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M.A. THESIS

**A CRITICAL APPRAISAL OF THE STRATEGIC STUDIES LITERATURE ON
NUCLEAR CRISIS STABILITY**

BY

© WILLIAM GEORGE

DECEMBER, 1987
DEPARTMENT OF POLITICAL SCIENCE
CARLETON UNIVERSITY

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"A CRITICAL APPRAISAL OF THE STRATEGIC STUDIES LITERATURE ON
NUCLEAR CRISIS STABILITY"

submitted by William George, B.Sc.
in partial fulfilment of the requirements for
the degree of Master of Arts

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April 21, 1988

ABSTRACT

This thesis is concerned with the concept of crisis stability. In particular, this study addresses Nuclear Crisis Stability, and the evolution of competing formulations of this concept contributed by different strategic analysts. As a result, two schools of thought are identified: a) the Technical and b) the Behavioural. Yet a close observation of each school's assumptions revealed that despite the differences between these two streams both adhere to a broader paradigm of conflict management.

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INTRODUCTION

This thesis is concerned with the concept of crisis stability. In particular this study addresses Nuclear Crisis Stability, and the evolution of competing formulations of this concept contributed by different nuclear strategists. The key questions are: How have these differing perspectives on Crisis Stability been formulated ?; Why is it that Crisis Stability has been given such uneven treatment by nuclear strategists ?; and, Can specific reasons be given for the lack of homogeneity in the treatment of the crisis stability concept ?

Two important concepts, Crisis stability and Strategic Stability have dominated strategic studies conceptualizations of both deterrence, and deterrence robustness. The fundamental difference between crisis stability and strategic stability lies in their assessment of the likely paths to armed conflict, and how to prevent this event from occurring. Strategic stability oriented research tends to argue that the likely sequence of events which might lead to nuclear war arises out of one state's weakness, and out of a consequent inability to deter aggression [Morgan, 1983: 42-46; Schelling, 1963: 207-229]. Contrarily, crisis stability research argues that the more likely path to war emerges out of politico-military crises which threaten a state's vital interests [Morgan, 1983: 33-42].

Of these two concepts, strategic stability appears to have dominated not only the field of strategic studies, but also American nuclear strategy.

Thus, the concept has provided guidance and justification for the appropriation and deployment of most American nuclear weapons systems; and, moreover, has oriented entire weapons procurement debates, such as that surrounding the MX missile decision [Freedman, 1981: 185]. The emphasis upon this concept in American policy, however, has not prevented politico-military crises from occurring. Moreover, it appears that it has not provided the anticipated levels of deterrence 'stability'. As noted in a now famous Robert Jervis article, "Deterrence Theory Revisited", a growing number of analysts have come to doubt the relevance of an approach to international affairs predicated on a theory of deterrence, whose logic is guided by the notion of strategic stability [Jervis, 1979]. Certain critics of deterrence have emphasized its limitations, especially in the context of international crises. As posited by Jervis, "deterrence is often apolitical in examining possible sequences of events, of moves and countermoves, without considering the context in which they may occur" [Jervis, 1979: 323]. Thus, this limitation of deterrence theory deprives decision-makers of any clear indication of an adversary's motives and interests during crisis events.

Out of this critique of deterrence theory have emerged alternative views of crisis stability. Many analysts have noted a deteriorating East-West diplomatic climate, and have observed the increasingly frequent use of cold war rhetoric by both superpowers [Blacker, 1987; McNamara, 1986: 127-132]. Both the Soviet Union and the United States appear to hold negative views of the other's foreign policy goals and 'worst case' analyses of each others intentions are dominant. [1]

Many analysts have been critical of the progress made on nuclear arms control since 1979. They also point out the probable demise of previous arms control regimes such as SALT II and the ABM treaty [Carnesale and Haass, 1987]. These events, in conjunction with an intensification of research and development programs aimed at perfecting strategic defenses, more lethal offensive weapons, and the adoption of nuclear war-fighting strategies as official declaratory postures, have led analysts to believe that the present East-West climate is more prone to a superpower confrontation than was the case before [Lebow, 1987 (a)]. This situation has heightened the salience of the nuclear crisis issue.

Thus, a growing number of analysts have shown interest for the concept of crisis stability, and of crisis management [Borawski, 1986; Lorell and Brown, 1986; Blechman, 1985; George, 1984 (a) and (b); Ury and Smoke, 1984; Lewis and Blacker, 1983]. Approaches to this subject, however, differ somewhat. Contrary to previous patterns, the present upsurge in the crisis literature appears to have taken several dimensions. Moreover, a technical discussion has been added to the literature [American Academy of Arts and Sciences, 1987; Blair, 1985]. The fact that new crisis research has taken on new dimensions does not prevent one from observing that the actual scope of the debate is quite limited, and falls mostly within the field of strategic studies.

The objective of this thesis is to conduct a review of the strategic studies literature in order to assess the competing interpretations of crisis

stability, and the policy implications which derive from the lack of homogeneity in the literature. How can these differing points be accounted for ? This research project will, therefore, compare and contrast a number of approaches. First and foremost, in the opening chapter, an attempt will be made to group strategic studies approaches into a small number of categories. In this chapter it will be argued that two broad approaches to crisis stability characterize the literature. Moreover, each approach's basic assumptions directly influence its attitude toward crisis stability. Chapters two and three will examine more closely each approach in an attempt to highlight their underlying assumptions. In chapter four, taking into account those assumptions identified, an attempt will be made to reconstruct each approach's theory of crisis management. This will hopefully contribute to a better understanding of, and provide an explanation for, the uneven and differential usage of the crisis stability concept. In a concluding chapter, similarities and differences in the literature will be highlighted. Finally, an assessment of the implications for policy of the different theories of crisis management will be made.

CHAPTER 1

IDENTIFYING IMPORTANT PIECES OF A COMPLEX PUZZLE: STRATEGIC ANALYSTS, DETERRENCE, AND CRISIS STABILITY

The study of international relations has given birth to a large and growing body of literature on international crises. Political Scientists have attempted, essentially through case studies, to devise rules and generalizations which would permit one to better comprehend crisis events. These analysts believe that a better understanding of crises can contribute to better decision-making in future crises [Snyder and Diesing, 1977: 3]. It appears as though theorists have mostly been concerned with the war and peace thresholds in international crises, and have essentially in the words of Leon Sigal, "busied themselves contemplating how to avert war" [Sigal, 1979: 568]. This tendency in the field of international relations, however, has had little if any impact in strategic studies.

One notes that few attempts have been made by strategists to study crisis phenomena. The notion of crisis stability has been only peripherally defined by these analysts. Moreover, in their quest to be policy relevant, strategists have distanced themselves from international relations analysts. Strategists have, therefore, been less preoccupied with averting war, than by devising methods and guidelines on the employment and manipulation of force in order to maximize one's interests during crisis events [Kahn, 1969; Brodie,

1965; Schelling, 1963].

One notes, however, an upsurge of literature pertaining to crisis stability and crisis management in recent years. These new studies have not been the creation of international relations analysts, but essentially of strategic analysts. This interest in crisis phenomena appears to have emerged from two vantage points. On the one hand, a group of analysts have become critical of the applicability of certain 'war-fighting' scenarios to deterrence theory. An on-going and severe debate in strategic studies has been unable to generate a consensus among these analysts on what constitutes stable deterrence [American Academy of Arts and Sciences, 1987]. On the other hand, some analysts have been attracted to the notion of crisis stability for pragmatic purposes, and have used this notion to support their opposition to certain policies of the Reagan administration. One notes for instance that crisis stability oriented arguments have been utilized to oppose the current U.S. administration's Strategic Defense Initiative [American Academy of Arts and Sciences, 1987: 83-84; Blair, 1985: 297-300].

Two separate factors seem to have generated this new interest in nuclear crises. First, it appears as though dissatisfied deterrence theorists are increasingly preoccupied with the widening gap between theory and policy [Sigal, 1979].—Deterrence theorists have for forty years attempted to devise models which would assist decision-makers in finding some use for nuclear weapons, short of actually using them. These theorists, however,

have noted a growing tendency in the policy community to favour methods and options which stipulate the actual use of nuclear weapons in order to maximize coercive power. This distress with current policy tendencies can be clearly noted in the words of Robert Jervis,

Recent American nuclear strategy, on the contrary, has tried to reassert the validity of prenuclear thinking. [...] current strategic arguments stress the importance of the ability to destroy various Soviet military targets, or to destroy as many such targets as the Russians can destroy in turn. But the crucial links between these capabilities and deterring a war (or ending one on acceptable terms if it should occur) are rarely spelled out. When they are, they can be seen to rest on assumptions that the mutual second-strike capability has invalidated [Jervis, 1984: 29].

Secondly, a growing number of analysts have become preoccupied with the issue of strategic force vulnerability. Through mathematical calculations and nuclear exchange scenarios they have attempted to highlight the dubious capacity of certain components of the triad to absorb a direct nuclear attack [Freedman, 1981: 175-189]. One specific group which may be labelled the C³I analysts (Command, Control, Communications, and Intelligence) have used to an even greater degree the notion of crisis stability [Carter, Steinbruner, and Zraket, 1987; Blair, 1985]. The growing feeling among these researchers is that the Command and Control system, as an organization, and as the fourth

component of the Triad, has been neglected [Blair, 1985: 1-13; 49; Steinbruner, 1981-82: 18]. They further argue that a valid evaluation of military capacity, and of the strategic balance cannot be conducted without an appreciation of the C³I system. Most studies which have attempted to examine, in one dimension or another, the capacity of strategic forces to withstand a direct nuclear attack have drawn somewhat pessimistic conclusions [Blair, 1985; Tsipis and Bunn, 1983; Steinbruner, 1981-82].

On the whole, these analysts have come to doubt the feasibility of executing a retaliatory strike after absorbing a direct first strike. If any retaliatory strike could be mounted, analysts quickly point that its execution could only be done in an uncoordinated fashion [Blair, 1985: 283]. Vulnerability analysts have noted that this situation has major repercussions on crisis stability. They have noted that under acute international tension, and in a specific situation where war appears unavoidable, striking first may appear to offer considerable advantages. This situation according to them may lower the nuclear threshold. As noted by Bruce Blair,

...the ability of Soviet forces to deliver a crippling blow to U.S. C³I systems long ago created strong incentives on both sides for launching a first strike or for launching a U.S. second strike on warning, incentives that have undermined crisis stability [Blair, 1985: 5].

Moreover,

...current technological conditions force a decision before the character of an enemy attack can be accurately assessed and heighten risks of inadvertent war [Blair, 1985: 240].

The end result is that the growing body of literature on crisis stability, and crisis management which has been generated by strategic analysts appears to be a reaction to changes in the strategic environment. Both groups of analysts have noted that certain factors make the mutuality of assured destruction more precarious and thus, undermine the elementary premises of stable deterrence [Cimbala, 1987; Garwin, 1979-80: 117-118].

Few if any reviews of the crisis stability, and crisis management literature have noted the two motivations mentioned above. Moreover, the reviews of the literature do not make any specific differentiation between the more international relations, and the more strategic studies oriented research. Yet, these reviews such as one published by Adam Garfinkle offer considerable insight into the crisis literature [Garfinkle, 1986].

In similar manner to Graham Allison [Allison, 1971], Garfinkle divides the crisis literature into three respective schools: a) the traditional; b) the organizational; and c) the cognitive. He quickly associates the traditional school with political realism. According to Garfinkle, traditionalists have essentially emphasized the uniqueness of each crisis event, and that any

observed regularities in crises can only generate soft generalizations. He also stresses that traditionalists treat the state as a singular actor which seeks to maximize its interests. Thus, traditionalists have essentially utilized a cost-benefit approach to crises [Garfinkle, 1986: 19]. The notions of power, and national interests are central to traditionally oriented studies.

The organizational school emerges, according to Garfinkle, out of the behaviouralist critique of realism [Garfinkle, 1986: 18]. It essentially focuses on domestic politics, and on the constraint it imposes on foreign policy making. Actors within this approach are not perceived to be unitary, rather the organizational school emphasizes that the decision-making process is composed of many actors which have diverging interests. Bureaucratic interests and power greatly undermine the traditionalist proposition of state rationality. Rather organizationalists perceive decisions to be an outgrowth of inter-bureaucracy bargaining.

The third approach to crises emphasizes the more individual dimension. The cognitive approach has attempted to evaluate the role of human perceptions, stress, and 'psychologic' on crisis behaviour [Garfinkle, 1986: 18]. Supporters of this approach have observed and highlighted human limitations which can seriously effect crisis decision-making. Garfinkle, finally observes a clear difference in methodology employed by each approach. He stresses the fact that traditionalists usually cite one specific case to illustrate their point. Analysts who favour organizational or cognitive

analyses will more likely use segments of many cases to support their argument [Garfinkle, 1986: 35-36].

Adam Garfinkle's literature division is somewhat routine and quite 'traditional', it offers few guidelines which permit one to make a division of the crisis literature within the field of strategic studies. A strict adherence to Garfinkle's divisional grid would most likely classify all strategic studies oriented work on crises as emanating from the traditional approach. Despite this shortcoming, Garfinkle's observations on methods does offer some insights which could assist in differentiating tendencies with strategic studies oriented research.

A more useful approach is offered in the recently published Hawks, Doves, and Owls: An Agenda for Avoiding Nuclear War. Editors Graham Allison, Albert Carnesale, and Joseph Nye [1985] have managed to approach the subject in a unique way. Rather than dividing the literature according to an abstract set of concepts, they have used an issue as a dividing and classification mark. In order to operationalize this classification, Allison et al. have asked the field a question: "What is the most likely path that will lead us (if it ever happens) to a nuclear war. ?" The editors noted that answers to this question can serve as a classification line of the literature. They have noted five recognized paths to nuclear war:

1. Accidental or unauthorized use;
2. Surprise Attack;

3. Preemption in crisis;
 4. Escalation of conventional war;
 5. Catalytic war
- [Allison, Carnesale, and Nye, 1985: 10].

The notion of crisis stability's role varies from path to path. Moreover, the utilization of crisis stability also varies considerably. For instance, proponents of the surprise attack path look at crisis stability in a much more quantitative manner. Crisis stability is thus defined in close relationship to the strategic balance. Similarly, proponents of the preemption in crisis path treat crisis stability as a more psychological concept, and emphasize the importance of measures and actions which reassures one's adversary that you will not attack.

Editors Allison et al. noted that two factors appear to explain the divergence of views on the likely paths to nuclear war. First, it was observed that general views on nuclear weapons and attitudes toward their revolutionary character significantly influence perceptions of how a nuclear war might occur. Moreover - and more generally, assumptions on the causes of war also appear to guide preferences for specific paths. Views on nuclear weapons, causes of war, and courses of events which might lead to nuclear war significantly shape policy recommendations. In the end, the editors essentially divide the field of strategic studies into three schools of thought: Hawks, Doves, and Owls, and as noted by the editors each school hold specific assumptions and policy recommendations.

...Hawks and Doves focus on deterrence of deliberate choices and often cite World War II, Owls are more impressed by World War I, the assassination at Sarajevo, the leader's misperception of the military situation, and the inadvertent escalation caused by interlocking mobilization plans. Owls believe that crises or conventional war could create an environment for unintended nuclear war [Allison, Carnesale, and Nye, 1985: 210].

Although a considerable amount of insight is offered through this text, its division of the literature does not permit one to clearly comprehend the different approaches to crisis stability. The traditional Hawks/Doves dichotomy with the innovative Owls category certainly presses the point that basic assumptions and world view significantly influence one's approach to the nuclear weapons and nuclear war issue. However, it would appear that strict adherence to this categorization of the literature in order to better comprehend crisis stability could offer few new insights.

It is highly likely that most analysts who have attributed importance to the crisis stability concept would fall under the Owls typology. Thus, Owls would become a residual category of analysts who are preoccupied with crisis stability. The fact that authors think about a subject does not mean that their approaches are identical. For instance, Paul Bracken and Bruce Blair have both given a considerable amount of attention to the Command and

Control issue [Blair, 1985; Bracken, 1983]. Yet, one could not argue that both analysts share identical assumptions or views toward the subject matter. Thus, a broader categorization is needed. This categorization of the literature should be sufficiently loose to permit demonstration of divergent views within a single category. [2]

Two tendencies appear to characterize the utilization of the concept of crisis stability. First, a group of analysts appears to favour a more technical approach to the subject matter. Another group appears to approach the subject in a more behavioural way, borrowing concepts from the disciplines of sociology, and psychology. This latter group combines both the organizational and cognitive approaches defined previously by Adam Garfinkle. [Garfinkle, 1986].

The technical approach to crisis stability appears to have emerged out of the vulnerability issue [Nacht, 1985: 55-81]. Moreover, this approach appears to be mainstream in strategic studies. Essentially, through 'bean-counting' techniques, analysts focus their attention on the strategic balance, and attempt to assess the stability of this balance in the most extreme of circumstances [Freedman, 1981: 177-181]. The object is to minimally assure that a sufficient amount of nuclear force would survive any direct attack in order to mount a credible retaliation; thus, depriving any potential aggressor of meaningful benefit. The interest in crisis stability stems from the inability of certain components of the strategic forces to

withstand a direct nuclear attack. Analysts have, therefore, sought to assess the implications of such vulnerabilities in moments of acute International tension [Snow, 1983: 35-82; Carter, 1987 (a) and (b): 555-640].

The upsurge of research and publications emphasizing the crisis dimension appears to be a reaction to the acknowledged weakness of the notion of assured second strike. Technicians have sought to enhance crisis stability by reducing the vulnerability of strategic forces. Through technological fixes, they have essentially attempted to revitalize the assured second strike concept. The end goal is likely to be an attempt to give renewed credence to the military balance approach to crisis stability. As noted by Bruce Blair,

The need to reexamine our assumptions is pressing. Strategic programs of unusual magnitude and consequence are being advocated under an extremely narrow definition of strategic capability [Blair, 1985: 3].

Thus, proponents of this school have advocated a broader definition of the strategic balance, and have added new dimensions to its calculation such as taking into account the vulnerability and performance of the command and control component of strategic forces.

The behavioural approach to crisis stability is even less homogeneous in its presentation than the technical approach. It appears as though most analysts who favour this approach are highly critical of the technical school [Jervis, 1979]. Their emergence as a school is to an extent a reaction to the technical school [Jervis, 1979: 301]. They have attempted to highlight the limits of technical approaches and have essentially emphasized the psychological dimension of crises. Witness Richard Ned Lebow's critical attitude toward technical oriented approaches,

Nuclear crisis management may be an oxymoron, but this does not mean that the behavior of leaders is irrelevant to what happens in crises-only that a narrow focus on the techniques and technology of crisis management is unlikely to result in significantly improved performance [Lebow, 1987 (a): 18-19].

Moreover,

How a political system performs in crisis is a function of personal, group, institutional, and cultural patterns and interactions that were established long before the onset of the crisis [Lebow, 1987 (a): 19].

Thus, as argued by Lebow, the behavioural approach to crisis stability does not only attempt to look at the behaviour of individuals in crises, but also at organizational and bureaucratic behaviours under conditions of stress. Furthermore, these observations are conducted in an interdisciplinary matter.

The interest in crisis stability lies in its uniquely psychological dimension [Lebow, 1981: 101-118]. Analysts of this approach have particularly highlighted the importance of perceptions in moments of acute international tension [Lebow, 1981: 148-228; Jervis, 1978; Jervis, 1976]. Quite generally, they have noted that crises can rapidly degenerate into war if environmental factors do not favour diplomatic approaches to the resolution of disputes.

Thus, central to this approach is the notion of reassurance. These analysts strongly argue that a crisis environment can only be stable if it does not generate the perception that much is to be gained by using armed force first. This vision of crisis stability is best summarized by Robert Jervis,

if either side came to believe that war was inevitable, deterrence could not work. That is, deterrence is premised on convincing the other side not only that awful things will happen if it takes prohibited actions, but also that they will not happen if it refrains. Thus we must pay more attention to convincing the Russians that, even in an extreme crisis, war is not inevitable [Jervis, 1984: 14].

Despite the fact that the respective proponents of this approach have emphasized the importance of different sociological and psychological phenomenon, they for the most part have been quite critical of the current policy trend. Although this school has proven to be quite popular in academic

circles, its impact on policy has been limited.

A third approach to the crisis stability subject is tentatively emerging. It cannot, however, be labelled a school as it is more a method, or instrument which is utilized by both the technical and behavioural approaches. If any specific name can be given to it then it could probably be referred to as the Scenarios approach.

