>.

24 See Richard Bruneau, *Unofficial Monitoring of Compliance with Arms Control Treaties: A Survey*, Canadian Centre for Treaty Compliance, Compliance Chronicles no. 2, 2006.

25 Oliver Meier and Clare Tenner, "Non-governmental Monitoring of International Agreements", in Trevor Findlay and Oliver Meier (eds), *Verification Yearbook 2001*, VERTIC, 2001, pp. 206–227.

26 Ibid, p. 210.

27 For an interesting account of Global Witness and the government of Canada's role in stemming the flow of conflict diamonds, see Kim Richard Nossal, "Smarter, Sharper, Stronger? UN Sanctions and Conflict Diamonds in Angola", in Andrew Fenton Cooper et. al. (eds), *Enhancing Global Governance: Towards a New Diplomacy*, United Nations University Press, 2002, pp. 248–267.

28 See <www.kimberleyprocess.com>.

29 UN Security Council, "Security Council Expresses Strong Support for 'Kimberly Process', Aimed at Halting Illicit Diamond Trade Used to Fuel Conflicts: Resolution 1459 (2003) Adopted Unanimously", document SC/7648, 28 January 2003.

30 Global Witness, *Making it Work: Why the Kimberley Process Must Do More to Stop Conflict Diamonds*, 2005, p. 6.

31 Halina Ward, *Legal Issues in Corporate Citizenship*, International Institute for Environment and Development, 2003, <www.sweden.gov.se/content/1/c6/02/39/81/3ce0b609.pdf>.

32 Global Witness, *Making it Work: Why the Kimberley Process Must Do More to Stop Conflict Diamonds*, 2005, p. 1.

33 "Kimberley Process Certificate means a forgery resistant document with a particular format which identifies a shipment of rough diamonds as being in compliance with the requirements of the Certification Scheme". Taken from "Kimberly Process Certification Scheme", <www.kimberleyprocess.com:8080/site/?name=kpcs>, section I.

34 The Kimberley Process Working Group on Monitoring is composed of the governments of Canada, the Central African Republic, the European Community, India, Israel, the People's Republic of China, the Russian Federation, South Africa, the United States; the World Diamond Council (WDC) and organizations representing civil society (Global Witness and Partnership Africa Canada), and is chaired by the European Community. See Report to the Moscow Plenary Meeting of the Kimberley Process, <www.kimberleyprocess.com:8080/site/www_docs/working_groups4/monitoring_wg-report_to_plenary-final_as_sent_to_chair-11-_05.pdf>.

35 Kimberley Process Working Group on Monitoring, *Annual Report 2004 Consolidated*, 2006, p. 5, <www.kimberleyprocess.com:8080/site/?name=documents>.
36 Ibid., p. 6.
37 Kimberley Process Working Group on Monitoring, *Review KPCS: Response Working Group on Monitoring*, 2006, p. 16, <www.kimberleyprocess.com:8080/site/?name=documents>.
38 Ibid., p. 13.
39 Ibid., p. 14.
40 Ibid., p. 16.
41 The Landmine Monitor Report website is at <www.icbl.org/lm/>. For background and discussion about the activities of the Monitor, see Mary Wareham, "The Role of Landmine Monitor in Promoting and Monitoring Compliance with the 1997 Anti-Personnel Mine Ban Convention", in John Borrie and Vanessa Martin Randin (eds), *Disarmament as Humanitarian Action: From Perspective to Practice*, UNIDIR, 2006, pp. 79, 84–86.
42 For further information on the "unofficial" verification system under the Ottawa Convention, see Angela Woodward, "Verifying the Ottawa Convention", in Trevor Findlay and Oliver Meier (eds), *Verification Yearbook 2001*, VERTIC, 2001, pp 106–108.
43 Dieter Deiseroth, "Societal Verification: Wave of the Future?", in Trevor Findlay (ed.), *Verification Yearbook 2000*, VERTIC, 2000, p. 272.
44 Oliver Meier and Clare Tenner, "Non-governmental Monitoring of International Agreements", in Trevor Findlay and Oliver Meier (eds), *Verification Yearbook 2001*, VERTIC, 2001.
45 Landmine Monitor, *Landmine Monitor Report 2005*, Human Rights Watch, 2005.
46 This formulation is repeated in all editions of Landmine Monitor. See for example Landmine Monitor, *Landmine Monitor Report 1999*, Human Rights Watch, 1999, p. 1.
47 See <www.icbl.org/lm/research>.
48 See <www.icbl.org/content/download/20150/387933/file/res_guide_2002.pdf>.
49 Trevor Findlay, "Verification of the Ottawa Convention: Workable Hybrid or Fatal Compromise?", *Disarmament Forum*, vol. 1, no. 4, UNIDIR, 1999, p. 54.

50 See IANSA, *Gun violence: A Global Epidemic*, IANSA, factsheet, <http://www.iansa.org/documents/2006/Gun-violence-a-global-epidemic.pdf >.

51 UN Small Arms Review Conference website, <www.un.org/events/small arms 2006/faq.html>.

52 *Report of the United Nations Conference on the Illicit Trade in Small Arms and Light Weapons in All Its Aspects*, UN Document A/CONF.192/15, 9–20 July 2001.

