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Panel 7 on the Defence Applications of Operational Research

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14. Abstract:
Panel 7 has sponsored this Symposium to provide security and defence analysts from NATO an opportunity to learn about the work of RSG.18 and exchange views concerning analytical treatment of military stability that is of utmost importance for security co-operation. The proceedings contains an executive summary, three session reports and 13 papers presented at the Symposium on Military Stability. The Symposium addresses way and means by which research and in particular operational research may contribute to creating a more militarily stable international security situation. The sessions covered the following areas related to different aspects of military stability: stability proposals and models to assess them & stability forecasting, international stability and ways to achieve it, and intranational stability.

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AC/243(Panel 7)TP/10

DEFENCE RESEARCH GROUP

PANEL 7 ON THE DEFENCE APPLICATIONS OF OPERATIONAL RESEARCH

Technical Proceedings of the Panel 7 Symposium on Military Stability

1. These are the proceedings of the Symposium on Military Stability held at NATO Headquarters, Brussels, on 12-14 June 1995.

2. Panel 7 sponsored this Symposium. It was directed by Mr. Torben Christensen, Chairman of AC/243(Panel 7/RSG.18).

3. The Executive Summary ("Yellow Pages") has been distributed under reference AC/243-N/462 dated 22 April 1996.

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NATO,
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TABLE OF CONTENTS

EXECUTIVE SUMMARY v

PROGRAMME x

THE VIRTUE OF NECESSITY: NATO' S QUEST FOR STABLE DEFENSE, 1949-1989
C. F. Ziemke 1

SESSION REPORT STABILITY PROPOSALS AND MODELS TO ASSESS THEM & STABILITY FORECASTING
R. Goad and R. C. Blues 13

MODELING FORCE REQUIREMENTS FOR PEACE SUPPORT OPERATIONS
P. N. Chouinard 19

STABLE STRUCTURES IN AN UNCERTAIN WORLD "DETERMINING ARMY STRUCTURES FOR THE FUTURE"
C. S. Grant 36

PROTECTING WEAK AND MEDIUM-STRENGTH STATES: ISSUES OF DETERRENCE, STABILITY, AND DECISION MAKING
P. K. Davis 44

NATO ADVANCED RESEARCH WORKSHOP STRATEGIC STABILITY IN THE POST-COLD WAR WORLD AND THE FUTURE OF NUCLEAR DISARMAMENT
M. L. Best, Jr., J Hughes-Wilson and A. A. Piontkowsky 73

DE DETECTION DES CRISES
J. C. Le Minh 122

SESSION REPORT INTERNATIONAL STABILITY AND WAYS TO ACHIEVE IT
M. G. Sovereign 145

COMBAT POTENTIALS AND OPERATIONAL PLANNING-PAST AND PRESENT
F. Stoeckli 149

INSPECTING THE FOUNDATIONS OF OFFENSE-DEFENSE THEORY: CAN THEY BEAR THE WEIGHT?
C. Glaser and C. Kaufmann 157

STABILITY IN THE POSTMODERN AGE: A CONCEPTUAL EXPLORATION
G. D. Foster 194

STABILITY DURING CONFLICT
J. Ketelle 195

IS "STABILITY" ALWAYS DESIRABLE? AND IF NOT, WHEN IS IT AND WHEN ISN'T IT?
H. H. Mey 196

SESSION REPORT INTRANATIONAL STABILITY
G. J. Miller 205

THE DANGER OF THE SHOE-HORN
D. F. Davis 209

RESOLVING THE WORST ETHNIC CONFLICTS POSSIBLE AND IMPOSSIBLE SOLUTIONS TO ETHNIC CIVIL WARS C. Kaufmann 241

EUROPE'S ARMIES TRAIN FOR PEACEKEEPING AND WAR
J. Mackinlay and J. Olsen 281

A DECISION-THEORETIC ANALYSIS OF PEACE SUPPORT STRATEGIES
R. K. Huber, K. Helling and G. Miller 293

ANNEX I LIST OF PARTICIPANTS AND PAPER AUTHORS

EXECUTIVE SUMMARY

i. The transformation of Europe from a relatively simple bipolar system into a complex multipolar one has resulted in a new international security situation. Therefore, the question was raised in Panel 7 on The Defence Applications of Operational Research of the NATO-Defence Research Group as to the applicability of operational research models for addressing the problems facing security policy and defence planners today. Following an exploratory inquiry, Panel 7 decided to establish Research Study Group (RSG) 18 on Stable Defence with the tasks of:

a) looking for methods and models for studying the question of how to achieve a stable military situation in a multipolar context;

b) producing a list of military factors that might enhance military stability.

ii. In June 1994, RSG.18 submitted its final report and presented its findings to Panel 7. The results were considered to be of interest beyond Panel 7 for a wider debate among analysts and decision makers concerned with security and defence issues in the new Europe. This is especially true since the work of RSG.18 represents but an initial effort of prototypical nature that requires further development and supporting research before the proposed approach may be regarded as mature enough for application. Therefore, Panel 7 decided to sponsor a symposium that is to provide security and defence analysts from NATO an opportunity to learn about the work of RSG.18 and exchange views concerning the analytical treatment of a subject that is of utmost importance for security co-operation in Europe and beyond.

iii. The purpose of the symposium is to discuss ways and means by which operational research may contribute to creating a more militarily stable international security situation. The symposium had the specific aims:

a) to explore views on military stability and its implications, and how this might be affected by non-military (political, economic, cultural, social, religious, ethnic) factors;

b) to contribute to the growth of consensus on definitions of military stability in a multipolar world and on operational stability criteria;

c) to discuss modelling approaches for stability analyses and the requisite validation efforts and data requirements;

d) to identify principal options and strategies for improving stability;

e) to explore methodologies for projecting stability trends, causes, and implications, both within and between states;

f) to develop an agenda for further research as a basis for complementary collaboration among institutions concerned with defence and security analyses.

iv. The symposium had six plenary sessions. Two sessions introduced the subject, three special sessions addressed various aspects related to the aims of the symposium, and the final session discussed the findings of the symposium and the way ahead.

v. The first plenary session featured three presentations: the keynote speech addressing the importance of stability analyses for the new Europe; a summary of stability risks and their causes in Central/Eastern Europe, the former USSR, and the Balkans; a historical review of ideas and initiatives for improving stability during the Cold War period and their relevance for today's situation. The second plenary session provided a summary presentation of the RSG.18 study. The three special sessions was organized as panels in which papers were presented and discussed. The three sessions covered the following topics: Stability proposals and models to assess them & Stability forecasting; International stability and ways to achieve it; Intra-stability. The final plenary session featured general discussion of sessions findings, and the implications for future research

vi. The session chairmen produced session reports. These reports provide the following general findings;

a) The aim of the sessions on "Stability proposals and models to assess them & Stability forecasting" was to provide a bridge between the findings of RSG.18 and the broader military and political context within which NATO could expect to operate in the future. In the future the alliance will work with new strategic concepts in a new strategic environment, requiring a broader approach to security and stability. This will require it to take account of political, economic, social and environmental factors as well as military considerations, and to place more emphasis on such things as conflict prevention, peace protection and crisis management In future the political objectives of the alliance will include: dissuasion, crisis containment, crisis de-escalation and buying time for diplomacy together with making military preparations to fight if all else failed. Hence conflict prevention is a major NATO objective.

b) The aim of the session on "International stability and ways to achieve it" was to address ways ahead for achieving international stability. In the session NATO's " 3 Part Strategy for Stability" was compared with the 3-step paradigm for military stability suggested by RSG.18. The NATO strategy, as expressed in NATO Review of May 1995, consists of: Enlargement of NATO, Partnership for peace and New NATO - Russia relationship. The RSG.18 Military Stability paradigm calls for the defender to assess the: Intentions of attackers, Risks to the attacker (Attackers risk aversion) and Probability of defeat of attackers. These are a

strikingly similar in portent which may validate the RSG.18 approach and indicate that is being adopted if only at an intuitive local by policy makers. The Enlargement of NATO must call for re-calculation of the stability of East-West relations. The balance in Europe may favours the West. However to give a security guarantee to nations close to Russia calls for an entirely new calculation based on much longer lines of communication and interoperability obstacles for an enlarged NATO. Even intuitively these difficulties in achieving step 3 of the paradigm lead to the "Partnerships for Peace" approach rather than immediate enlargement. A positive contribution to the improvement of the relationship of NATO and Russia by the operational research community to the state-of-mind of the Russian officer community would be to work with them on the stability theory as laid out in the symposium. This could be an opening that would encourage better perceptions on both sides, which we have seen are crucial to stability.