The Scenarios approach is characterized by the use of either hypothetical situations or historical cases to support argument. Two of methods appear to have been given considerable use. On the one hand, simulations and games appear to have been the favorite method of proponents of the technical approach [Freedman, 1981: 182-189]. While on the other hand, historical case studies and more specifically historical analogies seems to be favoured by advocates of the behavioural approach [Levy, 1986; Snyder, 1984 (a) and (b); Van Evera, 1984].

Gaming methods have essentially taken two shapes. First, a tendency to employ game theory can be observed. The purpose in using this abstract game discussion is a belief that it can offer some insights on how individuals make choices under specific conditions. Other analysts have utilized these methods to observe the consequences of hypothetical nuclear war scenarios [Blair, Cohen, and Gottfried, 1986]. A fundamental premise of these simulations and games is that decision-makers or actors to these

hypothetical events calculate their judgment in a 'rational' manner. Rationality is conceptualized through a cost-benefit analysis, and thus presupposes that all individuals seek to maximize their interests while at the same time attempt to minimize costs [Quester, 1986: 27-58; Schelling, 1963: 15].

In a less systematic way behavioural oriented studies have tended to refer to history to support their arguments. Some analysts have simply utilized segments of history to support their cases, while others have attempted to test out more thoroughly certain hypotheses in order to devise some sort of historically based broad generalizations [Lebow, 1981; George and Smoke, 1974]. "The ultimate objective is to seek insight in past experiences in order to better prepare to face future similar situations. A danger does reside in using historical analogies in an ad hoc matter. Tendencies to highlight the historical outcomes that support one's argument are much higher than highlighting the event which contradicts one's assumptions.

Crisis stability has, therefore, not only been treated unevenly by strategic analysts, but also - and more importantly - differently. Proponents of the behavioural approach have more systematically treated crises as unique events. The designers of the Hawks, Doves, and Owls typology are quite preoccupied with accidental or unauthorized use of nuclear weapons, and with preemption in crisis, and then to a lesser extent with escalation of a

conventional war and with catalytic war. Surprise attack is not viewed by most of these analysts to be a likely path to the first nuclear war [Allison, Carnesale, and Nye, 1985: 222].

Proponents of the technical approach appear at first glance to be less preoccupied with crisis stability. This, however, is somewhat misleading. Rather than directly addressing this concept, technicians seem to have made their observations on crisis stability in a more ad hoc manner. They have sought to verify the importance of the surprise attack scenario. Moreover, they have attempted to show conceptually that robust force postures which deter surprise attacks will in all likelihood deter war arising from crises, and also aid in preventing crises from developing.

This thesis will posit that each school's approach to crisis stability is subsidiary to a broader approach towards crisis management; it will further, argue that both schools acknowledge the validity of Robert McNamara's famous words following the Cuban missile crisis that, "there's no longer any such thing as strategy, only crisis management". [3] However, both schools have very different theories of crisis management.

Thus, a clear exposition of each school's theory of crisis management is pivotal to understanding the treatment and importance which has been given to the concept of crisis stability. A better knowledge of each school's assumptions would most likely contribute to a clearer understanding of each

school's theory of crisis management. Therefore, an examination of each school, and of its inner debate can further comprehension of the crisis stability concept.

Such an examination may be performed through investigating the responses to a discrete number of questions. How does each approach perceive nuclear weapons ? For Instance, do they consider them to have revolutionized warfare ? What assessment is made by the assured destruction, assured counterforce second strike, and countervailing strategy approaches, of the likelihood of nuclear war ?, and if this nuclear war was to occur which sequence of events is thought by each approach to be the most salient ? Are the accidental nuclear war, inadvertent nuclear war, and deliberate surprise attack scenarios given serious and equal consideration by each approach ?

In an other dimension, can nuclear weapons provide decision-makers with coercive power to be utilized in the pursuit of political objectives ? Thus, what assessment is made of the concept of nuclear diplomacy ? Are proponents of each approach optimistic or pessimistic about the controllability of events once nuclear threats have been made ? Finally, if pre-war deterrence were to fail, what is the likelihood according to each approach that an intra-war deterrent system could be implemented ?

More broadly, is nuclear war controllable, and can the notions of escalation control and dominance be realistically operationalized ? These questions permit a better comprehension of each approach's view of the nuclear age which is essentially dominated by five factors: one's attitude toward nuclear weapons; one's assessment of their likely use; if one's fear of events which will lead to their use; one's view of the political use of nuclear weapons; and finally, one's assessment of his ability to use them in a discrete way.

Through this framework of questions, and subsequently through a set of clearly identified assumptions, each school's theory of crisis management will be formulated. The specificity of the theories should account for the different and uneven treatment which has been given to the concept of crisis stability in the literature. The following two chapters will attempt to identify each school's assumptions. Chapter four will bring together each school's assumptions and the respective crisis management theories. A fifth and concluding chapter will provide some explanations and insights into the use of the concept of crisis stability by strategic analysts.

CHAPTER 2

THE TECHNICAL APPROACH: DIVERGING VIEWS, BUT ONE CENTRAL THEME--THE BALANCE

The two most unique characteristics of the nuclear revolution: a) the possession of unprecedented destructive power, and b) the enhanced efficiency of delivery systems, present decision-makers with an unfortunate dilemma. The requirement of assuring political control during crises appears to run counter to those measures necessary for retaliation to be assured [Steinbruner, 1987: 535-538]. The post World War II debate on nuclear strategy has been highlighted by this dilemma. Technical thinking, however, has emphasized the retaliation component of the equation.

American policy-makers had their first taste of technically oriented research in 1951 when Albert Wohlstetter led a research unit at the RAND Corporation which was mandated to study the vulnerability of long range bombers to a surprise attack [Wohlstetter, 1959]. The central preoccupation of this study and of subsequent research was a fear that a surprise attack could destroy nuclear forces on the ground and foreclose the possibility of executing a retaliatory strike. This fear of surprise attack which was supported by historical experiences such as Pearl Harbor, considerably influenced Western strategic thinking. As noted by Lawrence Freedman:

In order to understand the development of post-war strategic thought it is necessary to recognize the deep-rooted nature of the belief in the inevitability of a massive surprise attack as the opening shot in any war. It was particularly strong in the US, because of the experience of Pearl Harbor, but was widely accepted in Europe [Freedman, 1981: 34].

In the 1960s and 1970s the fear of surprise attack generated a considerable number of vulnerability studies. These studies attempted to assess the survivability of strategic offensive weapons to a surprise attack. More specifically, Intercontinental Ballistic Missile vulnerability seemed to dominate the research agenda, and its impact on policy-making was considerable. By the early 1980s, however, several studies had demonstrated the limits of such an approach [Carter, 1987 (a) and (b); Blair, 1985; Ford, 1985; Brewer and Bracken, 1984; Jervis, 1984; Ball, 1981; Jervis, 1979-80; Steinbruner, 1978]. Nonetheless, the ICBM vulnerability issue dominated the MX missile procurement debate, and was also a central issue in the Scowcroft Commission report. [4]

The survivability assessments of strategic offensive forces, and the remedies for vulnerability have followed an evolutionary pattern. The prescribed requirements for assuring the survivability of the strategic triad vary considerably from analyst to analyst. It is within these specific requirements that technicians have defined crisis stability.

1. Defining Crisis Stability

Technicians have, for most of the Post War period, been preoccupied with finding means which lessen the likelihood of nuclear war. They have argued that the concept of deterrence offers the best and most efficient set of prescriptions for the prevention of nuclear war. Deterrence in its most basic form can be summarized as follows:

Simply put, deterrence means that state A seeks to prevent state B from doing Z by threatening B with unacceptable costs if it does Z
[Rosi, 1973: 96].

The concept of deterrence, therefore, posits a psychological relationship between the two states. In order for it to work, state B must comprehend state A's threat, and also, must find it sufficiently persuasive. Technicians generally share the view that military retaliation offers the best deterrent. Despite this consensus over assured retaliation, large disagreements have surfaced in the strategic technical community. Force levels, targeting plans and strategies to ensure the credibility of the assured retaliation threat, have greatly differed from analyst to analyst. [5] It is, therefore, important to note that the respective visions of assured retaliation have each influenced this school's approach to crisis stability. Within this framework, crisis stability is not a central concept. Rather, it is conditioned by the concept of deterrence and defined by the operationalization

that deterrence is given through weapons procurement and doctrines.

In its more basic and traditional form, crisis stability has been defined as a situation where both superpowers have no incentive to strike first in a crisis, and as noted by a RAND study the parameters of calculation for such approaches to stability are quantitative and uniquely relate to nuclear forces, their characteristics and their effectiveness [Parish, 1978: 3]. This approach to crisis stability does not, however, preclude the acceptance of the nuclear revolution. Within this framework it is posited that the motivation not to strike first in a crisis is generated by a clear recognition on behalf of both superpowers that any nuclear war would bring about total destruction, and as noted in a RAND Corporation Report:

Stability is defined as the existence of a relationship between the two competitors in which neither side can win the competition in the short or long run [Parish, 1978: 3].

Stability is, therefore, dependent on the destructiveness of nuclear weapons. The total destructiveness that would be brought about by their use essentially deters all parties from using them. Stability requires that all parties possess sufficient survivable nuclear forces which will provide them with an Assured Destruction capability which was defined as having the ability to:

Deter a deliberate nuclear attack upon the United States or its allies by maintaining at all times a clear and unmistakable ability to inflict an unacceptable degree of damage upon any aggressor or combination of aggressors-even after absorbing a surprise first strike [Enthoven and Smith, 1971: 174].

Within this framework the inevitability of destruction for the aggressor forecloses the possibility of rationally justifying the employment of nuclear weapons. The robustness of the nuclear balance, and the inability of both superpowers to undermine it; and therefore, rationally contemplate using nuclear weapons while avoiding destruction, acts as a guarantor of stability during crises.

This conceptualization of deterrence and view of crisis stability is posited by supporters of the strategy of Mutual Assured Destruction. Under the MAD vision crisis stability and peace-time stability were perceived as one entity. This singular entity is generally referred to as strategic stability. [6] It posits that a deterrent posture which is sufficiently robust to dissuade surprise attack at a general peace-time level, will also be efficient in averting war during political crises where vital interests are at stake. An engrained assumption of this approach is a view that a robust nuclear balance which assures retaliation would not only deter the employment of nuclear weapons during crises, but would also deter countries from precipitating crises. This crisis prevention assumption is supported by a view that both superpowers acknowledge that nuclear weapons have created

no-win situations in all armed confrontations, which in turn generates disincentives for precipitating crises [McCWire, 1986: 24].

Consequently, strategic stability seeks to structure an environment within which both superpowers are forced to cooperate. Both the Soviet Union and the United States have a mutual interest in avoiding the outbreak of nuclear war. Thus, the essential but underlying component is a strategy for what Lawrence Freedman has termed 'stable conflict' [Freedman, 1981: 191-195]. One notes, however, in this formulation a desire to minimize the likelihood of war, but also a justification for the existence of weapons of mass-destruction.

A second wave of analysts, to use a term coined by Robert Jervis, have not found the retaliatory threat in the assured destruction approach to be persuasive [Jervis, 1979]. Their critique of assured destruction is one that is predicated on the credibility of the threat. Contrary to first hand appearances, Limited Nuclear Employment scenarios are theoretical outgrowths of assured retaliation thinking. "War-fighting" strategies, as they have been termed, are justified theoretically according to two notions: those of second strike and deterrence robustness [Gray, 1984 (a): 26-27]. Limited nuclear employment policies were defended and supported because they were perceived to enhance the credibility of the second strike threat [Gray, 1984 (a): 49-50]. Questions were raised to the effect that the rationality which would deter decision-makers from using nuclear weapons in a first strike would also deter a decision-maker from fulfilling his second strike threat.

Thus, to deliver his second strike a leader had to suspend rationality. The dilemma is best illustrated by President Nixon's Foreign Policy report to Congress in February 1970,

Should a President, in the event of a nuclear attack, be left with the single option of ordering the mass destruction of enemy civilians, in the face of the certainty that it would be followed by the mass slaughter of Americans [Nixon, 1970: 54-55].

Consequently, it was argued that war-fighting strategies would further stability by bolstering the credibility of the assured second strike threat. By providing counter-military war plans to decision-makers, Limited Nuclear Options (LNO) would make the second strike threat credible. At the operational level, L.N.O.s would provide leaders with concrete employment options which, according to the war-fighting logic, would alleviate the self-deterrent characteristics inherent in the assured destruction theories.

Limited Nuclear Options would thus assure the execution of a second strike. In turn, because of this guaranteed assured retaliation that would bring to any initiator unacceptable damage, L.N.O.s would make the balance more robust. Moreover, this increase in robustness would decrease the incentive for any actor to challenge the balance. It was posited that the enhanced credibility of the retaliatory threat would, because of the guaranteed total destruction, increase crisis stability [Gray, 1984 (a): 56;

Kahn, 1984: 100-108].

A third wave of analysts attempted to take the counterforce second strike logic one step further, and once again highlighted the necessity of bolstering the credibility of the retaliatory threat. Analysts such as Colin Gray argued that deterrence and thus crisis stability could be made more robust by further enhancing the strategic forces' capabilities, which would assure them of prevailing in any level of conflict:

Unless one is willing to endorse the proposition that nuclear deterrence is all bluff, there can be no evading the requirement that the defense community has to design nuclear employment options that a reasonable political leader would not be self-deterred from ever executing, however reluctantly [Gray, 1984 (a): 26].

This approach, therefore, voiced loud skepticism of the assured destruction logic. Its purpose was to go beyond the first strike-second strike vision of nuclear war, and to seriously consider alternative postures which would maximize destruction on the opponent, while limiting one's own damage. In order to do so, one must appropriate and structure nuclear forces in such manner that, if nuclear war does occur, he would be in a position of military superiority after the completion of any number of exchanges [Gray, 1986: 171-193]. Further, these forces would also permit the decision-maker to execute militarily significant strikes at any level of conflict. What is sought after through this approach is to provide decision-makers with nuclear

forces and a nuclear strategy of superiority which clearly signals to the opponent that he is able to sustain and dominate any escalation in the conflict. The end objective of this approach is best summarized by Colin Gray.

One of the essential tasks of the American defense community is to help ensure that in moments of acute crisis the Soviet general staff cannot brief the Politburo with a plausible theory of military victory [Gray, 1984 (a): 25].

This approach to deterrence and crisis stability has been termed the countervailing strategy. It proposes the appropriation and maintenance of a nuclear triad which would permit American decision-makers to militarily prevail in any nuclear conflict and also to render efficacious intra-war deterrence, and compellence. The specificity of the approach which departs from the two previous ones mention above is clearly stated in an article written by Walter Slocombe,

...we must have a doctrine and plans for the use of our forces (if they are needed) that make clear to the Soviets the hard reality that, by any course leading to nuclear war and any course a nuclear [war] might take, they could never gain anything amounting to victory on any plausible definition of victory, or gain advantage that would outweigh the unacceptable price they would have to pay [Slocombe, 1984: 245].

As the assured destruction approach, and assured counterforce second strike approach sought to punish the adversary for initiating nuclear war, the countervailing approach seeks not only punish, but also to deny the opponent any possible gain from initiating nuclear war. Stretched to its extreme logic, the countervailing approach contains a prevailing dimension [Jervis, 1984: 65]. Its capacity to provide decision-makers with sufficient weapons, and credible war plans after a first, second, third or fourth nuclear exchange, could introduce intra-war deterrence which would force Soviet decision-makers to acknowledge that escalating the conflict could not bring about a better military situation [Gray, 1986: 189-190; Jervis, 1984: 64-72]. It is anticipated that the prevailing dimension, by making initiation of nuclear war a no-win situation, reinforces deterrence. Yet crisis stability is theoretically defined in the same manner under all three approaches. As noted by former U.S. Secretary of Defense, Harold Brown, who introduced the countervailing strategy:

Crisis stability means insuring that even in a prolonged and intense confrontation the Soviet Union would have no incentive to initiate an exchange, and also that we would feel ourselves under no pressure to do so. We achieve crisis stability by minimizing vulnerabilities in our own forces, by improving our ability to detect a Soviet attack (or preparations for an attack), and by enhancing our ability to respond appropriately to such a situation [Brown, 1980: 69].

The 'having no incentive to strike first' component constitutes the theoretically independent variable from approach to approach. Convincing his adversary that one is serious about a deterrent threat constitutes the dependent variable in the crisis stability equation. The variation from approach to approach in what is necessary to make a deterrent threat credible accounts for each approach's differences on the crisis stability issue.

A stable crisis environment, according to technicians, is therefore a situation in which deterrent threats are taken seriously. Each approach does not fundamentally view crisis stability differently. Rather, one can view the differences as levels of gradation of deterrent postures, and of necessitated requirements to formulate a credible deterrent threat. Each approach's vision of crisis stability is, therefore, unique in its prescriptions of what is required to bolster the credibility of the retaliatory threat. In the end, crisis stability is prisoner to an analyst's view of what constitutes credible deterrence.

One's definition of credible deterrence will prescribe one's views on the composition of strategic forces. The number of weapons, their characteristics such as accuracy, and survivability, and the efficiency of the Command, Control, Communications, and Intelligence system will be predicated on one's vision of what constitutes a credible deterrent posture. The technical requirements for strategic forces and the targeting complexity increases as one posits a more controlled, and militarily significant retaliatory threat [Cimbala, 1986 (b): 107-124; McNamara and Bethe, 1986:

122; Richelson, 1983: 125; 142-143]. It is at this level that the approaches differentiate themselves the most one from the other.

It is interesting to note, however, that under all three visions of deterrence, crisis stability is not accorded a priority status. Rather, it is as noted previously, combined with a broader view of stability which has been widely referred to as strategic stability. It is the posited hope under all three approaches that deterrence will be sufficiently robust to dissuade actions which will immediately precipitate a nuclear war, but also actions which would generate crisis events. Thus, by deterring surprise attack, one also deters nuclear war paths emerging from crises [Betts, 1981: 155].

In this regard all three approaches presume that decision-makers contemplate challenging an opponent within a rationally calculated cost-benefit equation. It, moreover, presupposes that any decision to go to war, and even nuclear war, would be the end result of a rational decision-making process. It is, furthermore, posited that the nuclear balance offers the single most important calculating factor which influences any rational decision to go to war [Betts, 1987: 2; 11-16]. Witness Harold Brown's endorsement of the over-riding importance of the nuclear balance in the war-peace decision-making process:

We cannot measure deterrence directly. We commonly look at a variety of static force measures, such as number of warheads and equivalent megatonnage, in comparing the

strategic forces of the United States and the Soviet Union. We also perform assessments of the capabilities of U.S. forces to achieve particular levels of damage against various numbers and classes of targets. Although not conclusive, such measures and assessments have a bearing on deterrence through their influence on perceptions of relative strengths [Brown, 1980: 123].

In this regard, the role of actor perceptions in interpreting the nuclear balance provides the bond between all approaches. To an extent, it permits the fusion of all three approaches under one school label which has been referred to as the technical approach to crisis stability. It is important to note, however, that each approach's assumptions, as their requirements for credible deterrence, differ, and in turn these assumptions combined with new developments in the strategic environment condition an approach's interest in crisis stability [Allison, Carnesale, and Nye: 1985: 208-211]. A closer and more thorough observation of each approach's assumptions is thus warranted.

2. Assumptions

For purposes of clarity, further references to the three approaches developed above will be made in the following manner. The first approach will be referred to as the strict assured destruction approach. The second approach will bear the name of the assured counterforce second strike approach. The term countervailing approach will be used to identify the third

approach.