53 Another major international agreement that should also be considered is UN General Assembly, *Protocol against the Illicit Manufacturing of and Trafficking in Firearms, Their Parts and Components and Ammunition, supplementing the Convention against Trans-national Organised Crime,* document A/RES/55/255, 31 May 2001.

54 See UN DDA pages recording "data and information provided by States on a voluntary basis, including national reports, on the implementation of the Programme of Action …", <http://disarmament2.un.org/cab/salw-nationalreports-2004.htm>.

55 For comprehensive and up-to-date review and analysis of progress towards implementation of the Programme of Action in the lead-up to the June 2006 Review Conference, see briefings produced by Biting the Bullet (editions 2003, 2005 and 2006), <www.international-alert.org/our_work/themes/biting_the_bullet.php#briefings>.

56 Elli Kytömäki and Valerie Yankey-Wayne, *Implementing the United Nations Programme of Action on Small Arms and Light Weapons: Analysis of the Reports Submitted by States*, UNIDIR, 2003; and Elli Kytömäki and Valerie Yankey-Wayne, *Five Years of Implementing the United Nations Programme of Action on Small Arms and Light Weapons: Regional Analysis of National Reports*, UNIDIR, 2006.

57 The International Action Network on Small Arms is the global movement against gun violence—a network of more than 700 civil society organizations active in 100 countries. Members work to reduce the proliferation and misuse of small arms and light weapons through advocacy and campaigning, research, information, awareness raising and victim support. See <www.iansa.org>.

58 Biting the Bullet, *Reviewing Action on Small Arms 2006: Assessing the First Five Years of the UN Programme of Action*, IANSA, 2006, p. 18, <www.international-alert.org/pdf/red_book_2006.pdf>.

59 Ibid., p. 21.

60 Ibid., p. 22.

61 For further details of current BWPP activities and reports, see <www.bwpp.org>.

62 Ibid.

63 Oliver Meier and Clare Tenner, "Non-governmental Monitoring of International Agreements", in Trevor Findlay and Oliver Meier (eds), *Verification Yearbook 2001*, VERTIC, 2001, pp. 206–227.

64 Interview with Alun Howard, Policy Officer, IANSA, 17 March 2006. This unevenness is often countered by research guides (such as the one published by Landmine Monitor) or through an extensive peer-review process.

65 Interview with Kimberley Process Certification Scheme personnel from Global Witness, 8 March 2006.

66 Richard Bruneau, *Unofficial Monitoring of Compliance with Arms Control Treaties: A Survey*, Canadian Centre for Treaty Compliance, Compliance Chronicles no. 2, 2006.

67 Such increased transparency- and substance-related changes to IGO working practices may have to be agreed or endorsed by the States Parties at a Review Conference or through some other mechanism of the treaty.

68 There are a number of examples of successful formal NGO participation in treaty implementation and verification procedures, particularly in the environmental sector, such as the 1973 *Convention on International Trade in Endangered Species* and the 1971 *Ramsar Convention on Wetlands*. See Oliver Meier and Clare Tenner, "Non-governmental Monitoring of International Agreements", in Trevor Findlay and Oliver Meier (eds), *Verification Yearbook 2001*, VERTIC, 2001.

ACRONYMS

ABM	agent-based modelling
APL-A	anti-personnel landmine alternative
APM	anti-personnel mine
ASEAN	Association of Southeast Asian Nations
BMS	Biennial Meetings of States
BtB	Biting the Bullet
BTWC	Biological and Toxin Weapons Convention
BWPP	Bio-weapons Prevention Project
CAS	complex adaptive system
CBW	chemical and biological weapons
CCW	Convention on Certain Conventional Weapons
CD	Conference on Disarmament
CTBT	Comprehensive Nuclear-Test-Ban Treaty
DDR	disarmament, demobilization and reintegration
DHA	Disarmament as Humanitarian Action
EADS	European Aeronautic Defence and Space Company
ECOWAS	Economic Community of West African States
ENDC	Eighteen Nation Disarmament Committee
ERW	explosive remnants of war
EU	European Union
GRULAC	Group of Latin America and Caribbean Countries
HNE	hydronuclear experiments
IANSA	International Action Network on Small Arms
ICBL	International Campaign to Ban Landmines
ICJ	International Court of Justice
ICRC	International Committee of the Red Cross
IGO	inter-governmental organization
IMS	Intelligent Munition System
INSI	International News Safety Institution
IQR	inter-quartile range
NATO	North Atlantic Treaty Organisation
NGO	non-governmental organization
NPT	Treaty on the Non-Proliferation of Nuclear Weapons
OECD	Organisation for Economic Co-operation and Development
OPCW	Organization for the Prohibition of Chemical Weapons

OSCE	Organization for Security and Co-operation in Europe
PAROS	prevention of an arms race in outer space
PoA	Programme of Action
P-5	China, France, Great Britain, Russia and the United States
QUNO	Quaker United Nations Office
SALW	small arms and light weapons
SIPRI	Stockholm International Peace Research Institute
TCB	transnational communitarian body
UN	United Nations
UNIDIR	United Nations Institute for Disarmament Research
UN DDA	United Nations Department for Disarmament Affairs
VERTIC	Verification Research, Training and Information Centre