c) The aim of the session on "Intranational stability" was to deal with military stability within a nation. The demand for military operations designed to promote or restore intranational stability has increased dramatically since the end of the Cold War. Their potential scope has also grown to include such diverse activities as preventive deployment, humanitarian relief, and nation building, as well as traditional peacekeeping tasks, and more intense peace enforcement activities. These operations have come to be known collectively as peace support operations (PSO). It is generally understood that PSO are different in significant ways from the conventional warfighting situations for which military planners have traditionally prepared. Peacekeeping and peace enforcement cover a broad spectrum of mission intensities. These operations are generally governed by an imprecise "mandate" that is subject to change. Although engagements can occur, there is no enemy force, and armed forces are frequently not identifiable as such except when they are active. When engagements do occur, the rules of engagement differ from those for traditional warfighting situations. Furthermore, there is usually no clear line of contact between forces (whose movement in traditional warfighting situations is an important goal of both sides).

vii. The overall conclusions of the symposium can be summarised as follows:

a) It was confirmed that there is a wide audience for the work of RSG.18 and there is a need to promote the results of the RSG.18 work and of the Symposium to NATO and national authorities.

b) There is a need to consider other military components that might influence military stability than those considered in the RSG.18 study. Especially to look at air- and seapower and the presence of weapons of mass destruction.

c) There is a need to consider the influence of collective defence systems to multilateral military stability.

d) There is a need to consider military stability within a nation. Military operations designed to promote or restore intranational stability are of vital importance to the alliance.

e) There is a need to consider the dynamic aspect of stability and to explore stable transition processes.

The recommendations which follow from the symposium conclusions are of two different categories: those with respect to further Panel 7 sponsored research , and those for a wide dissemination of the RSG.18 work and of the Symposium.

i. It is recommended that Panel 7 considers to sponsor research with respect to:

a) a model development to describe the influence on stability by other types of force components. The work of RSG.18 has primarily be directed towards the land battle with the influence from air assets on the ground. Further model development could address a more completely description of air assets and sea power and could include the nuclear dimension.

b) a study to examine collective/multilateral defence options for stability. The RSG.18 work has demonstrated the importance of these defence options; but no detailed research has been performed. This could be of special interest in the NATO enlargement process and in follow-on conventional arms control talks.

c) a study to examine intranational stability concept. The military stability within a nation is of growing concern.

d) a study on the dynamics of the transition processes to improve the understanding of a controlled change to a militarily stable situation and between military stable situations.

e) a further hypotheses testing of military factors that might influence stability. The RSG.18 has tested but a subset of factors of interest to stability.

ii. It is recommended that Panel 7 considers a wider dissemination of the results of RSG.18 study and of the Symposium proceedings:

a) A horizontal publication of the results within the alliance and to the PfP nations are to be considered.

b) A vertical publication are to be considered as the RSG.18 study and the Symposium proceedings provide an analytical framework for military stability consideration to be of interest in NATO enlargement process , in a follow-on conventional arms control talk, and in the new NATO Russia relationship.

PROGRAMME

Opening Session

Welcome Remarks by Mr. P.R. Anderson, Chairman Panel 7
and Dr. T. Christensen, Symposium Director

Keynote Speech
General (Rtd) K. G. H. Hillingsø

Central- and Eatern Europe Defense Establishments in Transition - Risks to Stability
Dr. C. N. Donnelly

The virtue of necessity: NATO' s quest for stable defense, 1949-1989
Dr. C. F. Ziemke

Plenary Session on RSG.18 Study on Stable Defence

Overview and Approach
Dr. T. Christensen

Stability Hypotheses and Tests
Dr. S. D. Biddle

Multipolar Stability Modeling
Professor R. K. Huber

Conclusion
Dr. T. Christensen

Special Sessions on Stability proposals and models to assess them & Stability forecasting

Chairmen: Mr. R. Goad & Mr. R. C. Blues
Discussants: Dr. U. Chandan & Dr. C. Kaufmann

Modelling Force Requirements for Peace Operations
Dr. P. N. Chouinard

Stable structures in an uncertain world: "Determining army structures for the future"
Colonel C. S. Grant

Protecting Weak and Medium-Strength States: Issues of Deterrence, Stability, and Decision Making
Dr. P. K. Davis

A report on an analytical approach to "Strategic Stability In The Post-Cold War World And The Future Of Nuclear Disarmament"
Mr. M. L. Best, Jr.

Indicateur de crises
Mr. J. C. Le Minh

Special Session on International stability and ways to achieve it

Chairman: Prof. M. G. Sovereign
Discussant: Mr. D. W. Daniel

Combat Potentials and Operational Planning - Past and Present
Professor/Brigadier F. Stoeckli

Inspecting The Foundations of Offense-Defense Theory: Can They Bear the Weight
Professor C. L. Glaser

Stability in the Postmodern Age: A Conceptual Exploration
Professor G. D. Foster

Stability During Conflict
Mr. J. Ketelle

Is "Stability" Always Desirable?
And if Not, When Is it and When Isn't it?
Dr. H. H. Mey

Special Session Intranational Stability

Chairman: Dr. G. J. Miller
Discussant: Mr. G. J. Hawkins

The Danger of the Shoe-Horn
Dr. D. F. Davis

Resolving the Worst Ethnic Conflicts
Dr. C. Kaufmann

Training for peace support operations
Dr. J. McKinlay

A Decision-Theoretic Model for the Assessment of Peace Support Strategies
Dr. R. K. Huber & Dr. G. J. Miller

Final Session - Round Table Discussion
Chairman: Dr. S. B. Biddle

Closing Address
Mr. P.R. Anderson, Chairman Panel 7

THE VIRTUE OF NECESSITY: NATO' S QUEST FOR STABLE DEFENSE, 1949-1989

C. F. Ziemke

The international system that emerged in Europe following Germany's surrender in May 1945 contradicted everything the Western world believed it had learned about terminating wars and building power balances and lasting peace. Winston Churchill in 1955 summed up the schizoid nature of peace and stability in the Cold War era when he told the House of Commons that "It may well be that we shall by a process of sublime irony have reached a state in this story where safety will be the sturdy child of terror and survival the brother of annihilation."[1] Every other major war in modern European history had ended with a long, painstaking peace-building process, during which diplomats and statesmen met at peace conferences that commonly lasted for months, and sometimes years. At these convocations, the statesmen of Europe constructed sophisticated architectures of international relations that would, they hoped, ensure relative international tranquillity for future generations. The most successful of these built systems that were relatively stable and long-lived: the Peace of Westphalia that imposed order on the chaos that resulted from the religious wars of the early 17th century; the Congress of Vienna reconstructed the European balance-of-power after the upheaval of the Napoleonic Wars Others, most notably the Versailles Peace Conference of 1918-1919, fell tragically short of their goal of perpetual peace and deteriorated relatively quickly. Whatever the strengths and weaknesses of the systems that emerged from these peace-making exercises, it would never have occurred to a pre-World War II statesman that long-term political and military stability could emerge from a scenario in which a major, devastating war ended without any peace conference or even the signing of final peace accords between former belligerents, and with erstwhile alliance partners facing the very real prospect of falling into war among themselves.

But that is exactly what happened in the years after 1945. Nobody planned or designed the system that arose from the ashes of World War II. Instead, the Cold War balance of power emerged through a gradual process of the provisional becoming permanent. The military and political balance did not emerge from the fertile minds of politicians and diplomats but evolved out of the realities of military and political power left in the wake of a catastrophic war. In fact, few even talked for long of peace, but came quickly to speak instead of a "Cold War" — not open war, but a state of international relations far from true peace. As early as 1949, the world, and especially Europe, had settled into a state of affairs that seemed

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[1] Winston Churchill, in the House of Commons. March 1955. Quoted in Justin Wintle. *The Dictionary of War Quotations* (New York: Free Press. 1989). p 356.

on the surface impossibly unstable. The outlook for lasting peace was grim: the course of international relations presented little cause for optimism, and most serious observers believed that World War III loomed on the not-so-distant horizon. Yet despite its poor prospects this precarious peace survived and in so doing it proved more stable that any other than had preceded it. Even the vaunted century of peace that followed the Napoleonic Wars and the Congress of Vienna had been punctuated by several short, limited wars — most notably the wars of German unification. Yet, this precarious, haphazard peace achieved on an ad hoc basis much of what the architects of its predecessors sought through more sophisticated means. Through the four decades of the Cold War, no single nation gained clear strategic dominance on the European continent, all members of the two alliances survived through the period, there were no large-scale wars in Europe, and the system proved well-able to respond to crises in ways that precluded open conflict.