As noted above, attitudes towards crisis stability are influenced by deterrence theory, and by the operationalization that is given to the theory through nuclear strategy. Each approach's assumptions about the nuclear age can, therefore, considerably influence and explains the emphasis given to crisis stability. Assumptions are difficult to measure. Consequently, a more involved analysis is necessary if the bases of the formulations are to be made more clear

2a) Perceptions of Nuclear Weapons

It took approximately twenty years for official U.S. declaratory nuclear policy to fully recognize the unique destructive capabilities of nuclear weapons. Civilians were relatively uninvolved in the formulation of operational plans up until the Second World War [Kaplan, 1983]. Politicians had the privilege of making the peace-war decision, but once that the decision had been made the conduct of warfare was considered to be a military establishment's jurisdiction. Infringement on this division of labour was rare. Nuclear weapons, however, challenged the traditional approach to warfare. They made army to army confrontation an obsolete vision of warfare, and as noted by Captain Basil Liddell Hart, brought an unprecedented dimension to war:

The flying bomb may well tear away the veil of illusion that has so long obscured the reality of

the change in warfare-from a fight to a process of destruction. Being palpably an 'inhuman' instrument, it creates the *feeling* -which counts more than a truth apprehended by reason-that war is no longer a matter of *fighting*. Thus its introduction on June 15, 1944, may come to be regarded as the start of a new era [Liddell Hart, 1946]. [7]

The military establishment, however, did not find the total war argument persuasive. Moreover, they sought to incorporate nuclear weapons into the pre-Hiroshima societal warfare strategy of strategic bombardment, which had proven unsuccessful throughout World War II [Freedman, 1981: 22-33]. American nuclear policy was, therefore, the product of a tension between a physical reality which made nuclear weapons truly a revolutionary weapon, and a bureaucratic bias which viewed the conduct of warfare in a pre-Hiroshima manner. The uniqueness of nuclear weapons was increasingly recognized in the United States as the Soviet nuclear threat was felt. Only a few academics with a sufficient amount of distance from bureaucratic battles were in a position to recognize the nuclear revolution, and its assured destruction consequences. Such an example of early assured destructionist language can be observed in the now famous words of Bernard Brodie:

Thus far the chief purpose of our military establishment has been to win wars. From now on its chief purpose must be to avert them. It can have almost no other useful purpose [Brodie, 1946: 76].

Brodie's reaction to the nuclear revolution was further observed by Fred Kaplan in his history of nuclear policy, The Wizards of Armageddon:

...Brodie picked up a copy of the *Times*. The banner headlines riveted his attention: "First Atomic Bomb Dropped on Japan; Missile is Equal to 20, 000 Tons of TNT; Truman Warns Foe of a 'Rain of Ruin.' His eyes moved quickly down the right-hand column of the page, scanning smaller headlines reading: "New Age Ushered," "Day of Atomic Energy Hailed by President, Revealing Weapon," Hiroshima is Target", " Impenetrable Cloud of Dust Hides City After Single Bomb Strike."

Brodie read just two paragraphs of the story that followed, looked up for a few seconds, turned to his wife and said, "Everything that I have written is obsolete" [Kaplan, 1983: 9-10].

It appears as though Brodie's and other early assured destructionists' views would reach the U.S. policy-making only through slow and painful experiences. U.S. policy-makers attempted to utilize nuclear weapons for coercive diplomatic purposes. The responses of adversaries were, however, often different from those anticipated. U.S. policy-makers reluctantly acknowledged that contemplating the use of nuclear weapons would not only be rationally unacceptable, but as the Korean war illustrated, would it be taken seriously if U.S. core values and immediate interests were not at stake. In the end, U.S. policy-makers would increasingly question the ability of nuclear weapons to deter aggression against all U.S. interests [Freedman,

1981: 75].

The movement toward recognition of the nuclear revolution was furthered with the introduction of the doctrine of Massive Retaliation in American declaratory nuclear strategy. However, the threat of Massive Retaliation was still essentially formulated to deter non-nuclear aggressions. Massive Retaliation did not recognize the mutual, but asymmetrical vulnerability of both superpowers to total nuclear destruction. Preeminently, U.S. quantitative and qualitative nuclear superiority was pivotal to American blindness to this physical reality [Betts, 1987: 144-147].

A full recognition in official U.S. declaratory nuclear strategy would only arrive with the tenure of Robert McNamara as Secretary of Defense in 1960, almost twenty years after Hiroshima. It was only then that the declaratory policy fully recognized the basic axioms of the nuclear age as noted by Lawrence Freedman, "the impossibility of defence; the hopeless vulnerability of the world's major cities; the attraction of a sudden attack; and the necessity of a capability for retaliation" [Freedman, 1981: 44].

The declaratory shift toward MAD was resisted operationally by officers who feared the strategy's negative impact upon weapons procurement and military planning. Targeting plans, however, which are the operational incarnation of declared strategy, did not throughout the nuclear age mirror declaratory policy. As observed by Desmond Ball, operational objectives even during the McNamara tenure went far beyond declared objectives, and

comprised notions such as damage limitation, which went far beyond assured destruction objectives [Ball, 1983: 14]. Thus, the policy of deterrence in an American context took two divergent shapes. On the one hand, it is a declaratory policy which is essentially comprised of stated intentions, and the *raison d'être* of strategic nuclear forces as viewed by the policy-makers. On the other hand, a deterrent military posture is a set of targets and military plans which are meant to further military objectives [Ball (b), 1986: 82-83].

The assured counterforce second strike approach can, therefore, be viewed as an attempt to bring closer together declared strategy and operational strategy. The approach essentially emerged out of a desire to minimize destruction if nuclear war was ever to occur, and was operationalized through the notion of damage limitation [Wieseltier, 1985: 840-844]. It was formulated under McNamara by one of his study groups, which was led by Lt-Col. Glenn Kent, and was defined as follows:

... "Damage Limitation", i.e. the capability to reduce the weight of the enemy attack by both offensive and defensive measures, and to provide a degree of protection for the population against the effects of nuclear detonations [McNamara, 1966: 43]. [8]

The approach recognizes that if nuclear weapons were ever used, societies could cease to exist in their present form. The approach is, therefore, characterized by a consistent tension between a recognition of the

nuclear revolution and pre-Hiroshima thinking which stipulates that no technology can ever make war an inoperable concept. Within this framework the assured destruction dimension of the declaratory policy recognizes the nuclear revolution. While, the 'damage limitation' dimension in the targeting plans attempts to wrestle with the ingrained belief that war is unavoidable.

The Schlesinger doctrine which was introduced in National Security Decision Memorandum (NSDM)-242 formally recognized the declaratory strategy concept of damage limitation. Although NSDM 242 called for the development of Limited Nuclear Options and served as a basis for the formulation of the first Nuclear Weapons Employment Policy (NUWEP), it still recognized the unique destructive power of nuclear weapons [Freedman, 1981: 375-382]. It stipulated that "...the fundamental mission of US nuclear forces is to deter nuclear war and plans for the employment of US nuclear forces should support this mission" [Anderson, 1980: C-7]. [9] The dilemma of the approach, therefore, lies in its recognition of the nuclear revolution, and of the destructiveness which it has brought about, and in its desire to conduct nuclear operations if deterrence ever fails. More specifically, the approach prescribes deterrence while it plans for its failure [David, 1987: 222-228; Wieseltier, 1985: 832-836].

Changes in the strategic environment, however, generated skepticism as to the viability of the assured second strike approach. Greater weapons' accuracy and an increasingly capable Soviet arsenal threaten the U.S. ability to execute coordinated limited nuclear strikes [Nacht, 1985: 55-81; Snow,

1983: 35-82]. More specifically, ICBM and C³I vulnerability seriously undermined the coordinated options approach to nuclear conflict. It was further posited that such vulnerability would also undermine deterrence. In order to compensate for such vulnerabilities, and to bolster deterrence, certain analysts advocated the necessity for the U.S. to acquire a nuclear force structure with the unprecedented ability to absorb a direct attack [Freedman, 1981: 387-392]. It was observed that the ultimate robustness of such a force would strengthen deterrence.

The introduction of the concepts of escalation control and dominance into American nuclear strategy posed an interesting equation. On the one hand, U.S. strategy would negate the theory of the nuclear revolution. Furthermore, it would plan to conduct nuclear war in a manner similar to conventional warfare, and re-introduce into military language the notions of winners and losers [David, 1987]. On the other hand, from the Soviet perspective, U.S. strategy would posit that superior destructive capability would permit U.S. policy-makers to wage and dominate a nuclear conflict at any level, and would deter and impose on the Soviets the nuclear revolution thesis [Jervis, 1984: 129-146].

In the end, U.S. nuclear strategy appears to have followed a three stage evolution which essentially matches the three stated approaches [Snow, 1983: 1-35]. All three approaches recognize in one way or another the revolutionary nature of nuclear weapons. Despite this overlap of recognition, major differences exist among the various approaches. Their respective

views on how nuclear weapons have revolutionized world affairs differ considerably [David, 1987: 12-28].

At an initial level, assured destruction theorists view the nuclear revolution as a global phenomena [David, 1987: 19]. Under this view, it is posited that no country is spared from the threat of nuclear destruction. Vulnerability is, therefore, a global reality [Keeny and Panofsky, 1980-81: 293]. At a second level, analysts of the assured second strike approach reluctantly accept the concept of a nuclear revolution. Despite this tacit recognition, proponents of this approach do not believe that the destructive capability of nuclear weapons can constitute singularly an adequate deterrent threat, and as noted previously, this approach's attitude toward nuclear phenomena is highlighted by a consistent tension between pre and post-Hiroshima thinking on warfare [Snow, 1981: 78-79]. At a third level, proponents of the countervailing strategy uphold a somewhat distorted view of each superpower's vulnerability to nuclear destruction. A desire to supply American decision-makers with a theoretical nuclear war waging/war winning capability negates the nuclear revolution theory, and essentially contributes to a conventionalization of American nuclear strategy [Jervis, 1984: 56-63]. But in a contradictory manner, this approach posits that only a clear position of American nuclear superiority could provide sufficient destructive capability to deter all potential Soviet aggression. The belief that a nuclear destruction threat constitutes adequate deterrence presupposes an acceptance of the nuclear revolution concept on the part of the Soviets.

2b) Assessment of the Likelihood of Nuclear War

It is interesting to note that each approach's perception of the destructive capability of nuclear weapons considerably influences its assessment of the likelihood of nuclear war. Analysts, therefore, transpose their vision of the nuclear age to decision-makers, and assume that decision-maker's thought processes function within that analytical framework [Snow, 1981: 42].

Assured destruction theorists tend to be optimistic, and view the outbreak of nuclear war to be extremely unlikely. The essential rationale behind this belief lies in this approach's view that all decision-makers clearly understand the physical consequences which nuclear weapons have imposed on warfare. Proponents of this approach, therefore, posit that the destructive capability of nuclear weapons self-deters all decision-makers from using them. This approach's emphasis of the truly unique destructive capabilities of nuclear weapons can be observed in Spurgeon Keeny and Wolfgang Panofsky's critique of war-fighting strategies.

The NUTS [Nuclear Utilization Target Selection] approach to nuclear war-fighting will not eliminate the essential MAD character of nuclear war for two basic reasons, which are rooted in the nature of nuclear weapons and the practical limits of technology. First, the destructive power of nuclear weapons, individually and most certainly in the large number discussed for even specialized application, is so great that the collateral effects

on persons and property would be enormous and, in scenarios which are seriously discussed, would be hard to distinguish from the onset of general nuclear war. [...] Finally, there does not appear to be any prospect for the foreseeable future that technology will provide a secure shield behind which the citizens of the two superpowers can safely observe the course of a limited nuclear war on other people's territory [Keeny and Panofsky, 1980-81: 290-291].

From this perspective, therefore, nuclear war is posited to be unlikely given an ingrained belief that some sort of 'existential deterrence' prevails, and provides an adequate threat of total destruction to dissuade any decision-maker from contemplating any form of employment of nuclear weaponry.

Within this framework, crisis events are not treated in a unique manner. Assured destructionist theorists observe that a clear recognition by both superpowers of the reality of Mutual Assured Destruction forces decision-makers to be essentially risk averse, even when core values are at stake. Hence, the threat of total destruction imposes a decision-making environment upon both superpowers where rationality prevails, and provides a climate of restraint [The Harvard Nuclear Study Group, 1983: 250; Snow, 1981: 40].

Similarly, analysts who are preoccupied with guaranteeing a second strike are generally optimistic, and perceive the likelihood of nuclear war to

be remote. This optimism is essentially due to a shared view with the assured destructionist theorists that the threat of total destruction dissuades usage of nuclear weapons. More specifically, the guaranteed nature of the threat which is posited by this approach is said to prevent any contemplation of initiating a nuclear attack.

Under this view, the likelihood of nuclear war is judged to be remote, not because of a recognition by both superpowers that any employment of nuclear weapons will bring about world destruction, but because nuclear initiation will bring about a counterforce response. This nuance differentiates proponents of the guaranteed second strike approach from assured destructionist theorists. The specificity of the guaranteed counterforce second strike approach can be clearly understood through Donald Snow, as he observed that under this approach, "deterrence is best served by denying the enemy a specific objective rather than punishing the enemy indiscriminately" [Snow, 1981: 71].

Theorists of the countervailing strategy, just as proponents of the two other approaches, do not argue that nuclear war is imminent. The rationale which sustains this view is unique, however. A general belief is held that decision-makers approach the decision of employing nuclear weapons according to a purely cost-benefit calculus. Therefore, a cost-benefit approach to the nuclear question sustains that rational behaviour could justify employment of nuclear weapons, if such employment could lead to some form of calculable gain. Within this framework, nuclear war is unlikely

only in a situation where one superpower possesses the capability to deny, at any level of conflict, its adversary's ability to rationally calculate that it can gain a meaningful advantage by initiating the use of nuclear weapons.

Under this view, crises and crisis stability take on a particular dimension. It is acknowledged that the decision-making pay-off structure under conditions of crises alters from the general peace-time structure [Gray, 1984 (a): 55]. Perceptions of threats to core values, and the belief that war is imminent can, therefore, provide a rationale for nuclear initiation. A desire to re-introduce a peace-time decision-making pay-off structure into crisis decision-making is favoured. It is, therefore, argued that countervailing strategies re-introduce peace-time rationality into the crisis decision-making process, because of the ability of such strategies to consistently deny adversaries not only any calculable gains from the usage of nuclear weapons, but also to deny the possibility of adversaries using nuclear threats for coercive diplomatic purposes [Jervis, 1984: 69].

2c) Assessment of the Most Likely Paths to Nuclear War

This assumption is of particular importance, and it is central to the Hawks, Doves, and Owls, study. The authors have noted that one's view of those events which are the most likely to lead into nuclear war, not only considerably influences one's attitude toward crisis stability, but more generally shapes completely one's prescriptions for reducing the risk of nuclear war. The technical approach's endorsement of deterrence as a method

of avoiding nuclear war, therefore, posits a general belief that the occurrence of any form of nuclear employment would be the result of a rational decision-making process. Despite the fact that technicians generally recognize the possible interjection of misperceptions in the decision-making process, they generally foresee any employment of nuclear weapons to be the product of intentional actions. This attitude within the technical approach towards the initiation of war can be observed in the work of Graham Allison when he differentiates Hawks from Doves:

Both Hawk and Dove share a common set of assumptions about the logic of the process by which war might come. [...] each sees war as starting deliberately. Both assume that national leaders with accurate information carefully calculate risks, costs, and benefits and control the actions of their governments [Allison, Carnesale, and Nye, 1985: 210].

This commonality of view does not, however, preclude the existence of certain important differences between the approaches. Of particular interest is each approach's discussion of the role and the place of crises in the sequence of events which would most likely lead to nuclear war. Assured destruction theorists do not view crises as discrete events. Rather, crises are considered to be a part of a larger process of tension building. The fundamental source of tension being generated by uncontrolled arms races, which fuel deep feelings of insecurity especially in situations of crisis, when core values are at stake. This general fear of arms races, and of their

potentially catalytic role can be observed in Robert McNamara's most recent testimony:

Because we lack a long-run plan for the nuclear age, the number of weapons continues to multiply. And now we appear on the verge of escalation of the arms race that will not only place weapons in space, but will seriously increase the risk that one or the other of the adversaries will be tempted in a period of tension to initiate a preemptive nuclear strike before the opponent can get the first blow [McNamara, 1986: 6].

Within the assured destruction logic, therefore, crises are perceived to be part of an escalatory tension building process. They are not, however, an end in themselves, and are generally perceived to be a consequence, as nuclear war, of a wider tension building process. Assured destructionist logic is analogous to the dove logic and argues as a general rule that:

...the primary cause of war lies in arms races that become provocative and thus undermine deterrence. [Moreover] Doves worry about arms in themselves and the irresistible momentum of military preparations both because of the psychology or arms races prevents conciliation and because threats that are intended to deter may instead provoke [Allison, Carnesale, and Nye, 1985: 209].

The balance of forces, and the perceptions which it might generate, is

of extreme importance. It is further posited that the structure of the balance has, in most crises, a determinate role in shaping the actions of the various parties to the events. In the end, the fundamental cause of war is a provocative force posture which generates feelings of insecurity within which a rationale for preemptive war can be sustained.

At the other end of the spectrym, the countervailing strategy approach perceives one sided weakness to be the most important path to war [Jervis, 1984: 66]. It is posited that weak military postures generally invite war by tempting aggressive adversaries who feel a need to exploit militarily any perceived advantage. This view closely corresponds to the description of Hawks in Hawks, Doves, and Owls. The peculiarity of Hawk fears is best summarized in the following manner:

...Hawks worry that deterrence may fail if a potential aggressor calculates an opponent's weakness and has an opportunity to take advantage of it [Allison, Carnesale, and Nye, 1985: 212].

Yet both the countervailing and the assured destruction approaches view surprise attack scenarios as the most important threat to peace, and believe that the requirements necessary to deter such a scenario's occurrence constitutes an adequate posture for the deterrence of any other potential threat to peace [David, 1987: 22; Freedman, 1981: 159; 349]. Thus, the differentiation between both poles lies in each approach's analysis of the motivations which push countries to initiate surprise attacks. Consequently,

and as noted by Hawks, Doves, and Owls, the prescriptions given by each pole differ significantly:

Their [Hawks] policy remedy is to enhance the threat of retaliation by building military strength. Doves worry that deterrence may fail by slipping into provocation. Since additional threats may create a sense of inevitable war, the best remedy is conciliation and reassurance [Allison, Carnesale, and Nye, 1985: 212].

In both cases, and in the case of the guaranteed second strike approach, perceptions of the military balance are essentially responsible for the maintenance of peace [Snow, 1981: 41-42]. Guaranteed second strike theorists, however, offer some sort of perceptual middle ground. While they fear the consequences of weakness, they believe that strong attempts at acquiring nuclear superiority to be extremely provocative. This dual perspective toward perceptions can be readily observed in John Borawski's most recent discussion of Confidence-Building Measures and the role that these measures can play in down-playing misperceptions.

It is also imperative that military factors do not force the pace of crisis, that measures at hand to avoid, contain, and de-escalate crises and the risks of escalation, that if war begins inadvertently it can be terminated at the earliest possible moment, and that if attack is deliberately intended, then at least an aggressor's task will be complicated and the advantage of strategic and tactical surprise denied [Borawski, 1986: 10].

The guaranteed second strike approach's consciousness of the perceptual dimension of the military balance extends to a fear that Soviet and American strategic planners might utilize different threat assessment methods [Snow, 1981: 155-160]. As a result, advocates of this approach recognize the possibility that an ostensibly benign posture may be perceived by an adversary, because of his assessment criteria, to be extremely bellicose. New and unorthodox threat assessment methods which differ from traditional 'bean-counting' have been highlighted by this focus [Ball, 1981: 41].

The recently assessed vulnerability of the Command, Control, Communication, and Intelligence system adds to, and even contradicts traditional threat assessments. Proponents of this approach fear that certain counter-C³I attack scenarios might, under circumstances where war is perceived to be unavoidable, provide a rationale for first use of nuclear weapons [Blair, 1985: 285; Betts, 1981: 155]. As noted in Bruce Blair's acclaimed book, new methods for assessing the threat can give rise to perceived new vulnerabilities, and this despite the fact that it is probable, as in the C³I case, that the newly assessed vulnerability has been simply and consistently overlooked by past threat assessment methods [Blair, 1985: 5-6; 281].

It is important to note this approach's emphasis on the need to better comprehend the realities of nuclear war. Guaranteed second strike analysts appear to constantly review the threat assessment process. The purpose of doing so is a fear that at some point a newly perceived threat or vulnerability could lead the superpowers to some sort of nuclear stand-off, where traditional deterrence threats would be ineffective. John Steinbruner's critical assessment of how command and control vulnerability affects established principals of stability illustrates this point. As noted by Steinbruner:

The abstract concepts used to organize a coherent defense policy are far removed from the underlying realities. [And more specifically in the case of C³I vulnerability] ...that the issues of a decade past [which according to Steinbruner overlook Command vulnerability] are being pursued at the expense of more serious problems, and that world stability and national security are being unintentionally damaged [Steinbruner, 1978: 412-413].

The guaranteed second strike approach, therefore, also argues that arms races are the most likely source for a future nuclear conflict. The specificity of the approach resides in its distinct interest in the perceptual dynamics generated by the military balance. Crises within this view do not hold a unique status other than being a state of events which are likely to reinforce certain misperceptions [Sabin, 1987; Jervis, 1984: 68].

To conclude, all three approaches posit clear intentionality in the war/peace decisional framework. Yet all three approaches acknowledge the possibility that sequences of events which lead to decisions are the product of an inadvertent process. Thus, under this general view crises are not the causes of wars, but rather part of a process which leads to war. Also of interest is the prevailing attitude of all three approaches toward the accidental nuclear war scenario. Advocates of all three approaches are confident in the ability of the current system of negative control of nuclear forces to prevent unauthorized or accidental use of nuclear weapons [Allison, Carnesale, and Nye, 1985: 208-222].

All approaches, but most specifically the guaranteed second strike and countervailing approaches, view limited conflict and conventional wars as likely to lead into nuclear wars. Deterrence, therefore, must be sufficiently robust to deter not only nuclear wars but also, offer a threat of retribution which will also reduce more limited aggression. The term spectrum deterrence becomes salient, and posits a deterrent posture capable of dissuading all types of threat, including those which occur under conditions of international crisis [Jervis, 1984: 67].

2d) Assessment of The Political Use of Nuclear Weapons

The purpose of nuclear weapons, and their political utility, has been debated, and has deeply divided the strategic studies community. Technicians of nuclear strategy have not been spared from this debate, and have

essentially directed their observations at the political utility of the nuclear balance [Sabin, 1987: 37-47; Betts, 1987]. Technicians have debated to the role that nuclear weapons and the nuclear balance have played in prior crises.

It appears as though each approach's position toward this issue is intrinsically linked to its general perception of nuclear weapons, and of the nuclear revolution. Moreover, the various positions are dictated by each approach's views on how a compound set of aggregates which form the nuclear balance can be utilized to increase one's coercive potential. It is, therefore, interesting to note that each approach's political valuation of nuclear weapons implies an attitude toward the manipulation of risk, and specifically the risk of war [Betts, 1986-87: 3-5; Jervis, 1984: 145-146].

Assured destruction analysts hold, one could argue, a minimalist position on this issue. Under this view, nuclear weapons and the nuclear balance serve only a deterrent function, and attempting to utilize them for any other purpose is posited to be extremely dangerous. The argument is best summarized by the words of Robert McNamara:

...nuclear weapons serve no military purpose whatsoever. They are totally useless-except to deter one's opponent from using them
[McNamara, 1983: 79].

This view within the assured destruction approach is furthered by a prevailing attitude which perceives the nuclear balance to be the end result

of a number of off-setting technological asymmetries. The rapid pace at which technological change occurs does not permit, according to the assured destruction logic, one side to acquire any type of ultimate weapon which would give to it some sort of special compellence capability. This vision of a constantly re-balancing technological system is best observed in a recent publication of the Canadian Institute for International Peace and Security,

...offsetting asymmetries contribute to a sense of stability; both sides are confident in their ability to retaliate and thus deter an attack. While improved counterforce capabilities (for example, the Trident D-5), may undermine this sense of confidence for a time, past experiences has shown that short-term technological gains have not, in the long run, led to a decisive edge for one side or the other [Boulden, 1987: 7].

The political purpose of nuclear weapons within this framework cannot conceivably be anything other than the deterrence of an all-out attack. Short of providing retaliation to a first strike against one's homeland, nuclear weapons are inappropriate [Martin, 1980: 11-12; 18-19]. Counterforce guaranteed second strike analysts, have contested this view, and have attempted to illustrate how nuclear weapons have played important roles in prior superpower crises.

Under this second view, counterforce targeting is perceived as not only being a method of bolstering the credibility of a deterrent threat, and as a

method which makes the execution of a retaliatory strike a rational option, but also as a way of deterring lower level conflicts. Guaranteed second strike analysts believe that the nuclear balance, and the nuclear posture of one country, significantly affect the image which a non-nuclear state might have of that country [Snow, 1981: 37-38]. Thus, a credible deterrent threat which is combined with a force posture which can seriously assist a decision-maker in contemplating the use of nuclear weapons (accurate delivery weapons, low yield weapons, and a highly maneuverable force which permits one to threaten any point in the world) can considerably augment a nuclear power's coercive capability, even in a non-nuclear conflictual environment. As noted by Barry Blechman and Douglas Hart, nuclear weapons can also play an important role in regulating the superpower global-political competition [Blechman and Hart, 1984: 292-293]. The political utility of nuclear weapons is found not in the actual threat of commencing a nuclear war, but in the resolve one shows over a specific issue - the utilization of a nuclear threat. As Blechman and Hart argue,

...the effectiveness of nuclear threats may not be influenced by the aggregate strategic balance. The threat is not so much to go deliberately to nuclear war as it is to participate and persevere in an escalatory process, even though it might result in nuclear war [Blechman and Hart, 1984: 294].

The guaranteed second strike approach does not argue, however, for an aggressive foreign and defence policy. The attitude toward resolve generally stems from a fear that certain technical vulnerabilities, and force

asymmetries might give a perception of weakness which could encourage challenges to one's vital interests.

Countervailing strategists hold a somewhat more aggressive attitude toward this issue, and argue for a more active role for nuclear weapons in order to prevent the re-occurrence of the American military decline which characterized the 1970s. These analysts argue for a considerable coercive diplomatic role for the nuclear balance, and further argue that a clear position of nuclear superiority will not only deter non-nuclear challenges, but will also permit one to challenge an adversary when one deems it necessary. Weakness, under this view, encourages Soviet interventionism, and it "has been the claim that adverse consequences might flow if the Soviet Union appeared to be gaining the lead in the nuclear competition" [Sabin, 1987: 4]. More specifically:

Such a perception, it has been argued, not only might encourage Soviet adventurism in the Third World but also might prompt allied and non-aligned nations to accommodate themselves to the shifting tide [Sabin, 1987: 4].

Contrary to some well argued hypotheses, proponents of this approach would sustain that the superior nuclear posture of the United States in the 1940s, 1950s, and 1960s permitted it to dominate world politics, and also to dictate the conditions in most crises. This attitude has been clearly identified in Richard Betts' recent critical review of the posited golden age of American nuclear superiority:

Thus U. S. nuclear superiority in the balance of forces was clearly still overwhelming and Moscow certainly had no meaningful first-strike option. [during missile gap] Many then (and today) saw this as grounds for the credibility of nuclear leverage [Betts, 1986-87: 17].

Under this view, American nuclear forces play more than an assured destruction role. A compellence capability is clearly sought after, and a favourable nuclear balance's a good indicator of American resolve [Betts, 1987: 14-16].

Fear of unauthorized or accidental nuclear war influences one's assessment of the political utility of nuclear weapons, however. The increasing accuracy of delivery vehicles, and the miniaturization of warheads increases the salience of new limited, and counterforce war plans such as those prescribed in PD-59 and NSDD-13. It has been observed, that this growing capability to conduct discrete and limited nuclear attack has been combined with a Launch-On-Warning posture. As a result, some analysts fear the utilization of nuclear alerts for diplomatic purposes as these may be more difficult to control, and thus, emphasize the need for more elaborate negative controls on nuclear forces [Steinbruner, 1987: 553-554].

As a result, each approach assesses differently the risks involved in the conduct of nuclear diplomacy. Proponents of the countervailing strategy

are generally quite confident about the Command and Control system's ability to negate any type of unauthorized use of nuclear weapons. Supporters of Mutual Assured Destruction, however, while generally optimistic about the C³I capabilities to direct peace-time nuclear activities, fear the metamorphosis which this system could undergo during acute crisis conditions. In this regard, Robert McNamara's recent observations appropriately highlight the present lack of confidence among MAD supporters of the system's ability to properly control and conduct nuclear diplomacy in moments of acute tension:

War is possible through misperception, misinformation, and miscalculation. If deterrence fails and conflict develops, NATO's first-use stance and stated strategy carry with them a high risk that Western civilization, as we know it, will be destroyed [McNamara, 1986: 36].

One could argue then, that the assessment of the political utility of nuclear weapons resides in each one's attitude toward risk, and its manipulation. As a result, confidence in the Command and Control system, and the ability of this system to properly execute political orders varies from analyst to analyst. In this regard, the uniqueness of the crisis environment diminishes as confidence in the C³I system increases. Finally, a similar relationship can be observed as confidence with the Command and Control system appears to generate comfort with the concept of risk, and of its manipulation to further political objectives.

2e) Assessment of The Controllability of Nuclear War

Throughout the 1970s, strategic analysts prescribed the merits of flexible nuclear war plans. Theoretical justifications based on a complex formulation of deterrence theory were given for these limited counterforce war scenarios. Effective execution of these new war plans was, however, scarcely studied. Controllability of nuclear exchanges was merely assumed. By the mid-1970s targeting studies in the open literature highlighted the many vulnerabilities of strategic forces to nuclear attack. The ability to execute discrete and limited nuclear exchanges was thus placed in doubt [Carter, 1987 (a): 605-610; Bracken, 1983; Ball, 1981: 35-38].

An appreciation for technological solutions acts as a dividing line between analysts on the controllability of nuclear war question. Some analysts firmly believe that the enhanced accuracy of nuclear delivery systems, and the miniaturization of warheads which increase the Counter-Military Potential (CMP) of weapons, provide decision-makers with authentic and flexible nuclear employment scenarios [Vick, 1985: 114-117; Snow, 1983: 36]. Recent research on the vulnerability of command and control structures to nuclear detonations, if accurate, render flexible nuclear employment scenarios inoperable [Kincade, 1987: 297-311; Blair, 1985; Nacht, 1985: 198; Ball, 1981: 36].

Technically oriented studies do not argue a consistent thesis on this issue. Supporters of Mutual Assured Destruction resist and reject the

validity of any limited nuclear employment arguments. Such a view is based on a nuclear nuclear employment taboo, and a general fear of crossing the nuclear threshold. In this regard, nuclear employment is perceived to be an ultimate decision, which is to be considered only under extreme conditions when the use of nuclear weapons by one's adversary is imminent. Consequently, within the MAD perspective, technological changes cannot alter the MAD condition which is imposed by the sheer existence of nuclear weapons. Moreover, MAD supporters generally fear that nuclear employment scenarios, and increased confidence in them generate a mind set which encourages policy-makers to take bold and reckless steps in crises that can ultimately lead to unintended war [Jervis, 1984: 163; Van Evera, 1984: 106-107; Snow, 1983: 156; Ball, 1981: 37].

Proponents of MAD view the escalation process to nuclear war as a two step ladder. The ladder's division essentially emphasizes a non-nuclear environment in which conventional conflict can persist, and a nuclear environment which emerges immediately upon the employment of a single nuclear warhead. As noted by Desmond Ball:

...the technical and strategic uncertainties are such that, regardless of the care and tight control which might they attempt to exercise, decision-makers could never be confident that escalation could be controlled. Uncertainties in weapons effects and the accuracy with which weapons can be delivered mean that collateral casualties can never be calculated precisely and that particular strikes could look much less

In this regard, the resolve demonstrated in a counterforce second strike posture, despite operational uncertainties, adds to the credibility of the threat '[Scowcroft, 1986: 9].

Consequently, under this view intent is more important than immediate capabilities. Supporters of the guaranteed counterforce second strike scenario generally believe that technological changes and innovation will increasingly permit the conduct of controlled nuclear exchanges [Steinbruner, 1984]. Present shortcomings such as ground based missile vulnerability or command and control vulnerabilities are remedied via pragmatic proposals such as Launch-On-Warning, mobile missile basing, and small mobile ICBMs. The quick technological fix approach to the vulnerability issue can be clearly observed in Richard Garwin's advocacy of Launch-On-Warning. Witness Garwin's emphasis upon the need to structure nuclear forces in such a manner as to guarantee, without any exception, retaliation to a hypothetical Soviet attack,

The purpose of launch under attack or launch on impact is to deter attack on the ICBM force, not actually to save the ICBMs from destruction if they are in fact attacked; but these capabilities can deter attack only if they are in fact capable of saving the ICBM force by allowing it to be launched before it is destroyed. Launch under attack thus shares such properties with deterrence in general, the purpose of which is not in fact to destroy the Soviet Union, but to avoid destruction of the United States by having an assured capability to destroy the Soviet Union. [Garwin, 1979-80: 118].

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Under this view, controllability of nuclear war is not assumed, but desired. The fragility and vulnerability of the Command and Control system are openly recognized, and regarded as the most important limitation on nuclear strategy. Contrary to the MAD view, however, proponents of the guaranteed counterforce second strike scenario do not see the strategic environment in a static manner. Such analysts generally hope and suggest that technological innovations, and thus, modernization of the present command and control apparatus, will reduce recently identified limitations [Scowcroft, 1986: 17].

Bruce Blair, the man who has most thoroughly researched the command and control question, has also adopted this technological approach. While recognizing the existing physical limitations on the command and control system, Blair suggests that current natural science research offers optimistic signs that one day the command and control system will be capable of absorbing a full and direct attack, and subsequently, assess, coordinate, and direct an appropriate retaliatory response. Political solutions such as arms control treaties are not considered by this author to be viable long terms solutions. As a result, limited arms control measures are proposed by Blair, but only as immediate fixes which would attempt to rectify potentially destabilizing technological trends. Consequently, Blair posits that "by channeling more resources into C³I programs, the proposed doctrine [no immediate second use] would build confidence in the ability of the United

States to exercise a minimum essential degree of positive control under a wide range of adverse conditions while blocking the most plausible route to Soviet victory in a nuclear war" [Blair, 1985: 295].

Consequently, proponents of the guaranteed counterforce second strike scenario do not argue that all physical factors which place in doubt the execution of limited nuclear operations will be eliminated. They, however, hope that present and future command and control modernization will bring the safe use of nuclear alerts under peaceful, yet tense conditions. Under these conditions, political control of nuclear forces is optimistically assessed, as noted again by a recent Bruce Blair text,

Past crises demonstrate, however, that national officials can set a general political construction on the course of events and can thereby greatly influence the pattern of military operations if they cannot bend it to their will [Blair, 1987: 118-119].

In the end, proponents of guaranteed second strike scenarios, while acknowledging MAD physical realities, refuse to adopt a defeatist attitude. Moreover, their position is considerably influenced by a view that nuclear forces, and their command, and control structure's utility go beyond the simple use or non-use decision. A generally optimistic view on the controllability of nuclear forces under crisis conditions thus characterizes this approach [Vick, 1985: 115-116]. [10]

Although proponents of the countervailing strategy do not refute the probable physical limitations on nuclear forces, they do not believe that these vulnerabilities should be used to curtail the development of nuclear strategies [Builder, 1978: 3]. It has been strongly argued that strategy should not be driven by technology, as proponents of this approach believe that nuclear employment plans should appropriately reflect and be dominated by the political considerations which they serve [Gray, 1984 (a): 23-27; Gray, 1984 (b):17-19; Gray and Payne, 1980; Hanson, 1982-83: 79]. In this regard, such analysts have praised highly the Soviet decision-making and strategy development practices as they appear on the surface to emphasize military criteria rather than being tailored to existing technologies. Such an attitude can be noted in the following Colin Gray observation,

American thinking on mutual deterrence, with its technological premises, reflects, a management approach by way of contrast to the Soviet military inclination [Gray, 1984 (a): 39].

Under this view, controllability or flexibility especially in the command and control component is not only desired, but needed. Great confidence, as is true of advocates of the guaranteed counterforce second strike approach, is expressed toward technological innovations by the supporters of countervailing strategies [Iklé, 1986]. The need to procure new strategic forces which have the capacity to prevail at any level of conflict is emphasized. Consequently, as noted by Colin Gray, a change in the procurement process is warranted as it is deemed to be highly inappropriate:

...this author does not accept the argument that U.S. war plans are in good order: the real deficiency lies in the strategic forces that have been acquired to attempt to implement them [Gray, 1984 (a): 24].

Countervailing strategists, therefore, propose systems by which limited nuclear employment options would authentically dominate both the war plans and the declaratory strategy of the United States. As a result of possessing an authentic escalation domination posture, U.S. decision-makers would not only be in a position to deter nuclear attacks, but also would be able to deter any type of challenge to U.S. interests. As this posture would emphasize clear military superiority, it is the ultimate tool which permits one to dictate conditions and behaviour in any crisis environment [Gray, 1984 (a): 48; Jervis, 1984: 143-144].

Both confidence in technological innovations as a method to overcome present vulnerabilities, and optimism in the ability of political authorities to properly control nuclear forces while conducting diplomatic moves in moments of tension, generally shape proponents of each scenario's approach to the controllability question. In the end, one notes that the respective attitudes toward these two points clearly differentiates the approaches from one another.

3) Conclusion

It is interesting to note that all three scenarios endorse the concept of deterrence, and its assured retaliation prescription [Gray, 1984 (b): 123]. As a result, all three approaches share a common belief that decision-makers approach the nuclear war question in a rational manner, and that decisions to employ these weapons would most likely emerge out of a thorough cost/benefit analysis. Consequently, technicians posit to varying degrees that a robust deterrent posture will prevent nuclear aggression even under unique conditions when core values are at stake. In this regard, the approaches differ in their suggested force structure notions as to what constitutes a credible deterrent [Kolkowicz, 1987]. This accounts for attitudinal differences concerning crises, and the concept of crisis stability.

Supporters of mutual assured destruction have grave difficulties recognizing crises as unique events. A general belief that the destructiveness of nuclear weapons inspires constant rationality accounts for this attitude. Moreover, it is precisely this element of total destructiveness that forces MAD advocates to discount any scenario in which nuclear weapons could play both an important political role, and be used in a controlled manner.

Proponents of these scenarios do fear current policy trends and perceive a danger in present attempts to acquire limited nuclear employment capabilities. As a result, MAD supporters fear that increased emphasis on

nuclear employment might inspire over-confidence in decision-makers in their ability to control nuclear forces. Consequently, MAD proponents view crises as distinct events. Possible reckless behaviour by decision-makers who become over-confident in their ability to undermine MAD's physical reality, is viewed to be extremely destabilizing as it forces the adversary to seriously ponder nuclear employment, as he is dealing with a decision-maker who ostensibly does not accept the constraints of MAD. Consequently, advocacy and adoption of limited nuclear employment options, under the MAD view, increases the risks of both accidental and unauthorized nuclear conflict, especially under crisis conditions [Allison, Carnesale, and Nye, 1986: 23].

Proponents of the guaranteed counterforce second strike approach view the superpower nuclear relationship differently, as they emphasize the competitive risk-taking behaviour within the relationship. While noting that both superpowers generally acknowledge the unique destructive power of nuclear weapons, guaranteed counterforce second strike supporters observe that under certain conditions superpowers might feel the necessity to cross the nuclear threshold as the consequences for not doing so appear more painful.

While supporters of this approach do acknowledge the precariousness of nuclear forces, and thus of their ability to execute limited war plans, they generally believe that attempts at acquiring such capacity constitutes a sufficiently strong signal of resolve as to deter reckless risk-taking. Failure

to act in this direction, however, might have adverse consequences, especially in moments of international tension. The end goal under this approach is not the implementation of an aggressive foreign policy, but rather an exercise in planning and appropriating the necessary tools to curtail aggressive behaviour. In this respect, crises are viewed as moments where risk-taking is more likely.

Proponents of countervailing strategies see added benefits in pursuing a policy of nuclear superiority. They view such a force posture as a method of imposing rationality, and eliminating under all circumstances the chances of reckless behaviour. A posture of nuclear superiority, therefore, permits one to not only to stack the odds in one's favour in any competitive situation, but also engenders a situation where one will possess the ability to dictate conditions to an adversary. Consequently, nuclear superiority not only deters war, but also becomes an important instrument for power projection. The capacity to correctly control nuclear weapons and conduct discrete nuclear operations is necessary in order to bolster the political utility of nuclear weapons. In this regard, crises are not necessarily dangerous moments during which one simply attempts to protect one's interests, but also unique moments where one can actually expand one's influence.

One notes that each scenario is influenced considerably by the respective analysts' attitudes toward both technological innovations, and confidence in the present measures which assure political control over nuclear weapons. All three scenarios are not distinct, and can essentially be

viewed as differing applications of deterrence theory. In the end, all technicians see nuclear weapons, and more specifically the nuclear balance, as a stabilizing factor in international relations.