Several factors contributed to the unprecedented stability of the Cold War international system in Europe. Most basically, it succeeded because both the Western and Eastern alliances, despite their apparently irreconcilable ideological differences, had a vested interest in maintaining the status quo and over time developed no particular motivation to challenge it. Whatever the status of the East-West relationship, which ranged over the years from open animosity to cool cordiality, both sides continued to conduct their international policies according to the de facto rules that served to defuse crises and alleviate occasional stresses on the system.

The provisional origins of the Cold War balance also contributed directly to its long-term stability in several ways. First, where the 1919 treaty had excluded, for political reasons, two undeniable major European powers — defeated Germany and the Soviet Union — the Cold War system reflected the realities of military power at the war's end and proved flexible enough to adjust as those power relationships chanced. This factor was particularly important as both NATO and the Warsaw Pact struggled to reintegrate a divided Germany into the security balance during the 1950s. Second, because it was so transparent, the Cold War balance did not require for its continuation the skilful hands of deft statesmen. Nor did it depend on the system of shared values that had underlay the post-Napoleonic peace. In an era that produced no Metternichs or Bismarcks, the success of the system required only mature and responsible national leaders who could face crises, both internal and external, with measured caution and an eye toward the effect of events on the stability of the European system. Third, the bipolar system of alliances was straightforward: on both sides, the source of threat was clear and uncomplicated, and secondary sources of insecurity were insufficiently disturbing to unbalance the system. When differences arose within either of the alliances, the external danger inherent in deterioration of the alliance placed a premium on finding ways to compromise and defuse intra-alliance conflict.

As the Versailles Treaty proved, structures alone, no matter how sophisticated and morally just, are no guarantee of lasting peace. The final key to the stability of the Cold War international system lay in the behavior of the players involved in the NATO-Warsaw Pact game. The experiences of World War I and World War II had eliminated any lingering

European optimism concerning the possible benefits of resorting to war as a means to achieve reasonable political goals. The advent, spread, and rapid technological advancement of nuclear weapons compounded this general pessimism concerning the costs and benefits of war as a tool of international relations. If the horrors of conventional wars fought with twentieth century technology left any lingering conviction that war could achieve a reasonable balance between ends and means in anything other than a fight for national survival, the specter of nuclear conflict laid it to rest. The resulting reluctance of political and military leaders on both sides of the Iron Curtain to risk war and the determination to eliminate as far as possible those sources of instability that might trigger crises that could escalate to all-out war further enhanced Cold War stability. This Western determination to treat war as an extreme last resort left a clear imprint on the development of the North Atlantic Treaty Organization (NATO) and its character as a military alliance. The imperative to maximize military stability in response to a precarious peace and rapid technological and political change were the catalysts for NATO's creation and the templates for the development of NATO strategy and doctrine over the four decades of the Cold War.

It was by no means a forgone conclusion in 1945 that the United States would remain a permanent partner in Western Europe's defense. On the contrary, the United States showed every intention of fully demobilizing, disengaging entirely from the European continent, and returning to its former status as a hemispheric power. Nor were the Western European states giving much thought to permanent defense arrangements. With Germany safely defanged, the war-weary nations of Western Europe could turn their attention to healing their societies and rejuvenating their economies in the wake of a devastating war. Even had they recognized a potential threat, Western Europe's political leaders would have been loathe to ask their populations to make further economic sacrifices in order to divert resources to maintaining a large peacetime military establishment for the indefinite future.

By 1949 it became apparent that the Soviet Union had no intention of withdrawing from its positions in Eastern Europe and Germany and was, on the contrary, entrenching and bolstering its military presence in the region. NATO was born of the growing sense among the Western Europeans that the military balance was deteriorating toward a ratio that was highly unstable and that, absent a Western response, vastly increased the likelihood of another cataclysmic war. NATO's earliest strategies were little more than warmed-over, slightly updated versions of World War II strategy appropriated directly from the US Joint Chiefs of Staff. The first NATO/ JCS war plan, code-named HALFMOON, was based on the assumption that Western Europe could not be defended in a general war. It emphasized, instead, a strategic nuclear bombing campaign against the Soviet Union to soften Soviet forces for the eventual re-invasion and re-liberation of Europe. The only defensive stand on the ground would be an effort to hold air bases and oil facilities in the Middle East and North

Africa, where the Soviets had no significant force presence.[2] OFFTACKLE, the second iteration of NATO defensive strategy, was slightly more optimistic, holding out the hope that NATO forces could halt a Soviet invasion at the Rhine, but it too assumed a long attrition campaign, backed by nuclear bombardment of the Soviet Union, to recapture Western Germany. From these beginnings, NATO based all of its future defensive strategies on two fundamental assumptions: first, that the Soviet Union harbored aggressive. expansionist intentions against Western Europe and, second. that the Warsaw Pact would enjoy a considerable quantitative advantage over NATO's forces in the region for the foreseeable future.

A series of crises in 1949 and 1950 — the fall of China, the Berlin Blockade, the first explosion of a Soviet atomic device, the Korean War, anxiety that the Soviet Union might have plans to invade Western Europe during the Korean conflict — triggered the drafting of the first original NATO strategy expounded in MC 14/1.[3] The new strategy was based on the increasingly pessimistic, circumspect view of the world that was most bluntly expressed in the United States' National Security Council Memorandum NSC-68. The cornerstone of NATO defensive strategy from the very beginning was reliance on the US nuclear deterrent, which given the American advantage in intercontinental delivery systems that continued into the late 1 950s, still provided a credible deterrent even after the Soviet Union developed its own atomic capability. In the event that deterrence failed, MC 14/1 called for a defensive stand at the Rhine backed by a US strategic bombing campaign against the Soviet Union. The new strategy necessitated a significant commitment on the part of alliance members to rebuild and modernize their conventional capabilities, a significant fiscal challenge for states still struggling to rebuild their economies after World War II. Still, it was a commitment to which NATO members saw no realistic alternative were there to be any hope of establishing a more stable military balance in a period of almost constant crisis.

With the end of the Korean War and the gradual acceptance of the post-War status quo — a divided Germany. a Soviet occupied Eastern Europe, no formal peace agreements — the general mood of alarm subsided and NATO strategy followed the Eisenhower administration's lead, entering an era of heavy reliance on nuclear deterrent as the guarantor of peace and stability in Europe. In 1957 with MC 14/2, NATO formally introduced the concept of nuclear war-fighting into its defensive strategy. NATO drafted its own "New Look" strategy, MC 14/2, which backed away from the earlier NATO commitment to rebuilding conventional forces. Should the nuclear deterrent fail, NATO was now committed to employing nuclear weapons and forces in response to any threat. The new strategy

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[2] Allan R. Millett and Peter Maslowski. *For the Common Defense: A Military History of the United States of America* (New York: Free Press. 1984), pp. 477-478.

[3] For a painstakingly researched and thorough history, of the NATO during the Cold War. see Richard Kugler. *Commitment to Purpose. How Alliance Partnership Won the Cold War* (Santa Monica, California: The RAND Corporation. 1993).

unambiguously extended the US nuclear deterrent to Europe since it forced the United States to share the risks of escalation and pledged to station significant US forces on the ground. The US restructured its military forces, especially the Army forces that would fight in Germany, around the concept of nuclear war-fighting. Its tactical air forces became almost exclusively nuclearized, and the "Pentomic Army" was completely restructured to facilitate the dispersion of forces that was believed to be necessary on the nuclear battlefield.[4] Significant technological advances in tactical nuclear weapons and delivery systems made this shift to an almost exclusively nuclear defensive strategy possible. The continuing Western advantage in long-range delivery systems made it viable and essentially stabilizing.

The confidence that underlay the Massive Retaliation, MC 14\2 strategy was crushed in 1957 when the Soviet Union launched its first sputnik satellite: a harbinger of the end of the insularity of the continental US that had underlay the credibility of its nuclear guarantees for Western Europe. Moreover, it raised the specter of Soviet preemptive, counterforce strikes against US air bases that had previously been outside the reach of Soviet air forces. The crisis also undermined NATO cohesiveness, prompting France to accelerate development of its independent nuclear deterrent, the *force de frappe*, which French President Charles de Gaulle believed would shore up the credibility of the nuclear deterrent. By 1960, it was apparent that NATO's over-reliance on the strategic nuclear deterrent had become too risky and destabilizing. Beginning in the late 1950s, the United States and the NATO allies had begun gradually to rebuild their conventional capabilities and were slowly closing the numerical gap with the Soviet/Warsaw Pact force so that by 1960 the Soviet advantage had declined to 3: I from its 1949 high of 5: 1. Full German membership in NATO and its gradual rearmament and integration into NATO defensive strategy picked up much of the slack, but in 1960 Germany's contribution was more potential than real. Moreover, German membership in the alliance introduced a new complication into NATO defensive strategy: NATO could no longer plan to trade space for time and had to move its defensive line forward from the geographically defensible Rhine to the politically justifiable inter-German border. This despite the fact that war games and military exercises like CARTE BLANCHE in 1955 indicated that a NATO forward defensive stand would virtually destroy Germany. The 1962 Berlin crisis highlighted the limitations of Western conventional rearmament, and the unreadiness of NATO forces became another potentially destabilizing weakness. The inability of NATO's forces to hold the line at the inter-German border and stand up to superior Soviet capabilities dramatically increased the risk of rapid escalation to nuclear war. An already daunting defensive challenge was heightened with France's withdrawal from NATO's integrated military organization in 1966, a step that robbed NATO of crucial rear-area air bases and dramatically reduced its logistical depth.

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[4] A. J Bacevich, *The Pentomic Era* (Washington, DC: National Defense University Press 1986).

Over the next few years, NATO strategy gradually followed the US lead in emphasizing the development of greater flexibility at all levels of conflict in the hope of enhancing stability through improving NATO's ability to respond conventionally to Soviet aggression. What eventually became the strategy of "Flexible Response" held two particular advantages: first, it reduced Soviet confidence that it could achieve a rapid conventional victory, and second, it reduced the risk that NATO, faced with the prospect of a Soviet conventional victory, would have to choose between certain defeat and rapid escalation to nuclear conflict. The NATO allies were slow to buy into Flexible Response, believing it signaled a flagging American will to risk nuclear war to defend Europe. Nonetheless, it became essentially became a fait accompli once the German's endorsed it in exchange for NATO's official commitment in 1963 to forward defense at the inter-German border. Flexible Response was codified into official NATO strategy with the adoption in 1967 of MC 14/3, entitled "A strategic concept based on Flexible Response." MC 14/3 continued to recognize the importance of the nuclear deterrent, but also acknowledged the new reality of mutual deterrence: continuation of the race to maintain nuclear superiority would be prohibitively expensive and rough nuclear parity might actually enhanced stability by facilitating political accommodation with the Soviet Union -an option that had increasing appeal to the European members of NATO.

The basic concept of MC 14/3 consisted of a continued nuclear deterrent backed by a conventional deterrent to enhance its credibility. A major US force presence on the ground served to keep the Americans engaged. Improvements in conventional capabilities throughout the NATO alliance, along with the introduction of large and capable German forces, would enhance stability and provide greater escalation control. To be sure, programs to increase and modernize NATO conventional forces would be seen by the Soviets as a sign of aggressive intent, but the architects of MC 14/3 were confident that the trade-off between stability — which might decrease somewhat as Soviet insecurity increased — and escalation control was well worth the risk. To the extent that Massive Retaliation achieved some of its stabilizing effect through its simplicity, the new NATO strategy also made trade-offs; but by the early 1 960s it was clear that the old strategy did not reflect military and strategic realities in the era of nuclear parity. With the advent of Flexible Response, NATO defensive stability relied on a deterrent based on forces and threats that were considerably more credible and which faced up to the reality that the Western alliance needed to be prepared to fight a war if it hoped to control escalation. While the Soviets might question US willingness to risk all-out nuclear war to defend Western Europe, they could entertain less doubt that the US and its European allies possessed the will to launch a conventional defense of Europe. In short, the new strategy answered everyone's concerns within NATO: the United States gained the strategic flexibility it sought while the European allies continued to enjoy the nuclear insurance that they hoped would spare Europe another devastating war on the ground.

The 1970s proved to be a period of relative strategic stagnation within the NATO alliance as détente. US preoccupation with Vietnam, and political upheaval in Western Europe diverted attention and resources from the alliance-wide conventional military build-up that began in the 1960s. Flexible response had given NATO a strategy based on a fluid, mobile

forward defense, but one in which forces were arrayed in depth according to what was known as the "layer cake" philosophy that allowed NATO forces to react to localized Warsaw Pact breakthroughs with flanking fires and maneuvers. This was a strategic array that enhance stability by both increasing NATO's sense that it could stop Soviet penetration before it overran Western Europe and undermining Soviet confidence that it could achieve the quick victory upon which its strategy was based. By the mid 1970s, however, the deterioration of force levels and capabilities had led to a reorientation of the defensive strategy to an unyielding, but shallow "active defense" that traded maneuver for attrition. The active-defense concept better fit NATO capabilities at the time, but it involved a considerable sacrifice of defensive stability. Given that the political situation was relatively calm and the chance of war low, the "active defense" concept may have been worth the risk, but it marked a potential return to the strategic instability and anxiety of the late 1 940s. It was an all or nothing strategy: if NATO forces could not hold the line at the inter-German border, the risk of rapid escalation was extremely high, and the fragility of NATO defensive forces made the incentive (if not the intent) for a Soviet invasion greater. Moreover, throughout the 1 970s, the Soviets had been beefing up Warsaw Pact forces and modernizing their capabilities. By the end of the decade, they had, it appeared, come perilously close to closing the gap in quality of technology that had been one of NATO's few clear advantages.

Beginning with the Soviet invasion of Afghanistan in 1979, NATO-Warsaw Pact relations took a dramatic turn for the worse and continued to deteriorate through the early 1 980s. As the climate of East-West relations deteriorated. the attrition-based active-defense strategy came under increasing attack: its shallowness and fragility was potentially destabilizing, and its attrition strategy had, some critics charged, caused NATO strategy and military commanders to think solely in local, tactical terms, losing sight completely of the operational level of war.[5] As the political environment became more turbulent and the resources for military modernization loosened up a bit, NATO planners began once again to rethink defense in response to calls for a more comprehensive strategy that took in the entire theater of war. While there was general agreement that NATO needed to revamp its defensive strategy and revitalize its capabilities both quantitatively and qualitatively, the debate over how best to do that was lusty. The Stable Defense Debate of the 1 980s centered on three basic defensive concepts: Role Specialization, Mobile Defense, and Defensive Defense.[6]

Advocates of Role Specialization argued that NATO could more efficiently employ scarce resources by abandoning its commitment to maintaining an integrated NATO force. Instead, military areas of responsibility would be assigned by country. West Europeans, under this scheme. would take over primary responsibility for continental defense while the US

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[5] See, for example, Jeffrey Record. *Revising US Military Strategy*: Tailoring Ends to Means (Washington, DC: Pergamon-Brassey's. 1986).

[6] Kugler, *op. cit.*, pp. 404-406.

concentrated its efforts primarily on maritime missions and maintained its strategic deterrent. The concept never really gained much of a constituency: the Europeans feared it would lead the US to disengage completely from the continent, the US was concerned that the Europeans would bow to domestic political pressure back off their commitment to maintaining nuclear war-fighting capabilities, and analysts on both sides of the Atlantic feared some missions would drop out of the picture entirely. It did, however, strike a chord with some American politicians and pundits who believed the European allies were not carrying a fair share of the burden of their defense.