CHAPTER 3

THE BEHAVIOURAL APPROACH OR UNDERSTANDING THE LIMITS OF CRISIS DECISION-MAKING.

A second group of analysts, especially in the 1970s and 1980s, have been less impressed with the results of bean-counting techniques and with the technical approach toward nuclear strategy. [11] These so-called behaviouralists of nuclear strategy have been most interested in the psychological repercussions generated by nuclear weapons and the threat of their employment, on foreign and defence policy decision-making. More specifically, behaviouralists of nuclear strategy have an interest in analyzing the impact of the nuclear phenomena on war/peace decisions. Less pre-occupied with technical issues such as the feasibility of certain nuclear employment scenarios, behaviouralists have attempted to assess in a systematic and empirically based manner the validity of deterrence theory.

The so-called behavioural school of nuclear strategy is comprised of essentially two differing, but not incommensurable approaches. The first approach stresses the individual, and is greatly preoccupied with how individual decision-makers react to certain circumstances within which nuclear weapons might be employed. The second approach emphasizes group or organizational dynamics, and is interested in the impact of such dynamics on nuclear decision-making. It thus aims at assessing and observing group or organizational behavioural changes in a variety of circumstances. This

second approach has been quite successful at validating its hypotheses as they have attempted to systematize their research through historical case studies which provide empirical bases for their arguments.

Despite the wide acclaim of behavioural oriented research on nuclear deterrence, this approach towards nuclear weapons and nuclear strategy has not been as influential on policy as the technical approach. It is clear that the behavioural school's emergence can be strongly associated with the upsurge of critical deterrence theory literature, which seriously brought into question the assumptions of the technical school. Yet, despite its skepticism about technical thinking, its inability to either quantify or to clearly systematize the short-comings of "technically" oriented deterrence theory, and to offer a clear alternative to that approach has prevented most behaviouralists from being influential in policy-making.

While, behavioural oriented research attempts to assess and identify the limitations of deterrence and of its application, it does not clearly prescribe abandonment of deterrence as a policy. It posits, however, that a clearer understanding of deterrence's limitations will generate better policy, and consequently, serve as a better guarantor of peace and security as employment of deterrence will be more selective. The words of Patrick Morgan best illustrate the spirit embodied by analysts of the behavioural school:

If we understood deterrence better, we would fear it more once we admit its limitations, we must do what we can to eliminate its necessity. That takes us beyond deterrence theory. That theory can tell us how it works; it cannot tell us where to go, and how to reach past it, only that we must [Morgan, 1983: 235].

As an attempt to remedy the short-comings of the technical school, behaviouralists have, thus, emphasized the necessity to better comprehend the psychological environment which surrounds any decision-making process within which nuclear weapons are present. [12]

In this regard, behaviouralists have attempted to highlight the simple fact that most security decisions are not made in environments conducive to optimal decision-making. As a result, behaviouralists have come to be highly skeptical of the posited rationality assumption in technical approaches to deterrence theory. Consequently, behaviouralists appear to have more thoroughly observed crises as they have utilized them as examples of events within which human behaviour does not necessarily follow cost-benefit type processes. This attack on the rationality assumption of the technical school is a central tenet, and also acts as a unifying theme, among different behaviouralists of nuclear strategy. While one observes a greater preoccupation with crisis events, it is unclear as to whether or not this concern translates itself into greater theorizing on crisis stability.

1. Defining Crisis Stability

The behavioural school is less preoccupied with quantitative measures than the technical analyses mentioned earlier. This school concentrates on the psychological and behavioural nature of the superpower relationship. Due to their focus on behavioural factors, analysts of this approach have obtained an awareness that decision-maker actions differ in alternate institutional contexts. Similarly, different situations influence decision-maker behaviour according to the nature of the values at stake. Presumably, actions which involve risks to only moderately important values are less controversial than similar actions which place national survival in jeopardy. The recognition of this reality is perhaps the major contribution of this school.

Unlike the technical school, behavioural approaches typically set broad parameters within which they define crisis phenomena. Behaviouralists have sought to identify characteristics unique to crisis events. Similarly, unique behaviours are discussed as reactions to unique crisis characteristics. Generally, Richard Ned Lebow's three point typology, which attempts to summarize decision-maker behaviour during crisis events, is fairly representative of this school:

(A) Policy-makers perceive that the action or threatened action of another international actor seriously impairs concrete national interests, the country's bargaining reputation, or their own ability to remain in power.

(B) Policy-makers perceive that any actions on their part designed to counter this threat (capitulation aside) will raise a significant prospect of war.

(C) Policy-makers perceive themselves to be acting under time constraints [Lebow, 1981:10].
[13]

Each of the three characteristics contain a psychological dimension. The factor emphasized by this typology is the great significance of actor perceptions to the likelihood of conflict. This factor encapsulates both actor self-perceptions and the assumed perceptions of an adversary. Any clear assessment of the perceptual dynamics is bound to be a difficult endeavour. In the absence of any widely accepted objective measure of perceptual variables, analysts of this approach have often limited themselves to broad statements concerning behavioural tendencies which should be minimized. Consequently, these analysts have written that a stable crisis environment is one in which actors do not have a general feeling that actual hostilities are unavoidable. As Lebow writes, "When war is believed to be inevitable, an expectation that can easily become self-fulfilling, policy-makers may not have the same incentive to avoid war" [Lebow, 1981: 254]

Under the conditions described by Lebow, rather than attempting to further or protect one interests short of violent conflict, decision-makers become relatively preoccupied with the timing and location of a preemptive strike. This tendency is clearly visible in remarks made by the German statesman Bismarck,

No government, if it regards war as inevitable even if it does not want it, would be so foolish as to leave to the enemy the choice of time and occasion and to wait for the moment which is convenient for the enemy [Lebow, 1981: 254].

This simple but essential point has been reformulated in the nuclear era; in contemporary terms it refers to the necessity for each superpower's strategic posture not to only deter, but also to reassure. [14]

To the behaviouralists then, the reassurance function of a deterrent posture is an essential component to maintaining peace between the superpowers. As noted by Robert Jervis is his recent critique of current American nuclear strategy: "...in nuclear peace-making the ability to make credible promises is as important as the ability to make credible threats" [Jervis, 1984: 167]. The reassurance issue addresses primarily the first two factors in the behavioural approach to crises. Other analysts have attempted to address the third issue, that of time constraints, with only limited success. [15]

For this approach incentives for the use of force derive not from some objective calculus of military advantage, but rather from a political-military climate which favours armed aggression. Such a situation is not easily reducible to numerical comparisons. Hence, balances in weaponry are a poor indicator of the nature of political relations. Rather, perceived vulnerability

and subjective assessments of one's own strength are the salient issues. From this perspective, a stable crisis environment is one in which those actors involved feel that war is not only not inevitable, but also that parties to the conflict would not gain through preemptive attacks.

Consequently, it is evident that this idea of crisis stability deemphasizes considerations of military capability in favour of a greater emphasis upon political issues. Hence, mutual perception is the key causal variable in the outbreak of conflict. How can this emphasis on non-technical criteria be justified? An examination of the behaviouralists' attitude towards nuclear war will reveal the bases for this school's conclusions.

2a) Perceptions of Nuclear Weapons

Most behaviouralists subscribe to the view that nuclear weapons have revolutionized the conduct of international politics. Hence, most work done within this approach attempts to undermine what is seen as an attempt to conventionalize nuclear issues. As Robert Jervis notes:

...the admirable aim to seek a way out of the conundrums that nuclear weapons present has been pursued with dedication, care, and logic. But resulting policies inevitably will be deeply flawed unless they come to grips with the unfortunate fact that no strategy can provide the kind of protection that was possible in the past [Jervis, 1984: 19].

Analysts of this approach have thus attempted to focus upon those behavioural dynamics which inhibit the full recognition of the nuclear revolution.

Analysts such as Robert Jervis, Richard Ned Lebow, and Jack Snyder have remarked that organizational biases within the military have acted to negate the recognition of new circumstances. More specifically, Jack Snyder in his book, The Ideology of the Offensive, finds that a 'cult of the offensive' is dominant within military organizations. This world view means that military organizations behave according to a discrete set of characteristics:

a) Military organizations tend to structure their plans according to criteria deriving from the last war that was fought.

b) These organizations consistently attempt to integrate new weapons, and technologies into pre-existing operational plans.

c) Most importantly, since war plans are prescriptions for action, post 1945 developments within the U.S. military strategy may be interpreted as attempts to rationalize the use of nuclear weapons for conventional military purposes [Snyder, 1984 (a): 30].

Richard Ned Lebow reaches a similar conclusion in his text, Nuclear Crisis Management: A Dangerous Illusion. Lebow observes that current war plans advocate the early and rapid initiation of nuclear strikes. In this

regard, current U.S. operational plans are such that without strict political control, nuclear operational procedures could result in U.S. initiation of nuclear attack, prior to the absorption of a first strike. As Lebow argues elegantly, "...military preparations that began as a purely defensive response to a threatening situation could provoke a cycle of reaction and counterreaction that could end up triggering an unintended nuclear war" [Lebow, 1987 (a): 103].

Analysts concerned with the individual level of analysis have noted a similar set of processes through which decision makers can come to negate, or refuse to acknowledge, the extraordinary conditions generated by the nuclear standoff. For example, Lebow himself has noted that perceived vulnerability to attack can lead decisionmakers to indulge in worst case analyses which themselves exacerbate the seriousness of a crisis [Lebow, 1987 (a): 31]. In a previous work, Lebow noted the salience of the findings of Irving Janis and Leon Mann. As he observes, small group dynamics may operate to reinforce biases towards courses of action which 'objectively speaking' appear irrational. As Lebow remarks:

~~Defense~~ mechanisms are most likely to break down when the policy maker is inescapably confronted with the reality he has hitherto repressed. Such a situation is most likely to develop during the most acute stage of international crisis when the decision for peace or war hangs in the balance. A breakdown in the policy makers' defenses at this time may result in erratic behaviour, or his actual paralysis. Either condition is likely to "freeze"

policy and contribute to the outbreak of war to the extent that it leaves the protagonists on a collision course [Lebow, 1981: 119].

A specific set of decision-making pathologies underpin Lebow's conclusions. These may be summarized as: a) overvaluation of past success; b) overconfidence; c) insensitivity to warnings; d) defensive avoidance and unconscious conflict [Lebow, 1981: 112].

Alexander L. George also analyses limitations to decision-maker rationality. George emphasizes limitations on the ability to effectively handle incoming information. Existing beliefs and imagery clearly impede effective decision-making. Should prevailing imagery be dominated by worst-case analyses, new information would tend to be assimilated to prevailing biases, making a dangerous crisis potentially unmanageable [George, 1980: 55]. The manageability of crises, and crisis stability itself, is partially dependent upon a wide variety of options being visible to decision-makers. Since 'frozen' imagery may narrow tremendously the perceived availability of options, it can render aggressive actions inherently more likely, while precluding conciliatory moves from consideration.

To conclude, the views of Paul Bracken regarding the stability of the nuclear relationship effectively summarize this school's attitude towards the nuclear revolution. At the outset, Bracken comments that most U.S. policy-makers generally accept the uniqueness of nuclear weapons. At the

same time, however, he observes that the necessity of planning for the utilization of nuclear force inherently involves the conceptualization of uncertainty [Bracken, 1983: 74]. Given the unknowability of such circumstances, prevailing conceptualizations are inherently flawed. Hence, conclusions drawn from attempts at coming to grips with analytical uncertainty depart from actual realities. Organizational standard operating procedures (SOP) are, thus, forced to come to grips with managing nuclear weapons during wartime. Since the prevailing military experience derives from conventional conflicts, nuclear operations are characterized by habits and biases unattuned to the realities of the nuclear age [Steinbruner, 1987: 554]. [16]

Thus, the recognition of unprecedented vulnerability leads decision-makers to only imperfectly plan nuclear operations. As a result, a tension arises between the necessities of political control of nuclear weapons, and of assuring retaliation should war occur. From the perspective of organizations charged with planning for nuclear war, SOPs are essential instruments for the management of uncertainty. To the extent, that these procedures are dominated by worst-case theses, crisis stability is seen as problematic [Bracken, 1987 (b): 352].

2b) Assessment of the Likelihood of Nuclear War

As noted previously most behaviouralists of nuclear strategy subscribe to deterrence theory. While their research emphasizes certain limitations of

deterrence as a practical tool of policy, analysts have not gone as far as to suggest that deterrence should be completely abandoned [Jervis, 1987: 289]. In this regard, it is generally assumed that a clearer understanding of deterrence theory, and of its limits will directly enhance world peace and security. As stated by Alexander George and Richard Smoke,

We believe and seek to demonstrate that systematic study of relevant historical experience can assist in developing a better theory of deterrence. Further, we believe and attempt to show that such an *inductively* derived theory of deterrence will emphasize the limitations and risks of deterrence strategy, as well as its possible uses under certain circumstances [George and Smoke, 1974: 2-3].

As a result of this conditional approval of nuclear deterrence, analysts of this school are generally optimistic about the future of the world. Their work thus emphasizes that proper, and very limited use of deterrent threats are not only legitimate, but also sometimes the only appropriate measures to avoid nuclear war [Morgan, 1983: 205-217].

Behaviouralists, however, have been alarmed by current American policy trends which emphasize nuclear war-fighting, and nuclear war prevailing strategies [Jervis, 1984]. More specifically, such analysts believe that the procurement of highly accurate weapons, the official adoption of counterforce targeting plans, and also the adoption of 'quick launch'

strategies [Lebow, 1987 (b)] are inimical to a prolonged peaceful nuclear stand-off, and consequently heighten the likelihood of nuclear war [Lebow, 1987 (a)]. This pessimistic view of current policy trends can be clearly observed in Stephen Van Evera's effort to compare present strategic postures with those which prevailed at the outset of World War I. As noted by Van Evera,

The 1914 case thus supports Robert Jervis and other theorists who propose that an offense-dominant world is more dangerous, and warns both superpowers against the offensive ideas which many military planners in both countries favor. [...] "Assured Destruction" leaves much to be desired as a nuclear strategy, and the world of "mutual assured destruction" ("MAD") which it fosters leaves much to be desired as well. But 1914 warns that we tamper with MAD at our peril: any exit from MAD to a counterforce world would create a much more dangerous arrangement, whose outlines we glimpsed in the First World War [Van Evera, 1984: 106-107].

The pessimistic assessment of current nuclear policy trends is premised on the view that these policies ignore certain physical realities. As a result, behaviouralists argue that current policies mislead decision-makers into believing that a nuclear war can be contained and fought safely. Hence, these analysts fear that by consistently denying the validity of the nuclear revolution current policies might be sufficiently persuasive as to convince present policy-makers that technological innovation has rendered the MAD

vision obsolete [Jervis, 1984: 29].

Some analysts have thus emphasized the dangers of such a situation. They have noted that decision-makers necessarily need to simplify complex issues, and consequently might be more easily attracted by the simplistic, but logical theoretical outline of war-fighting strategies. Thus, a fear that current strategies will transform political leaders into more aggressive foreign policy managers is prevalent. As noted by Robert Jervis,

...espousing the countervailing strategy raises the risk that decision-makers will talk themselves into believing that high levels of conventional violence and even limited nuclear wars could be kept under control. [Jervis, 1984: 163].

Such decision-making pathologies which lead decision-makers to ignore certain realities have been the focus of several studies. More specifically, the underlying premise in this Jervis observation stipulates that under certain conditions decision-makers block themselves out of incoming information. This process, which has been labelled cognitive rigidity, validates the fear held by behaviouralists that a nuclear war could be the product of military planners' consistent attempts to negate the premises of the nuclear revolution [George, 1980: 49].

Behavioural analysts have been quite active in opposing the various proposals which attempt to move American nuclear strategy beyond Mutual

Assured Destruction [Lebow, 1987 (a); David, 1987; Jervis, 1984; Beres, 1983]. Moreover, they have been especially skeptical of the Strategic Defense Initiative as they have held a general belief that military planners' plan to integrate such defensive technologies into current offensive war plans [David, 1987: 80-81]. Thus, behaviouralists have strongly attempted to re-integrate 'common-sense' into the nuclear strategy debate.

The common-sense argument has not only emphasized that current nuclear policies have ignored physical realities, but also that such policies are unattuned to the specific conditions which are likely to prevail in crises where nuclear weapons might be used. Despite the persuasively argued limitations of current nuclear policies and that such policies increase the likelihood of nuclear war, analysts of this school have offered no new alternatives to policy-makers, aside from the simple reiteration of MAD principles. This type of simple counsel can be clearly observed in Jervis's concluding remarks in The Illogic of American Nuclear Strategy.

There is something horribly irrational about a strategy which turns on the inherently uncertain possibility of unleashing the destruction that everyone wants above all to avoid. [...] The countervailing strategy fails because it tries to escape from the resulting dilemmas. But if the realization that one must build a strategy on the risks and uncertainties inherent in nuclear bargaining can avoid many of the errors and dangers of current policy, it cannot bring back the rational relationship between force and foreign policy that previously existed [Jervis, 1984: 170].

Consequently, it is interesting to note that in the face of the unprecedented uncertainties consonant with the nuclear revolution, behavioural analysts have felt unable to give specific policy guidance other than a quite general appeal to prudence. It is not evident that recent scholarship surpasses Hans Morgenthau's modest prescription for careful statesmanship in a prior era [Morgenthau, 1966:10]. [17]

2c) Assessment of the Likely Path to Nuclear War

Behaviouralists of nuclear strategy have only narrowly studied this issue. They have generally showed greater interest in the inadvertent war scenario, and because of their interests with decision-making processes they have viewed it to be the most likely path to nuclear war. Thus, support for this path is based on a recognition that threats to employ nuclear weapons affect in a unique manner decision-making processes. Consequently, as noted by Hilliard Roderick,

War started inadvertently is defined as a war which starts during a crisis even though the leaders of both sides order only those actions that each believes are not likely to lead to war [Roderick, 1983: 6].

An interesting dimension to this definition is an implicit belief that if nuclear war were to occur, it would be the product of many deliberate

decisions. In this regard, analysts of this school have not felt persuaded by the accidental nuclear war scenario of the "Strangelovian" type as they believe that the probabilities of such an occurrence to be extremely low [Bracken, 1985: 26].

While it is believed that technical accidents per se are unlikely to be the source of a nuclear war, behaviouralists argue, however, that such events could act as a catalyst forcing political leaders into making several decisions whose end results could be unintended nuclear war. An ingrained belief that decision-makers fully apprehend the consequences of the nuclear revolution thus forces the view that nuclear war could only be the product of mis-guided decision-making which is unable to cope with the pressures of an escalatory process which threatens core values. The specific conditions which force decision-makers to contemplate nuclear employment and bring about inadvertent nuclear war are highlighted by Hilliard Roderick.

The distinction between a war started by intent of the leaders of a state and a war started inadvertently is not always clear since a series of inadvertent events during a crisis may bring a leader to a desperate point where he believes the only option is for his state to launch a first strike [Roderick, 1983: 7].

Under this view, the escalatory process which leads to inadvertent nuclear war is characterized by two competing objectives which prevail in decision-makers' minds in moments of crisis. The first objective is an

attempt by each party to maximize his gains, which could mean the use of military force. The second objective emphasizes the collective responsibility of each party to stop short of nuclear war any competitive risk-taking initiative, which implies that all parties prefer avoiding nuclear war to maximizing their power, and that all parties are fully aware what the adversary deems to be acceptable losses [George, 1984 (a): 224].

Consequently, specific scenarios which lead to inadvertent nuclear war vary from analyst to analyst. Lebow, for instance, has recently identified three specific sequences of events which make nuclear war more probable. These three sequences are preemption, loss of control, and miscalculated escalation, and while such sequences have unique characteristics their interconnectedness makes nuclear war more likely. As noted by Lebow himself,

These three sequence to war are conceptually distinct. Any of them can be described separately but to demonstrate their practical effect, they must be analyzed in conjunction with one another. [...] So it is with crisis; the collective interaction of the three causal sequences, each with its own individual probability, determines whether war breaks out [Lebow, 1987 (a): 26-27].

Lebow observes that preemption is most likely to prevail in circumstances where decision-makers have lost complete confidence in their opposite numbers, and consequently believe that war is unavoidable.

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confines itself to indicating how to make threats: threats that are credible and potent enough to force an opponent to conclude that it is not in his self-interests to encroach on the defender's interests [George and Smoke, 1974: 571].