The concept of Mobile Defense argued that forward defense as it was presently conceived was too shallow, brittle, and potentially destabilizing. They advocated a new approach in which NATO would abandon rigid forward defense and deploy its conventional forces in-depth, allowing them the flexibility to counterattack advancing Warsaw Pact forces that broke through the first echelon. Mobile Defense, its advocates argued, would serve as a force equalizer by allowing numerically smaller NATO forces to disrupt a breakthrough by a superior Warsaw Pact force. As had the earliest NATO strategies, it would trade space for time and allow NATO forces to react and seize the initiative over the longer-term while reducing the risk that a crippling enemy breakthrough in a bloody attrition battle at the inter-German border might end a NATO defense before it started. Mobile Defense faced several insurmountable political and military challenges. First, the West German government had repeatedly expressed its unwillingness to sign-on to any NATO strategy that assumed sacrifice of Germany territory and, by implication. ran the risk of turning West Germany into the battlefield for World War III. Second, critics of the military viability of the concept pointed out that such strategies have in the past succeeded primarily when a force at a numerical disadvantage faced an opponent with a dramatic qualitative deficit. faced less adept opponents. To be sure, NATO was a smaller and skilled force, but its qualitative advantage — if it had even been sufficient to guarantee success of such a strategy — had dwindled as a result of relentless Soviet force modernization through the 1970s. Finally, NATO's coalition character was ideally suited to forward defense, while mobile defense basically pitted NATO weaknesses against the Warsaw Pact's greatest strength: its facility for mobile operations.

Proponents of Defensive-Defense argued that stability would best be enhanced by a NATO strategy that eliminated all overtly offensive capabilities, and instead raised the nuclear threshold by strengthening conventional defenses. The defensive-defense school held that all offensive capabilities were inherently destabilizing, particularly offensive air power which, absent a leak-proof air defense system, invited preemptive strikes. A NATO strategy based on defensive-defense would give up tanks, armored fighting vehicles, and self-propelled artillery while increasing levels of infantry, anti-tank defenses, and immobile artillery. Those capabilities would be backed up by a well-developed network of stabile defensive assets: trenches, mines, concrete and other barrier defenses, and German territorial defense forces to bolster NATO forces and provide defensive depth on the ground. Defensive-defense held great appeal for the anti-nuclear and leftist factions in European politics, but it met with considerable opposition among mainstream political leaders, particularly in Germany. The Germans were reluctant to accept the presence of fixed fortifications, concerned that to do so

would imply acceptance of the permanent division of Germany. Nor were the Germans eager to absorb the considerable cost of expanding the Federal Republic's territorial defense forces. The idea also invited uncomfortable comparisons with the Maginot Line and seemed too risky and, perhaps, less stabilizing that it appeared at first glance. The idea of purely defensive forces, if indeed such a thing was possible, might have some stability benefits; but in the event that defensive-defense failed to hold at the inter-German border, a force so constituted would have no mobility or flexibility and would face little choice but to escalate to nuclear war or accept defeat.

When the dust settled, NATO made the decision to retain its existing strategy of flexible forward defense, but take steps to improve its agility, durability and combat power. The Germans advocated development of the concept of agile defense, which would improve NATO's ability to contain local breakthroughs and frustrate Soviet blitzkrieg operations. The US also sought a more operationally responsive doctrine, but leaned more toward emphasis on enhanced firepower and increased lethality that would maximize the dramatic technological advances in conventional military capabilities that had occurred since the late-1960s.[7] The end result was a revised NATO strategy that incorporated elements of both approaches, enhancing stability by making NATO forces overall less vulnerable to Soviet breakthroughs and better able to counter their highly mobile, blitzkrieg tactics.

The development of the AirLand Battle concept in the US army also became an important element of the revamped NATO stable defense strategy. AirLand Battle put much greater emphasis than ever before on the idea of orchestrating war in three dimensions to create an integrated operational strategy. In the AirLand Battle concept, air forces would provide a defensive umbrella for ground operations, affording maximum freedom and flexibility on the battlefield. Another element of NATO's revamped strategy was the introduction of Follow-on Forces Attack, better known as FOFA. according to which offensive air power would attack Warsaw Pact forces in rear areas in an effort to both deny them operational flexibility and degrade their reserves and reinforcements. FOFA marked an important philosophical departure for NATO defensive strategy: for the first time, NATO commanders openly acknowledged the willingness and intention to conduct major operations, on the ground if necessary, east of the inter-German border. The Soviets and some Western strategists charged that FOFA signaled NATO's aggressive intent and was, hence, inherently destabilizing. Others, most notably denizens of the technophobe military reform movement in the US, charged that implementation of FOFA's full range of technology would be fiscally and, perhaps, technically impossible. In the end, NATO military planners concluded that even partial realization of FOFA's potential would enhance NATO's defensive prospects. By the mid-1980s, FOFA was firmly entrenched in NATO military plans. By the late 1 980s, the new

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[7] For a discussion of the US military renaissance of the early 1980s, see the author's "Rethinking the Mistakes of the past: History's message to the Clinton Defense Department." *The Washington Quarterly*, Spring 1993.

strategy was in place and NATO forces were building toward robust, modern capabilities. Ironically, it would be in the deserts of Iraq rather than the plains of Central Europe that the product of thirty years of evolution would meet its first real operational test.

In looking at the evolution of NATO strategies for stable defense over the course of the Cold War, several themes emerge. The first is the impact of political concerns on the evolution of the opposing alliances and their military capabilities. While at times highly troublesome, NATO's coalition character probably afforded it a long-term advantage over the Soviet-dominated Warsaw Pact and contained the seeds of its ultimate victory in the Cold War. Where all important strategic and military decisions for the Warsaw Pact were basically made in Moscow, NATO constantly struggled with a delicate balancing act among domestic political concerns, internal alliance relations, and external political circumstances. As a result, while the Soviet Union pursued a steady increase in its defense expenditures over the entire period, NATO was able to slow, stop, or ratchet up its spending and force modernization in response to changes in the international and domestic political environments. At the time, this looked to most observers like a serious disadvantage because it meant NATO consistently had to settle for what looked like a sub-optimum, compromise solutions that never freed it of a nagging sense of strategic insecurity. In the end, however, the Soviet Union's allocation of resources bankrupted its system, cost it its empire, and never gave it the unambiguous military advantage over NATO that it sought. If the objective of stable defense is ultimately to achieve desired political objectives while minimizing the risk of war, then NATO strategy succeeded, by hook or by crook: the Soviets remained sufficiently insecure to maintain a crippling level of defense spending, they never felt sufficiently confident of easy victory to launch an invasion of Western Europe, but neither did they ever see NATO strategic adjustments, modernization, or force increases as sufficiently threatening to prompt a preemptive reaction.

A related theme was the fundamental difference between the NATO and Soviet views of conventional warfare. Throughout the Cold War, the Soviets adhered to the view that offense was the best form of defense. Hence, they refused to consider nuclear and conventional strategies separately and they relentlessly pursued overall military superiority in every form of military capability in order to retain complete freedom of action. NATO, in contrast, was politically and philosophically wedded to a defensive strategy. Its military planners understood that its fundamental nature as a coalition of independent democratic states meant that it was pointless to hope that the resources necessary to match the Soviet capabilities on a one-to-one basis would ever become available. Hence, the best NATO strategy could do was reduce the chances of war by convincing the Soviet Union that the cost of aggression would be unacceptably high. NATO sought stability through a strategic approach that aimed not at victory but at denial: to create a force and strategy that planted enough doubt in the minds of Soviet leadership concerning the odds of easy victory to make an offensive appear unacceptably risky. The creation of a purely defensive strategy and capability involved an unacceptable risk for NATO, but military planners succeeded in improving NATO's defensive capabilities over time in ways and to degrees that, while somewhat destabilizing, were not viewed as unacceptably provocative from the other side.

Another key theme in the evolution of stable defensive strategy in NATO is the impact of technological change. Prior to the Cold War, the conventional wisdom indicated that advances in military technology. while desirable and perhaps unavoidable, were also inherently destabilizing. The advent of nuclear weapons heightened this concern, leading many strategists to conclude that stability was an illusion, and some form of nuclear war was inevitable. General Bruce Holloway summed up this view when he said in 1983 that "I don't think there'll be an Armageddon War, but I'll put it this way. There has never been any weapon yet invented or perfected that hasn't been used."[8] It may turn out, in hindsight that historian John Lewis Gaddis was closer to the mark when he argued, in 1988, that advancing technology — especially nuclear weapons — enhanced rather than undermined stability. The presence of nuclear weapons on both sides of the Cold War confrontation raised the stakes of war to what proved to be an unacceptable level. But the military-technical revolution reached much farther, contributing more directly to stability through such developments as the reconnaissance revolution that allowed both sides to evaluate the other's capabilities to a historically unprecedented degree and virtually eliminated the sorts of miscalculations of relative military advantage — reaction to Russia's partial mobilization in August 1914, Hitler's overestimation of Germany's capabilities, the Arab states' miscalculation of their ability to defeat Israel -that contributed to the outbreak of wars in the past. One of the most important lessons of the Cold War may turn out to be that transparency directly enhanced stability perhaps more than any other single factor.[9]

Finally, several constants in the behavior of both sides of the Cold War balance contributed to the long term stability of the system. In national and alliance strategies, neither side directly challenged the interests of the other. Still, the system allowed both sides to exercise their political power and flex their military muscle, so long as they did so at the margins. When vital interests were at stake, both NATO and the Warsaw Pact backed away from confrontation, as did the US and the Soviet Union. Hence, NATO refrained from capitalizing on or interfering with the Hungarian and Czech uprisings of the 1950s; the Soviets backed down in the Cuban Missiles Crisis when the Kennedy administration demonstrated its determination to go to the brink; both the Soviets and Americans took pains to conduct their peripheral wars in such a manner as to avoid direct military contact between their forces.

Perhaps the most important contribution to the stability of the Cold War system was, in the end, the willingness of policymakers and military planners to tolerate and defend the peculiarities of the system, many of which ran counter to strategic and common sense. The Cold War balance, while in the end stable, was riddled with awkward, illogical, and

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[8] General Bruce Holloway, in Michael Parfitt, *The Boys Behind the Bombs*, quoted in Wintle. *op cit.*. p. 358.

[9] John Lewis Gaddis, *The Long Peace.* (New York: Oxford University Press, 1988).

apparently unstable circumstances. After an initial period in which the participants, particularly the Soviets, tried to force a revision of the provisional post-war boundaries of Central Europe, both sides resigned themselves to working around the anomalies of the system in the interest of predictability and stability. In the end, what those who struggle with maintaining military stability in the post-Cold War era will come to miss the most is that predictability.

SESSION REPORT
STABILITY PROPOSALS AND MODELS TO ASSESS THEM & STABILITY FORECASTING[1]

R. Goad and R. C. Blues

The aim of the sessions was to provide a bridge between the findings of RSG.18 and the broader military and political context within which NATO could expect to operate in the future. In the future the alliance will work with new strategic concepts in a new strategic environment, requiring a broader approach to security and stability. This will require it to take account of political, economic, social and environmental factors as well as military considerations, and to place more emphasis on such things as conflict prevention, peace protection and crisis management.

In future the political objectives of the alliance will include

- dissuasion
- crisis containment
- crisis de-escalation
- buying time for diplomacy

together with making military preparations to fight if all else failed. Hence conflict prevention is a major NATO objective.

(1) MODELLING FORCE REQUIREMENT FOR PEACE OPERATIONS - DR. P N CHOUINARD

This paper described an initial study towards the development of methods for identifying the forces required for peace operations. The study had classified peace operation types and the situations in which they might be undertaken, and taken the first steps toward modelling the various operation types

The question was raised whether it is possible to classify the spectrum of operations using only the two dimensions (tension and level of order) described in the paper, or whether more parameters will be needed if work is to progress. It was agreed that there could well be

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[1] Discussants: U. Chandan & C. Kaufmann; Rapporteur: N. Ferguson

other dimensions of classification - e.g. whether the participants were organised states or not, and the scale of forces on the two sides (whether these were thousands or tens of men). Also, the operation types were not really discrete, but rather a continuum - for instance, the Bosnian conflict did not fit naturally with a single type. However, to make progress it was necessary to start from simplicity and to understand the archetypes before moving on to mixed situations.

The paper proposed a mixed top down/bottom up approach, where the objectives identified top-down are broken bottom-up into smaller elements. The question was raised whether there a risk in this approach of losing sight of interdependencies. Also, Operations other than War (OOTW) have a high degree of randomness, and participants suggested that is important to be able to carry out risk analysis to identify the probability of meeting the objectives of a given operation with given resources.

It was agreed that there would inevitably be interactions - e.g. between opportunity and motives for action. The approach should aim to use qualitative analysis to identify the primary objectives of participants in conflicts, but would need to bring in secondary objectives at a later stage to determine force packages; one of these secondary objectives would be force security.

A number of participants argued that, in OOTW, success is not only, or even primarily, dependent on military force; it is also strongly dependent on successful diplomatic activity. Hence the OA community should look at how diplomats and politicians do their business. Dr. Miller had done work on tools to assist participants in this type of activity; the community should see what more could be done to help them.

It was pointed out that a critical aspect of peace operations was the mandate given to the force, and mandates were often vague (as in the definition of "safe havens" in Bosnia), or fundamentally infeasible (as in the UN operation in Lebanon). It was important to have good criteria for the success of an operation.

Participants argued that, in addition to force planning, models were needed to support policy decisions, such as whether a given operation should be undertaken at all. Such operations were often undertaken at short notice; support was needed for judgements about what should be undertaken, and in justifying to the public why some operations should not be done. It was agreed that this was very important.

A question was raised about the utility of this approach for planning forces for future operations; it was argued that the force requirements were highly scenario-dependent. Also, if NATO had forces planned for high-intensity operations, would not these be adequate as a source for forces for peace operations?

It was agreed that scenarios were needed - this was in fact part of the bottom-up approach. However, it was argued that, compared to high-intensity warfare, peace operations involve a much wider range of scenarios and activities; hence the first step in determining

force requirements was to form a view on this range. Only then could one say whether all the force requirements could be met from forces planned for high-intensity operations.

(2) DETERMINING ARMY STRUCTURES FOR THE FUTURE - COL CS GRANT

This paper described work being undertaken in the UK on the planning of future force structures for the British Army, and the role of Operational Analysis in this process. It emphasised the role of historical analysis, and also the need for a suite of models of OOTW and measures of effectiveness of OOTW capability.

It was argued by participants that, in the development of model suites to support a planning process such as this, it was important to maintain a balance between an attractive user front end and useful model content; in the past, too much emphasis had often been given to the front end.

The paper asserted that, if forces were structured to meet the most demanding operation type expected, then they should be capable of dealing with all contingencies. This might be true of force size, but the question was raised whether it necessarily true of force composition, given that the support requirements of OOTW might be quite different. In reply, it was said that, for an all-regular army such as the UK's, troops can be taken from their specialist arm and quickly retrained for e.g. an infantry role - as was shown by experience in Northern Ireland. The same may not be true for all nations - e.g. those with conscript forces.

A dilemma was identified in planning UK force structure and doctrine between requirements for national operations and those for participation in multinational operations. It was agreed that this was a fundamental issue, but experience suggested that army-to-army staff talks provided major benefits in harmonising understanding and doctrine for e.g. peace operations. However, there was a need to ensure that the force structure was robust enough to support future alliances. Interoperability - e.g. of communications and of ammunition types - was a very important consideration here.

(3) ON THE BEHAVIOUR OF LEADERS IN CRISIS - DR. P K DAVIS

This paper considered a major problem in the maintaining international stability in the future that protecting a weaker state is not usually considered a vital national interest of stronger states, who therefore may not be ready to take adequate measures in a crisis; historically, conventional deterrence has failed as often as it has succeeded. Methods of improving the likelihood of success include "operational" arms control measures (e.g. reducing readiness of forces), "tripwire" deployments and the use of punishment options such as sanctions against aggressors. However, the presence of nuclear weapons in a conflict greatly complicates matters.

In the subsequent discussions a number of recent findings in the social-science literature relevant to the theme of the paper were identified:

(1) a recent statistical analysis of 50 cases of conventional deterrence found that

- the presence or absence of signalling had no effect
- formal alliances had a negative effect
- trade had a slight positive effect
- the *global* military balance had a small positive effect
- the *local* military balance had the most important effect

(2) a recent study of 40 cases of the use of air power for coercion found that no variant of a punishment strategy was effective. However, military *denial* strategies are effective - a country will give up territory if it believes it will lose it in any case. This can be used to explain the behaviour of Saddam Hussein during the Gulf War.