In the end, according to proponents of this approach, the inability to precisely predict the behaviours of decision-makers is such that this approach consistently discourages the use of nuclear weapons for coercive diplomatic purposes [Lebow, 1985 (c): 27-28]. Moreover, advocates of this have not only counselled against using nuclear weapons for political signalling purposes in acute crises, but have also strongly advised against transposing the logic of nuclear deterrence to events and circumstances where core values are not at stake.

In this regard, analysts of this school have supported research efforts which have attempted to illustrate to decision-makers the potentially counterproductive nature of nuclear threats [Jervis, Lebow, and Stein, 1985]. Moreover, they have been generally enthusiastic in their support of inducement strategies. The idea that a proper mix of positive and negative sanctions can more appropriately convince an adversary to withdraw has enjoyed an increasing amount of support among analysts of this school [Lebow, 1985 (b): 203-232].

In the final analysis, behaviouralists have noted, and denounced American over-reliance on nuclear deterrence as a method of conducting

[Lebow, 1987 (a): 26]. It refers to the fact that specific conditions which emerge in moments of acute tension may generate incorrect perceptions of the adversaries' intentions, and resolve [Cohen, 1979: 189].

Consequently, the miscalculated escalation sequence posits that any confrontational events which may lead to armed hostilities are subject to the possibility that adversaries will not be able to communicate, receive, and process correctly ~~their adversaries'~~ intentions and actions [Morgan, 1983: 203]. This situation thus generates a fog around crisis events which may not permit the respective parties to adopt measures which will avoid an undesired war. A limitation of deterrence theory which has been increasingly acknowledge is noted by Patrick Morgan;

The crux of the problem is that deterrence theory has presumed a degree of rationality on each side in a conflict that encompasses at least the following capabilities: the ability to accurately evaluate the opponent's military strength, the ability to read the opponent's intentions, and the ability to accurately predict the effects of one's statements and actions on the perceptions and behaviour of an opponent. That is a great deal to presume and, judging from the numerous studies of foreign policy decisions, we cannot do so with confidence [Morgan, 1983: 207].

While Lebow's sequences are quite thorough, they have been further reinforced by the works of Jack Levy [Levy, 1986] and Jack Snyder [Snyder, 1984 (a) and (b)].

Levy has been particularly successful at demonstrating the relationship between the rigidity of organizational routines (more specifically of military organizations) and their corrosive effect on proper political control. In this regard, Levy's research has been particularly effective at demonstrating how pre-established and pre-conceived actions which are disconnected from daily realities can contribute to increasing the likelihood of inadvertent war [Levy, 1986: 211]. More specifically, Levy notes a higher probability of loss of control when other external factors such as systemic issues (prestige and alliance commitments), organizational, and bureaucratic factors (military-civilian relations and intra-military conflict), and psychological elements (small group dynamics and individual decision-making pathologies) interact with rigid war plans [Levy, 1986: 206].

Similarly, but in more specific manner, Jack Snyder has closely observed the elaboration and implementation processes of military war plans [Snyder, 1984 (a)]. While generally supporting Levy's work Snyder notes that it is essential for internal military organizational need to simplify complex situations such as world politics. As a result, war planning is guided by a world view or organizational ideology that is not necessarily attuned to political realities [Snyder, 1984 (a): 210-211]. Such a situation may not only heighten the probabilities that political leaders may lose control of the military, but also may create a situation in which military postures inappropriately favour preemption. This state of affairs has also been recognized by Levy,

The organizational interests and routines of the military may also contribute to the outbreak of war through their effect on the formation of offensive military doctrines and war plans. These can contribute to war by increasing the incentives for preemption, by intensifying the perceived threat and exacerbating a conflict spiral, and by further crystallizing the rigidity of the routines [Levy, 1986: 219].

The Levy and Snyder logic, which have essentially been derived from pre-nuclear age observations (World War I), has been adapted to the nuclear era. Hence, Paul Bracken's study of the American nuclear command and control system has reiterated the validity of both Levy's and Snyder's findings. As noted by Bracken,

In broadest terms, the danger facing the world is that the superpowers have institutionalized a major nuclear showdown. They have built the most complex technological apparatus ever conceived, without thinking through its purpose or how to control it. The resulting conflict system is strongly reminiscent of the institutionalized conflict mechanisms of the early twentieth century [Bracken, 1983: 239].

Behavioural assessments of the likely paths to nuclear war can thus be summarized in the following manner. First, such analysts foresee nuclear war to be the end result of an escalatory tension building process between adversaries which is typical of a crisis. Yet, emphasizing a belief that

parties to this exercise in competitive risk-taking are at the outset fully aware of the consequences of nuclear war, and similarly that all parties to the event have no desire to experience the consequences of nuclear war, despite any possible gains. A sequence of decisions, however, may lead to this unintended and undesired result.

It is important to note and reiterate that analysts of this school are of the opinion that only a deliberate set of decisions, however misguided, could account for an inadvertent nuclear war. As specifically noted by Lebow, Levy, Snyder, and Bracken's work, misguided decisions are thus the product of several decision-making pathologies which reside either at the individual, organizational, or bureaucratic levels. In one way or another, such pathologies have adverse consequences on crisis decision-making as they tend to narrowly limit courses of actions which are not necessarily tailored to the situation at hand. They thus generate bad decision-making which can potentially lead to nuclear war [Lebow, 1981: 147].

2d) Assessment of the Political Use of Nuclear Weapons

Analysts of this school have accused traditional deterrence theorists and contemporary nuclear strategy of inappropriately characterizing crisis events. Consequently, this identified lack of comprehension for the unique conditions which prevail under crisis events has led behaviouralists to counsel against any attempts to deliberately manipulate risk in order to further one's international status and position. Such skepticism with present

prevailing attitudes toward crises, and crisis management is best observed through the words of Richard Ned Lebow,

Good crisis management cannot be fabricated from communication nodes, computer software, and special action groups. It requires fundamental changes in the force structures, the doctrines, and the target sets that define contemporary nuclear strategy. Like transmutation, crisis stability is theoretically possible, but for the foreseeable future it lies beyond the power of political alchemists [Lebow, 1987 (a): 18].

As a result of this lack of confidence with prevailing approaches to crisis management; and consequently, the insensitivity of deterrence theory to decision-making limitations, behaviouralists tend to strongly discourage the use of nuclear threats as tools of coercive diplomacy.

More specifically, they have been quite active in demonstrating the dangers incurred by the utilization of nuclear weapons for political signalling purposes [Allison, Carnesale, and Nye, 1985: 234]. Similarly, behaviouralists have voiced grave reservations as to the use of nuclear threats in order to advance one's interests in regional (and none nuclear) disputes. The efficacy of such techniques have been put into serious doubts by several analyses of an historical nature [Betts, 1987; George and Smoke, 1974]. As noted by Betts,

Reflection upon the record, however, suggests that this "balance of resolve" theory is more useful for

explaining the U.S. decisions to attempt nuclear leverage than it is for explaining Soviet reactions to the ploy. [...] The success of deterrence depends on the perception and judgment of the deterree, not on "objective" reality or the intent of the deterrer. The balance of resolve explanation thus offers little reason to assume either that U.S. leaders in the future will refrain from attempts to use nuclear leverage or that Moscow will react as favorably as in past cases [Betts, 1987: 31].

The rationale behind such a cautious attitude toward nuclear weapons and their use appears to be motivated by a predisposition to risk aversion by behaviouralists. Consequently, their inability to clearly identify and systematize the uncertainties which usually surround crisis decision-making, dissuades these analysts, from prescribing any other use of nuclear weapons than the ingrained belief that their sheer presence deters other nuclear adversaries from using their weapons [Jervis, 1984: 19-21]. This fear and unease with uncertainty is well illustrated by Robert Jervis:

The need for people to simplify the enormous amount of information they receive and the psychological pressures that result in motivated distortions mean that there will be serious discrepancies between the perceived and the actual environment [Jervis, 1985 (b): 33].

Furthermore, behaviouralists have argued against most policies which might exacerbate tension and uncertainties such as unclear and unwarranted

nuclear threats in regional disputes. Analysts such as Alexander George and Richard Smoke have gone to great lengths in demonstrating the limited applicability of nuclear deterrence theory to regional and non American core value conflicts [George and Smoke, 1974: 588-589].

More specifically, attempts have been to highlight the fact that employment of nuclear threats can be associated with reckless decision-making. A decision-making process which attempts to signal resolve, but is unable to do so because of its lack of comprehension of his adversary's intentions. Thus, the inability of the policy process to fully differentiate deterrence and compellance [George, Hall, and Simons, 1971: 21-32] provides sufficient evidence for most behaviouralists to believe that elegant theories of competitive risk-taking are of little relevance to policy-makers.

Deterrence as a concept, and as a tool of policy has not been clearly refuted by analysts of this school, such as George and Smoke. [18] They have, however, expressed grave reservations towards attempts at transposing strategic nuclear deterrence to non-strategic conventional forums of conflict. The inadequacy of the deductive concept of general nuclear deterrence is observed by authors George and Smoke,

Whether deterrent threats are necessary and useful in a particular historical situation cannot be judged either in theory or in practice on the basis of a prescriptive theory that narrowly

confines itself to indicating how to make threats: threats that are credible and potent enough to force an opponent to conclude that it is not in his self-interests to encroach on the defender's interests [George and Smoke, 1974: 571].

In the end, according to proponents of this approach, the inability to precisely predict the behaviours of decision-makers is such that this approach consistently discourages the use of nuclear weapons for coercive diplomatic purposes [Lebow, 1985 (c): 27-28]. Moreover, advocates of this have not only counselled against using nuclear weapons for political signalling purposes in acute crises, but have also strongly advised against transposing the logic of nuclear deterrence to events and circumstances where core values are not at stake.

In this regard, analysts of this school have supported research efforts which have attempted to illustrate to decision-makers the potentially counterproductive nature of nuclear threats [Jervis, Lebow, and Stein, 1985]. Moreover, they have been generally enthusiastic in their support of inducement strategies. The idea that a proper mix of positive and negative sanctions can more appropriately convince an adversary to withdraw has enjoyed an increasing amount of support among analysts of this school [Lebow, 1985 (b): 203-232].

In the final analysis, behaviouralists have noted, and denounced American over-reliance on nuclear deterrence as a method of conducting

foreign-policy [George and Smoke, 1974: 5-6]. Advocacy of an approach to foreign policy which would depart from this tendency has been strong [Lebow, 1985 (b): 232]. As a result, they have attempted to highlight the dangers and discredit the belief that political utility can be derived from nuclear forces.

2e) Assessment of the Controllability of Nuclear War

Among those behavioural analysts writing on this topic, Paul Bracken's study of the U. S.' nuclear command and control infrastructure is perhaps the most comprehensive. Bracken's focus upon organizational and operational issues has led him to some important insights with respect to the controllability of nuclear forces. In particular, a number of points are raised with regard to the dynamics of nuclear alerts: "Instead of asking whether nuclear war can be controlled, it is more relevant to ask whether nuclear alerts can be controlled" [Bracken, 1983: 242]. More specifically, the organizational routines which were formulated to take into account the unprecedented vulnerability of the nuclear age themselves incarnate sources of instability. The tension between positive and negative control that characterizes the U.S. command system can serve as a metaphor for the uncertain relationship between crisis stability and strategic deterrence [Bracken, 1987 (a): 197-213].

In a similar vein, the behaviouralists focus upon strategic doctrine, in addition to nuclear operations, in order to emphasize the instabilities arising from attempts to manage nuclear forces in a conventional manner:

Surgical counterforce attacks and limited nuclear options present incentives for restraints and for maintenance of national command authorities. But the theoretical existence of such incentives does not lead automatically to a capacity for carrying them out. The structure of strategic forces, the disposition and fragility of the command structures, and the character of the adversary attack will place serious strains on effective political control [Brewer and Bracken, 1984: 455].

As a result, behaviouralists conclude that current nuclear employment policies, with their emphasis upon counterforce targeting, run contrary to the espoused objective of limited nuclear options. This is the case because of the operational necessity of targeting command infrastructure in any counterforce campaign. Such a targeting policy promises to make intra-war deterrence, compellence - or negotiation, difficult - if not impossible to implement.

In support of the above conclusions, Jack Snyder has identified similar organizational and doctrinal tendencies in the major combatant states involved in World War I. In particular Snyder observes a tendency for the military to try and simplify complex operational variables according to a few simple maxims:

To make the complex task of war planning more manageable, the military strategist needs to develop relatively simple but effective techniques

for scanning and organizing information about the problem, and for structuring and evaluating the available options. It is primarily military doctrine, a set of beliefs about the nature of war and the keys to success on the battlefield, that performs this function for the military planner. [...] As the strategist's belief system simplifies and structures the strategic problem, it inevitably introduces elements of bias into perceptions and choices [Snyder, 1984 (a): 27].

The biases which inhere within the strategists' operational guidance, thus become baseline characteristics of the nuclear command system. In a sense, the imperfect doctrinal handling of uncertainty (the nuclear revolution) is introduced into organizational routines [Jervis, 1984: 109]. As a result, notions arguing for the necessity of rapid and steep escalation to counter-command targeting derive less from the physical characteristics of the weapons than they do from the operational imperative of the command system [Steinbruner, 1981-82].

Hence, the very act of planning for the unforeseeable introduces additional uncertainties into the strategic environment. These uncertainties have the added characteristic of being a resultant of factors deriving: a) from the nuclear revolution, and b) the structure of the command system. As a result, static analysis is unable to reveal the true characteristic of the nuclear strategic environment, thus making the controlled and limited use of nuclear weapons even more problematic.

3) Conclusion

Behavioural approaches to nuclear crisis stability share a common interest in observing decision-making processes. In particular, these analysts have attempted to highlight those factors which may prevent the decision-making process from approximating the ideal of rational decisional processes. Quite clearly then, one can observe that the behaviouralists possess some notion of 'objective rationality' according to which they assess actual decisional realities.

There is a prevailing belief within this school that the nuclear revolution is a politically recognized fact. At the same time, however, these analysts are aware that military planning, through its attempts to integrate nuclear weaponry into pre-nuclear military organizations, threatens the recognition of the new strategic conditions. Thus, the nuclear revolution is recognized in principle, but in actuality is continuously undermined by the necessities of security calculations.

This approach's awareness of the limits of human decision-making is reinforced by an appreciation of the attractiveness of elegant theoretical scenarios which promise controlled utilization of nuclear weaponry. Consequently, behaviouralists fear that under crisis conditions, militarily attractive, and seemingly rational options will be chosen which fly in the face of nuclear realities. Out of this concern emerges a recognition of the unique environmental conditions which shape international crises.

The main thrust of behavioural argumentation is based upon the view that current force postures and operational plans are inconsistent with the conditions likely to exist under crisis conditions. As a result, these plans are unlikely to effectively handle the dynamics of a major international crisis. Many of the limitations of these operational plans derive from a dependence upon deterrence theory as a source of predictions regarding likely adversary behaviour. The divergence of actual decision-making from the rational ideal described by deterrence theory renders these predictions vulnerable to error [Allison, 1971].

The actual nature of decision-making highlights the importance of actor perceptions to assessments of crisis conditions [Jervis, 1968].⁵ As Jervis argues, it is frequently necessary to reassure adversaries of the contingent nature of deterrent threats in order to stabilize non-crisis conditions [Jervis, 1984: 14]. Richard Ned Lebow argues a similar point when addressing the complexity of the threat environment confronting a status quo power:

It may be that to avoid war, a status quo power has to pursue two distinct and not easily reconcilable objectives. It must maintain its own power and credibility while at the same time working to forestall the development of the kind of unstable conditions that lead to a security dilemma. [...] The ideal way to accomplish this may be to deploy the kinds of forces which convey no serious threat of offensive advantage and thus avoid bringing about a situation of strategic

instability [Lebow, 1985 (c): 26].

The behavioural school thus carries an awareness of the limitations of deterrence theory. This awareness, however, does not lead these analysts to counsel radical changes in the prevailing policies. Instead, an emphasis upon prudential behaviour is paramount. In this sense, this school represents a link with classical realist scholarship, which emphasized the notion of limits to both feasible planning, and the values according to which a state's military establishment was held to account.

CHAPTER 4

SYNTHESIS: DETERRERS, REASSURERS AND THE PARADIGM OF CONFLICT MANAGEMENT.

In chapters two and three, two approaches to Crisis Stability were outlined. Through a five point investigation, a number of differing points of emphasis were identified. At the same time, however, a certain commonality of attitudes on a number of issues was discovered. This chapter will highlight the divergence of view between the two schools as itself illustrative of an intra-paradigm debate. Furthermore, it will be argued that both the technical and behavioural approaches argue compatible and complementary theses, which contribute to a homogeneous perspective on crisis management that is characteristic of the strategic studies community.

As was noted above, two important characteristics of the nuclear revolution are the unprecedented destructive power of the weapons, and the advanced nature of delivery systems. As a result of these factors, decision-makers are confronted with an unfortunate dilemma which counterposes military efficacy to political control [Bracken, 1987 (b): 367-371; Bracken, 1983: 69-73]. As John Steinbruner notes:

Because of the extreme destructiveness and rapid timing of nuclear weapons, governments that possess them confront unavoidable conflicts among their fundamental objectives. [...]...there is a

tension between the exercise of political control and the guarantee of effective retaliation [Steinbruner, 1987: 535].

As a result, the tension between operational planning and political control may serve as a dividing line separating the behavioural approach from its more technical variant. On the one hand, proponents of the technical school have essentially been preoccupied with methods which assure retaliation. Behaviouralists, however, have been more concerned with addressing not only methods for avoiding unauthorized use of nuclear weapons; but, also with avoiding inadvertent nuclear war. To be succinct, technical analysts focus upon the deterrence component of military operations, while behaviouralists discuss the reassurance function of military planning [McCWire, 1986: 24; McCWire, 1985-86: 55-70].

1) How technicians become deterrers

The technical approach focuses almost completely on the concept of deterrence. In this context, deterrence may be said to represent the regulation of one's interactions with a potential adversary through the procurement of military means [Morgan, 1983: 43]. Hence, the focus is upon strategic stability - the general condition of the strategic environment during non crisis situations. In a similar vein, technicians advocate a nuclear posture capable of meeting the requirements of a stable, constrained conflict.

aggressiveness, another set of measures are necessary. These measures must address those factors internal to the adversary which generate conflict.

3) The Paradigm of Conflict Management

It can be argued that both deterrence and reassurance theorists are operating within the same paradigm [McCWire, 1985-86]. This broader approach may be labelled the paradigm of conflict management. This approach carries with it a belief that conflict is amenable to systematic, and perhaps scientific, analysis. As such, it is argued that a thorough study of historical conflicts can contribute to the formulation of analytical categories which enable scholars to better understand international relations [Lebow, 1981; George and Smoke, 1974]. In particular, given the field's concern with policy relevance, an emphasis on predictive accuracy is a recurrent theme. Policy recommendations arising out of these approaches thus claim scientific status.

The scientific emphasis of conflict management places a premium on the rigorous gathering of information in pursuit of empirical accuracy. Thus, information gathering and the creation of large data sets is seen as a necessary part of the field's development. In addition, the in depth study of a few historical events is frequently used as the basis for statements concerning broad trends in actor behaviour [Allison, Carnesale, and Nye, 1985: 223-246]. Such an attitude is best exemplified by Albert Carnesale and Richard Haass's recent attempt to evaluate the successfulness of past arms

recognition of the homogeneous nature of crisis and non-crisis environments is necessary for the assured destruction approach's thesis to be valid.

Inherent to the MAD approach is a disapproval of conventional military planning, that runs contrary to the thesis argued above [Bracken, 1987 (a) 238-240; Keeny and Panofsky, 1980-81]. Such planning is not only inappropriate, but is actually dangerous because it recommends deterrent strategies inconsistent with the nuclear environment. A scenario which is greatly feared by analysts such as Leslie Gelb and Anthony Lake,

Both sides are developing and testing new technologies-antisatellite weapons, antisubmarine warfare, terminal guidance for warheads, space-based defense systems and the like. When and if these are all deployed, possibly in the next 10 to 15 years, the essential calculus of deterrence-that no matter which side strikes first, both sides lose-could be undermined. In times of crisis, leaders of both sides could come to believe that they might be able to strike first, destroy all the other side's assets, and blunt the small retaliatory attack [Gelb and Lake, 1985: 488].