(3) there is much in the literature on decision-maker bias and attitude to risk. Bias can be divided into cognitive bias (people see what they *expect* to see) and motivational bias (they see what they *want* to see). Attitudes to risk depend on whether people (or states) see themselves in a situation where they are gaining (when they are risk-averse) or losing (in which case they are risk-seeking). Thus states which see themselves as falling in the international system will be more willing to take risks than those which see themselves as rising.

(4) work on so-called "crazy states" and "crazy leaders" suggests that there is no such thing as a "crazy state" - states differ in their aims, preferences and perceptions, but in general all behave equally rationally in pursuing their aims

(5) work on revolutionary states suggests two reasons why they are so often in conflict with their neighbours

- they pose a genuine security problem, since they may want to export their revolution, and the neighbours may want to suppress it
- their leaders reached power as agitators, and do not know how to manage relations with their neighbours

(4) AN ANALYTICAL APPROACH TO STRATEGIC STABILITY IN THE POST-COLD WAR WORLD AND THE FUTURE OF NUCLEAR DISARMAMENT- MR. ML BEST, JR

This paper described the findings of a NATO Advanced Research Workshop on methods of measuring and improving the level of nuclear strategic stability. It identified a "region of stability", including different area in which Mutually Assured Protection (MAP) and Mutually Assured Destruction (MAD) respectively applied.

It was strongly argued by participants that MAP was a very bad idea, since

- if it works it makes the world safe for conventional war - if it had been present during the Cold War it would have allowed the Soviet Union to overrun Western Europe.
- under MAP, the Ballistic Missile Defence systems would themselves be the targets for a wide variety of forms of conventional attack, and the first side to achieve significant damage to its opponent's system would be compelled to launch a first strike to take advantage of this window of opportunity.

Against this it was asserted that the argument was probably valid under a confrontational strategic paradigm, but the future holds the opportunity of conducting international relations under a cooperative paradigm. Peace does not have to be governed by confrontation.

The question was raised whether it was necessary for all states to participate in a cooperative system for the system to be stable; earlier work on conventional deterrence had shown that for some systems of this type, if a large enough group of states participated, it was better for others to join than to remain outside.

It was stated that that for the situation considered in the seminar, if a major nation withdrew, and there were no sanctions against it, then collective security collapsed and other nations would tend to withdraw. However, the system could survive withdrawals by minor nations.

There was some discussion of the links between this paper and the RSG.18 findings. It was argued that

- if intentions are known to be pacific, then defensive preparations are irrelevant
- if intentions are not pacific, then the concerns expressed above about MAP are valid

It was possible that defensive preparations by one side would themselves influence intentions by the other; however RSG.18 had found little to support this in the conventional case. It might be true in the nuclear case, but this would need to be justified.

It was stated that future seminars would investigate this. However, it was pointed out that intentions can change rapidly; the world had changed rapidly and substantially over the

past 10 years. Capabilities change much more slowly. Hence they had started by studying capability, and then would look at its effect on intentions.

(5) INDICATEUR DES CRISES - MR. JC LE MINH

This paper described a system which uses a range of indicators - political, economic, social and military - to compare the likelihood of different nations becoming involved in international crisis.

In the subsequent discussion the following factors were mentioned as being commonly identified in the political science literature as indicators of crises:

- windows" - states in a position of declining power are more likely to become involved in crises
- democracy - democracies rarely become involved in war with each other

A query was raised about the input data. For instance, definitions of employment rates (and the credibility of statistics) varies widely between states. It was agreed that economic indicators other than unemployment could have been used, and that the credibility of statistics is a problem; however, the unemployment statistics are based on an international legal definition. One must use the best available data even if it is not 100% reliable. It was also stated that which are the important indicators varies between nations.

It was also pointed out that the definition of territorial claims can be very "soft"; the two parties can have very different views of themselves and of the situation.

Approaches to the empirical verification of the method, against history or against the future, were discussed. It was stated that work had been done on validating the model by investigating figures for Yugoslavia for the period 1979-89 and comparing them with those for Bulgaria for the same period. The 1982 Argentine invasion of the Falklands has also been studied, and work is currently under way to predict the likelihood of crises over he next 5 years; results should be available in October.

MODELING FORCE REQUIREMENTS FOR PEACE SUPPORT OPERATIONS

P. N. Chouinard

BACKGROUND

The strategic environment now facing NATO differs greatly from that of the last four decades. To address this new environment, NATO started a fundamental review of its strategy in 1990. The concept eventually adopted retains "the flexibility to adapt to further developments in the politico-military environment, and to any changes in the risks to the Alliance security". Since that time the NAC has indicated a willingness to participate in peace support operations on a case-by-case basis. The numerous current peace support operations throughout the world indicate the complexity of the problem. Despite this challenge, the Alliance has unique capabilities and resources that may be particularly useful for peace support operations. The Alliance, through its political and military structures, has valuable assets for peace support operations. Besides existing infrastructure, communications systems and readily available force, the assets include expertise in integrating multinational forces and developing standardized procedures.

The SHAPE Technical Centre (STC) has the task of assisting SHAPE Headquarters in the determination of force requirements. As NATO's roles have expanded to include peace support operations, there is a need of appropriate analytical tools. These tools must be developed since there has been little operational research work in this area. Classical military operational research analytic tools focus on combat operations, strategic mobility or logistics. Peace support operations, except for peace enforcement, tend to elude such analyses.

In addition to the analytically non-classical nature of peace support operations, these operations are also inherently vague in nature. They occur at unpredictable locations and unforeseen times with an unknown international response. They are sensitive politically. It is difficult to identify criteria for success. Due to these factors, the analysis of a single, and potentially unrepresentative, historical scenario could lead to erroneous general conclusions. This is so since historical evidence indicates a progression in the complexity and sophistication of peace support operations. Even the results of a thorough historical analysis might not be extendible to future peace support operations. Therefore, a theoretical framework or structured approach is necessary to provide a proper context for the analysis of historical examples.

AIM

The aim of the current STC work on peace support operations is to develop a conceptual framework for the analysis of the long term land force requirements for peace

support operations. The framework must adequately express the fundamental relationships within a given operation type. It should include all dominant factors, operational objectives, required functions to accomplish those objectives, and the quantity and characteristics of force elements to fulfil the functional requirements.

NATO DEFINITIONS FOR PEACE SUPPORT OPERATIONS

The first step in the conceptual framework is to derive the types of political situation in which peace support operations may be undertaken, and the types of operation which are appropriate to each. As the Military Committee has agreed to specific terms to describe peace support activities, these must form the basis for the operational classifications. The definitions of these terms, extracted from the documents MC 327 NATO Military Planning for Peace Support Operations and a draft of the NATO Doctrine for Peace Support Operations, follow below. Although real operations will contain components of each category of activity, this analysis assumes that each term describes an archetypal operation. To develop a conceptual framework, it is necessary to restrict the operational classification to these archetypes. As experience develops, it may be possible to include operations with mixed activities.

The term "peacekeeping" was for many years adequate to cover most traditional peace support operations. However, the nature of modern peace support operations needs new terms to explain the characteristics of these operations. The NATO Military committee has agreed that "peace support operations" describes a wide range of activities including conflict prevention, peacemaking, peacekeeping, humanitarian assistance, peace enforcement, and peace-building. These terms are defined as:

Conflict Prevention
"Includes different activities, in particular, under Chapter VI of the UN Charter, ranging from diplomatic initiatives to preventative deployment of troops, intended to prevent conflicts from escalating into armed conflicts or from spreading. Conflict prevention can include fact-finding missions, consultation, warnings, inspections and monitoring. Preventative deployments normally consist of civilians or military forces being deployed to avert a crisis."

"The military means to influence the situation are early warning, surveillance, preventative deployment and stabilizing measures, such as the exchange of liaison teams, joint inspection of disputed zones, armed force reductions, and reporting of military exercises among potential foes in turbulent areas."

Peacemaking
"Peacemaking activities are diplomatic actions conducted after the commencement of conflict with the aim of establishing a peaceful settlement. They can include the provision of good offices, mediation, conciliation and such actions as diplomatic isolation and sanctions."