Strategies that envision the limited use of nuclear weapons, nuclear compellent threats, or the use of nuclear coercive diplomacy all run counter to the logic of assured destruction. In the face of unprecedented vulnerabilities, war-fighting strategies have a perverse effect upon crisis conditions. Thus, assured destruction theorists have been forced to reassess

their appreciation of crises.

Proponents of the assured counterforce second strike approach differ from assured destruction theorists in that they argue for the necessity of avoiding self-deterrence in the initiation of nuclear strikes. In this regard, postural injunctions in favour of enhanced credibility of the retaliatory threat emphasizes the sustained engagement of an adversary's force concentrations for the purpose of giving to decision-makers politically meaningful retaliatory options [Wohlstetter and Brody, 1987: 152-153]. More particularly, this approach attempts to straddle the line between existential deterrence on the one hand, and fully conventionalized nuclear employment options, on the other. Damage limitation, that is the ability to limit damage to one's self in the event of a surprise attack, is also a goal of this school. For this perspective, crisis stability involves the imposition upon the adversary of an enhanced level of vulnerability which simultaneously denies advantages deriving from a first strike to the adversary, and yet does not itself constitute a credible theory of victory [Gray and Payne, 1980: 18].

For the countervailing approach, the damage limitation thesis is taken one step further. Rather than stopping short of a theory of victory, the strategy itself constitutes a plan for prevailing in military conflict. Countervailing strategies add to the assured counterforce second strike approach an emphasis upon the targeting of an adversary's recovery capability [Gray and Payne, 1980: 21]. Thus, the countervailing approach views a stable crisis environment in quite old fashioned terms. Stable crisis situation are

those characterized by the possession, by the status quo state, of usable, credible and robust nuclear forces that are able to dominate all levels of escalation [Kahn, 1965].

All three approaches view the employment of nuclear threats as an efficient way of limiting threats to core values. The nature of what constitutes a credible threat is the focus of controversy. For each of the three approaches, incentives for striking first are the most important issue. One can discuss the transition among these approaches as an attempt to render robust the 'objective' reality of absolute vulnerability. The inherently subjective assessment of adversary capability and intent renders necessary the continuous maintenance of a level of deterrence. In pursuit of this shared appreciation of vulnerability, an attempt is made to disabuse a potential adversary of any doubt concerning one's ability to hold his core value at risk [McCWire, 1986: 28].

The three approaches constitute different ways of threatening an adversary's survival [Gray, 1984 (b)]. Variations in capability derive from different assessments of those values which must be threatened in order for stable, peaceful relations to be maintained. By extension, these variations themselves constitute different perceptions of an adversary's nature. [20] As such, the objective of deterrence remains the maintenance of crisis stability; that is, a situation where the parties to a crisis have no incentive to strike first [McCWire, 1985-86: 67]. A complicating factor is highlighted by the different appreciation of an adversary's nature characteristic of each

approach. Where initially mutual vulnerability is the subjective reality which underpins the approach to deterrence, as one adds tactical innovations in the pursuit of political utility, the mutuality becomes modified. Rather than attempting to satisfy conditions of similar appreciations of vulnerability, adversaries attempt to utilize subjective asymmetries in the appreciation of the nuclear revolution for political purposes. Thus, crisis stability may be enhanced by: a) the possession of forces which have coercive political potential; b) forces capable of surviving preemption, and c) the ability to hold at risk the long-run appreciation of the development of the strategic environment held by the enemy. Each of these elements serves to deny the interdependence of superpower security. Hence, crisis stability essentially consists of negating to the extent possible the interdependence of actor security.

2) How behaviouralists become reassurers.

Behaviouralists generally argue that decision-makers are quite aware of the realities of the nuclear era. There are limits, however, in the degree to which this recognition can be translated into qualitatively different decision-making procedures. More specifically, the penalties for inefficient decision-making, or rather a decision environment which departs from optimal conditions, promise to be unprecedented in both scope and intensity. In a related vein, behaviouralists have sought to describe crises themselves as unique events [Lebow, 1987 (a): 16]. As such, in principle it is probably impossible to draw general conclusions with respect to the nature of an

optimal decision environment [Lebow, 1987 (a): 19].

The uniqueness of crises has a number of related effects. These effects may be discussed as a set of influences which modify putatively rational decision-making procedures. As such, even 'optimal' decision-making may result in sub-optimal outcomes. In this case, optimality refers to those plans designed in an effort to take note of uncertainty. The optimality is thus purely a subjective phenomenon. For the behaviouralists crisis stability is defined as an environment which does not favour armed aggression. In addition, a crisis stable situation is described as one where the parties to the conflict do not perceive advantage from the initiation of the use of force [Morgan, 1983: 33]. [21] As a result, the behavioural approach recommends prudence, and emphasizes the necessity for decision-makers to understand the actual complexity of real world events [Morgan, 1983: 103-126]. In this way, they will be more able to comprehend the motivation for adversary's behaviour [Allison, Carnesale, and Nye, 1985: 223-246; Morgan, 1985: 125-152].

This concern with context is emphasized when behaviouralists argue that decision-makers must convince potential adversaries that compliance with a threat will result in that threat not being carried out [Snyder, 1985: 179]. In essence, this concern with reassurance constitutes a partial support for deterrence strategies; it, however, is of only tactical significance, since it does not attack the sources of conflict [Lebow, 1985 (c): 26]. The status quo is thus the object of decision-maker behaviour. And, crisis stability is

viewed as a mainly status quo concept.

The concern with stable relations, existent over long periods of time, highlights the behaviouralists' focus upon perceptual issues [Lebow and Stein, 1987: 80]. More specifically, the reassurance strategies mentioned above are aimed at alleviating feelings of unilateral vulnerability which may lead towards preemptive strategies. An additional aspect of reassurance tactics is the building of empathy in an adversary's for one's strategic position. This approach emphasizes the mutuality of any existing vulnerabilities. As such, crisis stability is enhanced by the simultaneous alleviation of perceived incentives for the initiation of nuclear strikes, possessed by both sides. [22]

Reassurance strategies can take many forms, some of which are more ambitious than others. As such one may posit a hierarchy of reassurance strategies. One's placement of a particular strategy in this notional hierarchy would depend upon both the perceived motivation lying behind an adversary's aggressiveness, and degree of instrumental control required for the successful implementation of the strategy [Lebow and Stein, 1987: 123-126]. Strategists who favour reassurance, and who believe that adversary aggressiveness is a product of perceived opportunities, emphasize the importance of measures which reintroduce into the challenging state's calculus the awareness of mutual vulnerability [Lebow, 1985 (c): 26]. In this way, an opportunist state is dissuaded from challenging core values through the imposition of a parallel contingent threat to his own survival [Lebow and Stein, 1987: 31].

More sophisticated approaches to reassurance attempt to come to grips with non opportunistic challenges to core values. These challenges may derive from the domestic political needs of the challenger [Morgan, 1985: 152]. If this is the case then reassurance strategies must seek to identify the roots of an adversary's behaviour in an attempt to condition those domestic elements within the political economy which favour the status quo. Such strategies may be interpreted as appeasement [Lebow and Stein, 1987: 118]. Similarly though, they may be seen as effective strategies aimed at reducing pressures leading to outbreaks of violence, both international and domestic.

A number of examples of reassurance measures have been suggested. Alexander George cites: emergent rules of engagement, norms of reciprocity, preventive diplomacy, and norms of escalation control, as examples of potentially preventive instrumentalities which might be used in support of a status quo. Among these measures, one may note that prescriptions meant to address emerging situations may be fundamentally inappropriate to extant situations of tension [George, 1983: 365-398]. These measures have as their fundamental basis the notion that, challenges to the status quo arise out of a perception of opportunity, rather than from need [Lebow and Stein, 1987: 124].

As is noted by George, a state's relations with a potential adversary are themselves composed of a series of contacts. As a result, an additional criterion for effective reassurance is a relatively hermetic way of implementing its policies. In this way, negative externalities which may

effect future contacts are minimized. The difficulty of achieving effective reassurance is highlighted by Alexander George in his discussion of the complexity of relations between the United States and the Soviet Union:

Given the fact that the relative interests of the United States and the Soviet Union vary from one area to another, we need to view their global rivalry as composed of a variety of competitive games that have different structures and somewhat different logics or implications for managing competition in the interest of crisis prevention [George, 1983: 381].

It appears in this discussion that George assumes that opportunistic factors lie at the root of most superpower conflicts. Hence, needs-based conflicts are not handled effectively by his prescribed methods.

Strategies of reassurance based upon the assumption of opportunistic motivation have entered the policy realm as initiatives for Confidence-Building Measures, Nuclear Risk Reduction Centers, and more generally, in the Basic Principles Agreement of 1972. [23] A number of authors have attempted to address to more difficult issue of challenges to a state's core value deriving from the domestic needs of an adversary. In particular, the work of Janice Stein and Richard Ned Lebow represents some of the more imaginative scholarship in this vein [Lebow and Stein, 1987; Jervis, Lebow, and Stein, 1985; Lebow, 1985 (c)].

A pattern of measures that Stein and Lebow argue are capable of addressing needs-based aggression are the following: personal diplomacy, informal or formal agreements (limited security regimes) (which build confidence, and reduce uncertainty, and diminish the probability of miscalculated), norms of competition, and more ambitious strategies of reciprocity which induce cooperation [Lebow and Stein, 1987: 81-123]. It is thus posited that,

Reassurance dictates that defenders try to communicate to their adversary their benign intentions. They do so to reduce the fear, misunderstanding, and insecurity that, ... are so often responsible for escalation to war [Lebow and Stein, 1987: 81].

This discussion differs from that of Alexander George in that it addresses core differences of interest which generate conflict. Similarly, deterrent strategies have no efficacy against such aggressive behaviour; in fact such strategies tend to exacerbate tensions.

Reassurance strategies, with all their flaws, alone possess utility when needs-based aggression confronts an actor. In this case, notions of crisis stability have a dual nature. On the one hand, if a spiral of tensions derives from opportunistic threats to the status quo, deterrent strategies maximize crisis stability. If, however, domestic instabilities within a previously status quo but now revisionist actor are the sources of

aggressiveness, another set of measures are necessary. These measures must address those factors internal to the adversary which generate conflict.

3) The Paradigm of Conflict Management

It can be argued that both deterrence and reassurance theorists are operating within the same paradigm [McCWire, 1985-86]. This broader approach may be labelled the paradigm of conflict management. This approach carries with it a belief that conflict is amenable to systematic, and perhaps scientific, analysis. As such, it is argued that a thorough study of historical conflicts can contribute to the formulation of analytical categories which enable scholars to better understand international relations [Lebow, 1981; George and Smoke, 1974]. In particular, given the field's concern with policy relevance, an emphasis on predictive accuracy is a recurrent theme. Policy recommendations arising out of these approaches thus claim scientific status.

The scientific emphasis of conflict management places a premium on the rigorous gathering of information in pursuit of empirical accuracy. Thus, information gathering and the creation of large data sets is seen as a necessary part of the field's development. In addition, the in depth study of a few historical events is frequently used as the basis for statements concerning broad trends in actor behaviour [Allison, Carnesale, and Nye, 1985: 223-246]. Such an attitude is best exemplified by Albert Carnesale and Richard Haass's recent attempt to evaluate the successfulness of past arms

control agreements. As noted by Carnesale and Haass,

Nuclear arms control has been the central theme of superpower relations for at least a quarter of a century. Everyone agrees that there are valuable lessons to be learned from those decades of experience [...] In this volume, we test the views held by important actors in the arms control process against the historical record of negotiations and accords, and we identify those lessons that are consistent with the evidence and those that are not. Our goal is to present an accurate and objective picture of arms control's past [Carnesale and Haass, 1987: ix].

It is important to note the acknowledged limitations of the later approach. Its practitioners are typically among the most self-conscious of international analysts [Lebow and Stein, 1987: 7-10]. The more 'scientifically' inclined analysts emphasize cumulation of research findings which are themselves subject to rigorous testing.

The more sensitive elements of the conflict management paradigm are illustrated well by Richard Ned Lebow, and Janice Stein's remarks concerning reassurance and deterrence strategies:

...sensitivity to the limiting conditions of each strategy, and their interactive effects is the only way we can improve our capacity to manage international conflict short of war [Lebow and Stein, 1987: 126].

In essence, this sensitivity is itself hostage to the close proximity of the conflict managers to the policy world. At this point, the interaction of the scholarly community with practioners becomes an important issue.

In particular, it can be argued that the conflict management community shares a basic belief that conflict can be scientifically managed. This belief is not routinely subject to empirical questioning. As such, it is similar to an organizational ideology. There is a more than coincidental similarity between this notion and Jack Snyder's ideology of the offensive [Snyder, 1984 (a):15-40]. This pattern of biases may lead to a disjuncture between analytical concerns and the empirical world [Freedman, 1981: 398-400]. This itself constitutes a further limitation upon analyses, especially when taking into account the nuclear revolution.

The pattern of biases consonant with the conflict management paradigm generally posits that international conflict can be managed in the same way as competing interests with organization are handled. In a sense, then, conflict management processes attempt to de-politicize international relations. From this vantage point, both the reassurers and deterrers concentrate on a technical description of political actions. Differences of values are quite poorly handled by such approaches. As such, these two schools posit similar motives and sources for emergent crises. As noted, by Lawrence Freedman:

What is often forgotten in strategic studies, preoccupied with military capabilities, is that the balance of terror rests upon a particular arrangement of political relations as much as on the quality and quantity of the respective nuclear arsenals. Movement in these political relations could prove far more disturbing to nuclear stability than any movements of purely military factors. The major task for the future must be to address the problems of nuclear arsenals in a world of political change [Freedman, 1981: 399].

In this regard, detergers and reassurers both have a common objective, the prevention of war or, more specifically, deterring challenges and aggression to one's core values. This can be differentiated from crisis avoidance, since the latter term is concerned with addressing domestic sources of external aggression. As Michael MccGwire notes:

Besides falling into the fallacy of claiming to deter an activity rather than an action, the pious overtones of this expression obscure the radical nature of the underlying principle. U.S. policies are now based on the idea of deterring or preventing war by the threat of punishment, rather than the time honoured principle of averting or avoiding war through negotiation and diplomacy [MccGwire, 1985-86: 63].

Here McGwire is concerned with bridging the gap between internally generated aggression and external sources of threat.

As is evident from the above remarks, both deterrers and reassurers believe that aggression internationally may arise out of perceived windows of opportunity. By extension, both approaches presume that some sort of decisional calculus lies behind the behaviour. In this regard, those reassurance theorists who focus upon internal needs-based aggression also posit some form of abstract decisional role. In this case, a comparison of internal values with costs of foregoing external actions is the focus of state policy.

Deterrence theorists and those reassurance analysts most concerned with opportunity-based aggression both evaluate aggressive intent and stable relations in a military manner. As such, stability is discussed in relation to the military balance, which itself is primarily a concern of military strategists. Hence, the strategic debate is dominated by military calculations of vulnerability, threat, and opportunity. This reality is noted by Michael McGwire when he writes about the theoretical structure of American strategic thinking:

Military strategy itself was driven from the so-called strategic debate. It was replaced in part by more tangible concepts like "force exchange ratios", "damage expectancies", and "kill probabilities", which were amenable to mathematical permutation. But the debate also

focused on the theoretical elaboration of deterrence and reassurance. The mathematical models were excellent for generating hard numbers and anchored the debate at the level where Americans are most comfortable: the technical and budgetary aspects of forces requirements. The theoretical elaborations applied Cartesian logic to complex problems of political psychology, resulting in bad politics and bad strategy, as the United States found to its cost in Vietnam [McCWire, 1986: 26].

Similarly, it is interesting to note that both deterrence and reassurance are vulnerable to the same psychological, political, and organizational flaws. These problems have long been identified by behavioural theorists, and recently have become the subject of renewed attention from Janice Stein and Richard Ned Lebow: "To succeed, however, it (reassurance) must overcome many psychological and political obstacles which confound deterrence" [Lebow and Stein, 1987: 124].

These authors argue that a 'proper mix' of deterrence and reassurance strategies are optimal for the management of foreign policy. In particular the basic thesis holds that deterrence alone, while efficacious for preventing an adversary use of force against core values, may simultaneously render the underlying conflict more severe. As a result, a supplementary set of reassurance measures may help confine the effects of a deterrent threat to the desired target, thus minimizing any negative conflict generating factors. In this way, the uncertainty of deterrence is partially reduced and conflict

management made more efficient [Lebow and Stein, 1987: 81; Jervis, 1984: 14].

Those reassurance strategists who address state aggressiveness deriving from internal needs go beyond the narrow focus of deterrence theorists. With respect to this category of aggression, reassurance strategies substitute entirely for the application of deterrence. Inherently, however, this approach remains within the paradigm of conflict management, since the objective is still the search for methods, which will permit minimally the maintenance of the status quo or maximally permit one's state to increase its international influence and thus protect its interests.

Needs-based reassurance strategies may result in departures from the traditional war prevention approach [Lebow and Stein, 1987: 124-125]. Since they address the sources of conflict prior to a period of heightened tensions, these approaches promise to at least raise the salience of conflict resolution, rather than simply that of conflict management. It is interesting that this theoretical innovation addresses one of the key weaknesses of deterrence theory, its failure to address the nature of the values in contention:

...deterrence theorists are concerned with the danger that states will become *more* aggressive if their unreasonable demands are met. But much less is said about transforming hostile relations into peaceful ones. (This inattention also continues the realist tradition. The origins of wars and courses of crises are much more

frequently studied than the defusing of tensions and the diminution of conflict.) Although deterrence theory implicitly endorses the containment doctrine's claim that if the Soviet Union is prevented from expanding, it will eventually become peaceful, this position lacks grounding in the rest of the theory and must remain an ad hoc addition [*my emphasis*] [Jervis, 1979: 292].

In spite of the possible weaknesses of the reassurance thesis, in this regard at least it represents a progression over deterrence theory as interpreted in American foreign policy.

This chapter has focused upon the unifying paradigmatic approach which links the technical theorists to the Behavioural School. The substance of this link is evident through the complementarity of the policy prescriptions advocated by the two schools. The technical school attempts to emphasize deterrent threats as a means with which one's relations with an adversary may be managed. The behavioural approach identifies certain key weaknesses of deterrence theory's implementation, and attempts to contribute policy prescriptions to ameliorate them. In addition though, the reassurance prescriptions go beyond the narrow focus of deterrence theory with ongoing conflictual interaction.

Reassurance approaches attempt to address aggressiveness arising out of perceived strategic opportunity, as well as that arising out of political and social dynamics internal to an adversary's society. The latter focus

illustrates how reassurance theory departs from conventional deterrence thinking. In attempting to ameliorate the actual sources of conflictual relations, reassurance policies are directed at the sources of conflict spirals themselves - and thus, with conflict resolution, not merely crisis management. This concern reflects back upon the unity of the underlying paradigm which argues for the feasibility of the intense and rigorous use of management methodologies to alter conflictual situations. Reassurance approaches merely take a step further a basic premise of the conflict management paradigm. The extent to which the policies of reassurance are routinely feasible is a controversial point. To an extent, however, the emergence of reassurance strategies conceptually is important because it reveals a full recognition of deterrence theory's weaknesses. At the same time, the theoretical possibilities inherent within the reassurance approach illustrate clearly the conceptual development of the conflict management paradigm beyond deterrence towards the amelioration of conflict patterns themselves.

CONCLUSION

This study has attempted to reveal how nuclear strategists have defined the concept of crisis stability, to identify the competing formulations of the concept in the literature, and monitor its evolution. Initial analyses of the crisis stability literature (presented in chapter one) failed to provide an adequate classification of approaches according to the diverging definitions of crisis stability. It was thus essential to formulate different categories, which would be operational and adequate to the field of strategic studies. Two approaches were thus identified. The technical and behavioural perspective on crisis stability respond to the divergent interests and attitudes that strategic analysts have concerning nuclear weapons and their impact on international politics.

In order to clearly identify the differences between technicians and behaviouralists in their respective approaches to crisis stability, chapters two and three attempted to define their respective attitude towards five crucial points inherent to the study of nuclear crisis: a) the perception of nuclear weapons; b) the assessment of the likelihood of nuclear war; c) the assessment of the most likely paths to nuclear war; d) the assessment of the political utility of nuclear weapons; and e) the assessment of the controllability of nuclear war.

This systematic study revealed the assumptions of technicians and behaviouralists toward both nuclear weapons and crisis stability, which were

then articulated and synthesized in chapter four. The thrust of this paper, clearly elaborated in the fourth chapter, was to show that despite the differences between these two streams of strategic analysts, both belonged to the same group of conflict managers. Technicians may use the concept of crisis stability differently than behaviouralists do; this difference, however, is not the consequence of two diverging approaches to this specific concept. Rather, it is argued that it is the result of the various solutions strategic analysts have prescribed for conflict management.

This disagreement has not prevented behaviouralists from joining technicians in their support for the concept of deterrence [McCWire, 1986; McCWire, 1985-86]. Moreover, the destructiveness of nuclear weapons was for both streams sufficiently persuasive to prevent war, if clearly understood by the various parties in time of crisis. The divergence of view appears in the definition of what constitutes a credible nuclear deterrent threat, which was elaborated in the second and fourth chapters.

Both, technicians and behaviouralists agree on the importance of vulnerability to nuclear devastation. Technicians, however, disagree among themselves on the structure of this vulnerability. They define different types of vulnerability and, therefore, the different ways in which a nuclear deterrent threat can operate (chapter four). Contrarily, behaviouralists have developed a consensus according to which nuclear weapons appear to be the source of mutual vulnerability for both superpowers.

One can argue though, that technicians, like behaviouralists consider stability to be defined through an assessment of the strategic nuclear balance. Behaviouralists, however, go a step further in their analysis. These analysts attempt to study the perception of vulnerability among decision-makers, and its likely impact on imperfect and stressful crisis environments. [24] The likelihood of nuclear war, however, remains for both streams very slim.

Both assured destruction theorists and behaviouralists have developed a negative assessment of current trends in nuclear planning. Assured destruction theorists agree with behaviouralists, and denounce nuclear war-fighting strategies. These strategies according to both approaches, are more prone to trigger nuclear war than they are to bolstering strategic deterrence. MAD theorists argue that war-fighting strategies will sustain and increase in intensity an already unlimited arms race. This nuclear planning is, therefore, likely to convince, and thus mis-guide decision-makers into thinking that a nuclear war can be fought and won.

Behaviouralists have also expressed reservations with respect to limited nuclear war planning, but for different reasons. These analysts argue that such planning is likely to increase the stress on decision-makers. According to behaviouralists, this stress ultimately impairs the decision-making process. Stress would therefore lead, or at least contribute, to the breakdown of these decision-making processes in periods of crises.

It is interesting to note that behaviouralists seem to perceive the nuclear war decision-making process as one of 'checks and balances'. This system of 'checks and balances' is operational within optimal environmental conditions, but may not prevent the type of breakdown in decision-making processes, that has been induced by the planning for 'limited nuclear war'. Behaviouralists fear this planning, and the likely breakdown in decision-making, especially given the possibility that under such circumstances the military organization's biases for war-fighting, would dominate decision-making.

The likelihood that military organizations will dominate decision-making processes is also higher within the war-fighting strategies discussed earlier for a second reason. These strategies prescribe, and are heavily dependent upon, the rapid intervention of the military in the command structure during any crises, thus further removing civilian control from crisis decision-making [Bracken, 1983].

Bearing in mind the way behaviouralists have described decisional breakdowns, one can argue that the behavioural approach describes crises as unique events. The outbreak of crisis carries the understanding that decision-makers have experienced a level of stress, which does not exist under peace-time conditions. Technicians, on the other hand, do not deal with crises as unique events. In their strategic planning they do not plan a specific scenario for crises according to independent assessments of stable crisis conditions. Instead planning executed according to 'worst case'

scenarios which, according to them, will provide adequate contingency plans for any other eventualities. Technicians argue that in elaborating a force posture which would deter surprise attack, one also deters aggression during crises.

Behaviouralists disagree with this approach, maintaining that crises are unique events. One can argue that the behavioural approach is motivated by the desire to provide for the shortcomings of the technicians' definition of crisis stability. The behaviouralists' focus on crisis stability has led them to emphasize that certain measures adopted in peace-time may have negative effects upon crisis stability. Behaviouralists have, therefore, attempted to introduce and formulate measures of reassurance, such as Confidence-Building Measures and the Nuclear Risk Reduction Centres proposal. The ultimate objective of these reassurance measures is to reconstruct the type of decision-making existing in the optimal conditions of peace-time. [25]

It was enquired at the outset of this study, whether and for what reasons the concept of crisis stability has been unevenly treated by strategic analysts. It has been shown that, in fact, crisis stability has not received uneven treatment from the two groups of analysts we have studied. It would be more appropriate to say that strategic analysts have used the concept in different ways. These differences, however, are insufficiently deep and never fundamental enough to posit two opposing schools on the definition of crisis stability. The treatment of crisis stability although not homogeneous, has

not led to a reconsideration of nuclear deterrence, and its impact on international stability.

The differences between technicians and behaviouralists lie within a single broad approach. They may be perceived as the two ends of a continuum, with deterrers at one extreme and reassurers at the other. Both deterrers and reassurers share in common the desire to prevent war which may jeopardize the political and military independence of one's state, as elaborated in chapter four, and thus believe that states pursue aggressive actions because of perceived opportunities for relatively costless gain.

In fact, the debate between deterrers and reassurers focuses basically on method, to the detriment of the fundamentals. The two approaches differ on the way an actor can ensure that an adversary understands that a given value is core and thus fundamental to its existence. They notably agree, however, that hostility among states is inherent to international politics. As a result, "strategy [both deterrence and reassurance] is concerned with coercive attempts to promote or to repel change" [Groom, 1985: 142]. Both deterrers and reassurers share a common analytical focus, which emphasize the values which guide their analysis. These values derive importantly from the ethical considerations underlying their world view. These can be discussed in terms of the maintenance and preservation of the state with which the analysts are most proximately concerned.

The fourth chapter emphasized the commensurable nature of the technical and behavioural approaches. Discarding the methodological differences to focus on a shared vision of fundamentals, these two approaches can be integrated into a single paradigm of conflict management. In spite of appearances, it has been shown that the technical and the behavioural approaches do not lead to two independent theories of crisis management, but remain two different methodological approaches to conflict management, within which the various usages of crisis stability refer to differences of method among strategic analysts in their study of crisis management.

One can argue that the two approaches reinforce each other in the emergence of a crisis management theory, heavily dominated by the concept of deterrence. Crisis stability, inherent to this concept, is the product of nuclear exchange scenarios and survivability calculations. Crisis stability is, therefore, based on threat assessments which focus upon capabilities, rather than intentions. Although deterrers and reassurers voice minor differences on the issue, it appears that crisis stability derived from the nuclear balance, and the way force postures interact, leads potential adversaries to perceive their mutual vulnerability to nuclear destruction.

The thrust of both deterrence and reassurance thinking lies in the nuclear balance's ability to enhance self-deterrence among decision-makers facing a crisis, which can ultimately prevent that crisis from escalating into war. It seems, therefore, that only war can be prevented, whereas crises

cannot. It has been argued in support of this view that decision-makers will always be tempted to exploit perceived opportunities.

This argument, however, assumes that crisis management, as well as war prevention, heavily depend on these opportunities. Reassurance strategists have increasingly asserted that states not only act in response to opportunities, but may act out of domestic necessity. Consequently, reassurance measures should address the internal needs of states. By using these measures prior to the emergence of crises, one could avert the crisis generation process. Analysts have not, however, gone so far as to define what needs are to be met, or what measures are to be applied.

The new agenda remains very interesting and should induce further research. It correctly stresses the limits of deterrence threats. In the case of a state acting aggressively out of perceived internal necessity, a deterrent threat may simply reinforce its aggressive stance. Moreover, reassurance strategies though focusing on preventive war, still bring a new dimension to crisis stability. The motives underlying aggressiveness must be dealt with separately, according to their varied sources.

One may conclude on the issue of the policy relevance of both the deterrers' and reassurers' agendas. The two approaches assume that conflict can be managed. The method promoted by reassurers, however, becomes much more difficult to implement than that of deterrence theorists. Reassurance strategies attempt to address the aggressive behaviour which precipitates

crises. Their policy recommendations deal essentially with abstract concepts which are difficult to operationalize in terms of budgetary outlays. In contradistinction, the prescriptions of strategic deterrence theory translate relatively easily into governmental policy; which may account for the theoretical shortcomings of such policies as they are implemented.

NOTES

[1] Donald M. Snow in his text, Nuclear Strategy in a Dynamic World: American Policy in the 1980's, has best discussed the notion of 'worst case' thinking and its effect on policy planning. Witness Snow's discussion of the concept:

A pervasive phenomenon at all levels of military planning, worst-case analysis involves looking at all possible military (in our case strategic nuclear) situations, determining which of those exigencies is most dangerous to American security, and planning forces and strategies effectively to combat that worst case. In the process of planning for the worst possibility, there is the implicit assumption that the less dangerous possibilities will be dealt with as well [Snow, 1981: 11].

[2] The need for a broader categorization is generated by narrowness in the scope of the strategic studies literature. As such, the categorization must permit one to make a differentiation between strategic analysts that goes beyond the standard polemic of Hawks, Doves, and (now) Owls. Each category, however, must posit a sufficiently strong commonality in order to have any explanatory power.

[3] As cited by George, 1984a: 223.

[4] The entire MX missile basing mode debate illustrates the American preoccupation with the robustness of deterrence. The vulnerability issue which plagued the MX deployment, generated an enormous number of studies, both at the governmental and academic levels. A close look at some U.S. congressional hearings clearly demonstrates the American preoccupation with the vulnerability aspect of the MX, and whether the vulnerability would undercut the robustness of deterrence, given the fact that the problem made an I.C.B.M. retaliatory strike uncertain. Witness Secretary of Defense Harold Brown's preoccupation with the issue during a senatorial hearing:

It is clear, and I think I have, myself, asserted ever since 1977, that we are approaching and, I think, are now very close to the time when the Soviets can strike our land-based ICBM's with two reentry vehicles on each silo and reduce their surviving numbers to a very small percentage [...] Abandoning the ICBM force in the face of an increased Soviet threat to us would concede an important perceptual advantage to them and give a misleading dangerous signal [Sub-Committee of the Committee on Appropriations United States Senate, 1980: 23-24].

Rarely, did the MX debate raise the possibility that this weapon could be negatively perceived by the Soviets. The first strike capabilities of the missile were only emphasized in extra-governmental publications such as Herbert Scoville's, MX: Prescription for Disaster, and were quickly discarded by government officials.

[5] As noted by Spurgeon Keeny and Wolfgang Panofsky, 1980-81: 287-304. This article became a landmark in the security studies field. Analysts considered it to be the last stand of MAD supporters. A skeptical reading of this text reveals that in no way do the authors challenge the fundamental assumptions which characterize both MAD and the NUTS posture. Keeny and Panofsky simply argue that war-fighting strategies do not make the balance more robust. The bottom line in the Keeny/Panofsky argument holds that the physical world is one of Mutual Assured Destruction, and consequently, that any nuclear policy planning which departs from this reality engages itself in science fiction. Nowhere in this text do the authors cast doubt upon the worthiness of nuclear deterrence. The assured second strike approach is still the backbone of this article. Essentially, the article prescribes a return back to a 1960s type of deterrence, while ignoring the various theoretical questions which have surrounded deterrence theory over the past twenty years. This article is a good illustration of the type of debate which has characterized U.S. nuclear strategy. It clearly demonstrates that the U.S. debate has been barely able to go beyond the 'How much is enough' approach to deterrence. Most positions on the subject support a type of nuclear posture

(minimal deterrence, war-fighting, etc), but the balance concept has gone unchallenged.

[6] Under this view, a stable strategic environment posits a situation where all actors have no incentive to use war as a means of conducting foreign policy. Thus, of interest is Patrick Morgan's concept of 'general deterrence'. As posited by Morgan, "General deterrence [strategic stability] relates to opponents who maintain armed forces to regulate their relationship, even though neither is anywhere near mounting an attack" [Morgan, 1983: 30-31]. Therefore, when formulating strategic policy, leaders appear to follow a rationalization process predicated on general deterrence logic. As stipulated by Morgan, three characteristics highlight this logic, they are as follows:

- 1) Relations between opponents are such that leaders in at least one would consider resorting to force if the opportunity arose;

- 2) The other side, precisely because it believes the opponent would be willing to consider resort to force, maintains forces of its own and offers warnings to respond in kind to attempts to use force contrary to its interest;

- 3) The decision makers at whom the general deterrent threat is aimed do not go beyond preliminary consideration of resorting to force because of the expectation that such a policy would result in a corresponding resort to force of some sort by leaders of the opposing state [Morgan, 1983: 43-44].

[7] Liddell Hart, 1946: 30-32, cited by Freedman, 1981: 21.

[8] McNamara, 1966: 43, cited by Ball, 1983: 14.

[9] Anderson, 1980: C-7, cited by Ball, 1983: 19.

[10] It is interesting to observe how American policy planners reacted to the C³I vulnerability issue. In this regard, it is not coincidental that Nuclear Risk Reduction Centres proposals emerged in the midst of the C³I vulnerability awareness period. NERKS as they have been called thus provide decision-makers with a sense of control especially if an accidental nuclear launch was occur. Consequently, lobby for this initiative thus cumulated into an agreement between both superpowers [Borawski, 1987]. Yet, it is important to note that such centres are as vulnerable and subject to the same limitations which inhibit the proper execution of C³I operations [Williams, 1985]. Thus, NERKS may well foster a false sense of security.

[11] 'Beancounting' techniques have been the object of extreme criticism. Their quantitative focus which emphasize weaponry are not always a useful guide of adversarial intentions. Such techniques consist of assessing one's capability to execute hypothetical nuclear strikes under various conditions. While beancounting techniques have dominated the U.S. weaponry procurement debates, their inability to measure several type of uncertainties such as C³I vulnerability has caused some unease even among technicians. For two good discussions of these techniques see Boulden, 1987, and Hoguet, 1984.

[12] Robert Jervis recognizes the importance of pre-crisis interaction and their on impact decision-making when discussing the present strategic environment. He notes that the absence of reassurances in both superpowers' deterrence postures may further perceptions which are generated by worst case analyses. This theme is central to his argument opposing countervailing nuclear strategies [Jervis, 1984: 14-15].

[13] A number of characteristics exist that are common to most crises. This assumption is crucial if one wishes to generalize across geographic space and historical time. Most attempts to differentiate crisis from non-crisis periods have reiterated the Lebow characteristics in some form or another. see [Lebow, 1981; Brecher, 1980; Snyder and Diesing, 1977].

[14] Interestingly enough even Thomas C. Schelling (the technician par excellence) recognizes the importance of reassurance strategies. As such, Schelling indicates quite clearly that war can emerge out of a crisis, if the military postures of parties to the conflict favour offensive war plans.

Thus, this situation can occur due to the simple fact that parties to the event are subject, because of the environment, to ponder what he terms the "anxiety to strike first" [Schelling, 1984: 56]. The author acknowledges the importance of any measures which alleviate this anxiety. As stated by Schelling,

It goes without saying, but deserves to be reiterated nevertheless, that even more important than arrangements to facilitate reassurance in a crisis in which decisions have to be made in haste, is designing the weaponry itself so that the decisions are less preoccupied with the need for haste, and with the fear of the adversary's shared awareness that anxiety itself about each other's intentions and each other's anxiety can be the precipitant [Schelling, 1984: 65-66].

[15] Pierre Allan's conceptualization of 'referential time' is, however, particularly stimulating. Through the construction of a 'diplomatic time referent', Allan is able quite effectively to model the subjective compression of time during a crisis [Allan, 1983]. Yet, this notion of time compression promises to become more serious as more time sensitive technologies are deployed, and may thus justify the adoption of such strategies as Launch-on-Warning or Launch-Under-Attack.

[16] The complexity of planning for uncertainty, and the disjuncture between exercised war plans and physical realities may result in several ends. As such, in his study on the American Command and Control infrastructure, Paul Bracken has been led to believe that in a nuclear crisis scenario, the system could react in three probable ways: a) it could order a non-authorized launch; b) it could press political leaders to authorize a preemptive strike; and c) because of its untested complexity, it could fail to react at all [Bracken, 1983: 238-243].

[17] For an excellent example of a thorough discussion on threat perceptions and their impact on deterrent postures which gives way essentially to a modest set of policy prescriptions, see Allison, Carnesale, and Nye, 1985:

1-25; and 206-222. The above mentioned Owls have carefully collected thoughts which accurately demonstrate the difficulties and incoherence in the various approaches to deterrence. The major problem raised in this text lies in the fact that the agenda for avoiding nuclear war does not meet the enunciated difficulties. The agenda essentially prescribes prudential diplomacy. This call for prudence is inconsistent with the text, given the fact that they have noted that prudence tends to be a rare commodity in the nuclear era. Their solutions, therefore, fall short of answering the questions which were raised in the text. This inconsistency is also noticed by Mitchell Reiss, a professor at Columbia University. In his recent review of the text, Professor Reiss notes. "It is cold comfort, as Hawks, Doves, & Owls reminds us, that the continued avoidance of nuclear war will at heart turn on the wisdom of a few all-too-fallible individuals" [Reiss, 1986: 569].

[18] Despite harsh criticism of the concept of deterrence at the theoretical level, it remains an important tool of policy formulation. In this regard, the concept of conventional deterrence has been the centerpiece of Western negotiating positions in conventional armament arms control forums. The notion of conventional deterrence is likely to increase in salience with the dismantling of Intermediate range nuclear weapons in Europe. The uniqueness of conventional deterrence is best discussed in Mearsheimer, 1983: 23-30.

[19] This belief that decision-makers are generally sensible is discussed in Morgan, 1983. Yet, Morgan quite appropriately recognizes the limitation of this concept as he notes that certain environmental pressures may lead decision-makers to ponder actions which they would not have considered under normal circumstances. As such, 'subjective' rationality (or contextual rationality) could prevail over sensible decision-making.

[20] In the context of superpower relations the perception of the Soviet Union has been a determining factor in the technicians' debate of what constitute a credible deterrent threat. In this regard, it is particularly interesting to note that Sovietologists have been essentially absent from the strategic debate. A situation which can most likely account for the fact that technicians usually interpret Soviet military capabilities as intentions. For an interesting discussion on this point see MccGwire, 1985-86: 57.

[21] This view of crisis stability is analogous to Patrick Morgan's concept of immediate deterrence. The similarity of the latter notion to that of crisis stability as posited by reassurers is evident when one considers the four element typology which comprises the condition of immediate deterrence, this is

1. When, in a relationship between two hostile states the officials in at least one of them are seriously considering attacking the other or attacking some area of the world the other deems important.
2. Key officials of the state that is the target of the proposed attack must realize their condition.
3. The target state, realizing that an attack is a distinct possibility, must threaten the use of force in retaliation in an attempt to prevent the attack.
4. Leaders of the state planning to attack must decide to desist primarily because of the retaliatory threats of the opponent [Morgan, 1983: 33].

As such, there is a presumption in the four element typology which stipulates that decision-makers of both states understand their military vulnerability, and that such an understanding of one's position will encourage caution. In this regard, the aggressor can rest assured the backing down will not bring about punishment.

[22] Robert Jervis discusses at length the impact of prisoners' dilemma situations on international stability. The author argues that certain international circumstances which are empty of reassurance can lead decision-makers to believe that war is inevitable. Moreover, Jervis observes that these deadlock situations leave little hope for peaceful conflict resolutions [Jervis, 1978].

[23] CBMs and Nuclear Risk Reduction Centres have been the favoured reassurance measures of the strategic community. One could posit that their popularity lies in the fact that these initiatives are either quantifiable or procurable in the traditional way by which the defence establishment deals with instability, and that these measures can be operationalized without seriously inhibiting the daily activities of the military establishment. In this regard, the implementation of the Basic Principles Agreement of 1972 has been more difficult in that both the Soviet Union and the United States pledged to refrain from "efforts to obtain unilateral advantage at the expense of the other" [Blacker, and Duffy, 1984: 246]. - an activity which is intrinsically opposed to traditional military planning.

[24] The perceptual significance of the nuclear balance is the subject of much speculation. As such, more research on this issue is needed. Recent scholarship has highlighted the fact that the balance may not have had the anticipated effect on Soviet leadership in past crises [Betts, 1987; Sabin, 1987].

[25] Richard Ned Lebow and Janice Gross Stein's most recent paper attempts to go beyond this approach, as both authors demonstrate some pessimism with respect to the ability of states to manage crises, when they are rooted in 'needs-based' aggressiveness [see Lebow, and Stein, 1987].

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