Peacekeeping
"Peacekeeping, narrowly defined, is the containment, moderation or termination of hostilities between or within States, through the medium of an impartial third party intervention, organized and directed internationally, using military forces, and civilians to complement the political process of conflict resolution and to restore and maintain peace."

NATO Doctrine identifies three categories of peacekeeping missions. These are:

1. Observation: "This is the most basic of peacekeeping operations, and its fundamental purpose is to observe and report."
2. Interposition: "This type of operation is conducted as a means of keeping opposing military forces apart, in the immediate aftermath of hostilities while negotiations for a peace agreement are in progress."
3. Transition Assistance: "This type of operation is initiated to support the transition of a country to peaceful conditions and an acceptable political structure after a civil conflict or struggle for independence or autonomy. The peacekeeping force attempts to effect an end to violence, to foster an environment in which the population can return to a normal life, and to support the achievement of a negotiated settlement by the parties in conflict. This operation may be required where warfare has left the country impoverished, its infrastructure destroyed and its social services rudimentary."

Humanitarian Aid
"Missions conducted to relieve human suffering, especially in circumstances where responsible authorities are unable, or possibly unwilling, to provide adequate service support to the population. Humanitarian aid missions may be conducted in the context of a peace support operation, or as a completely independent task."

NATO Doctrine identifies three principal categories of humanitarian missions:

1. Disaster Relief: "Disaster relief operations will usually address the life-saving/life-sustaining operations in cooperation with humanitarian operations and local authorities to meet the urgent needs of the victims of the disaster."
2. Refugee/Displaced Person Assistance: "Beyond the actions necessary to respond to a disaster, there may also be requirements to deal separately with the movement of people displaced from their homes voluntarily or by force either as refugees or displaced persons."
3. Humanitarian Aid: "The essential task in humanitarian aid is to distribute the very basic requirements for survival, primarily food, water, shelter and medical care, to groups of people at risk due to famine, drought, or conflict... [these] missions may pose significant challenges to any elements assigned this task as they often occur in conjunction with civil strife or military confrontation."

Peace Enforcement
"Peace Enforcement is action under Chapter VII of the UN Charter using military means to restore peace in an area of conflict. This can include dealing with an inter-state conflict or with internal conflict to meet humanitarian need or where state institutions have largely collapsed."

According to NATO doctrine,

"These missions generally employ conventional combat operations to achieve their objectives. The classic operations have been the Korean and Gulf Wars. They employ whatever military means are necessary to accomplish the mission, consistent with a war fighting doctrine."

Peace Building
"Peace building is post-conflict action to identify and support structures which will tend to strengthen and solidify a political settlement in order to avoid a return to conflict. It includes mechanisms to identify and support structures which will tend to consolidate peace, advance a sense of confidence and well-being and support economic reconstruction, and may require military as well as civilian involvement."

The activities within the scope of future land force requirements include peacekeeping, humanitarian aid, peace building and the preventative deployment component

of conflict prevention. As a diplomatic activity, peacemaking is completely outside this scope.

As stated above, it is possible that a given crisis or situation could involve several types of operation. For example, peacekeeping could occur simultaneously with the delivery of humanitarian aid and even with the threat of peace enforcement.

PRELIMINARY WORK

With the eventual goal of supporting NATO force requirements planning for Peace Support Operations, the preliminary work identified the following steps as the most effective way of meeting this need:

1. Define a set of generic scenarios which adequately cover the range of potential operations, along with qualifying information.
2. Determine the force requirements for each scenario.
3. Combine the results in a suitable and agreed manner, to determine the overall requirements.

As the final step is greatly dependent upon higher level guidance for priorities, the focus of the preliminary conceptual framework was on the first two steps. However, only the aim of the first step was adequately achieved.

The initial framework consisted of the following components:

1. A classification of situations, as defined by dominant factors, and the type of peace support operation appropriate to that situation. This step defines the primary objective of a peace support force in a given situation with a specified mandate (i.e. peace support operation).
2. A high level description, using influence diagrams, of the interactions between operational components of the peace support force and the underlying situation. This should identify detailed operational objectives for the force, and hence the required "front-line" operational functions.
3. The linkage between the operational functions and the high level operational objectives was through the elaboration of the appropriate high level influence diagram to include the relevant functions. Attempts were made to define the required level of performance from each function.

These ideas were tested through case studies involving military experts in workshops. One result was the refinement of the influence diagrams, through a better understanding of the relationships within an operation. However, the case studies also led to a re-evaluation of the over-all approach taken in the preliminary framework. Consequently, recommendations were made for a modified framework.

Classification of Situations

To link the various types of Peace Support Operations to the underlying political situations, it was necessary to define broad categories of these situations. Through a review of the relevant literature and the identification of dominant factors by military and civilian experts, the analysis derived a classification based on two variables. These are:

Level of Order, which is the extent to which there is a single effective government or state, or two-well-defined organised sides in conflict, each with a government or leadership which is in control of the actions of its followers. If the level of order is low there will be a multitude of factions operating without regard to any higher level authority.

Tension, which is the level of hostility between sides in conflict, as characterised by such factors as the level of diplomatic relations, the forward deployment of troops along frontiers or faction boundaries, and the frequency of military "incidents". At its upper limit, tension merges into actual war.

Examples of dominant factors which influenced this determination are included in Annex A.

Then, in terms of these variables, it is possible to identify seven broad categories for the condition of a state or states. These are:

1. **Peace** is where the level of order is high enough, and tension is low enough, that there is no perceived requirement for a peace support operation.
2. **Confrontation** is where the tension is high, leading to a significant risk of war starting, but order is high enough for there to be a limited number of clearly defined sides with a significant degree of central control. This condition may arise during the build-up to war, and also in the immediate aftermath of a limited war.
3. **War** where order is high and the increase in tension has led to large-scale violence.
4. **Disorganisation** is where the tension is low, but order is also low. This will typically be the situation following a major natural disaster.
5. **Fragmentation** is where the level of order is low, and tension is moderate to high. Here, rather than a limited number of opponents in effective control of their areas, there will typically be a number of factions each with varying degrees of control over their regions, undertaking sporadic hostilities and forming ad-hoc alliances.
6. **Anarchy** is where the order is low and tension very high, with large scale factional violence taking place.
7. **Normalisation** is where the level of order is moderate and tension is moderate. Typically a confrontation or fragmentation situation has been resolved to the point

where the future course of action has been agreed by the various sides, but a peace operation is still needed to manage the implementation.

Figure 1 illustrates these various states and the major transitions of concern to peace support operations.

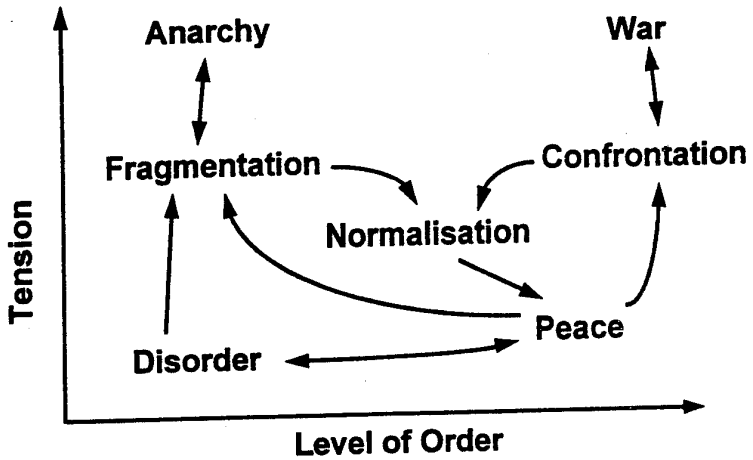

Figure 1. Depiction of Situation States and Relevant Transitions

While any real situation will not likely fit into such well-defined categories, any initial development of a conceptual framework must start with concise definitions. Later, as experience develops, it may be possible to examine potential situations which lie between the well-defined states.

Relationship of Situation Classes to PSO's

The relationship between the situation classes and the NATO defined Peace Support Operation types are as follows:

1. **Observation and Interposition**: These operations are undertaken in the Confrontation state, normally after a transition from War. Their objective is to promote transitions to Normalisation, and to prevent those to War. They aim to reduce tension by preventing or defusing incidents between the antagonists, encouraging withdrawals of forces and reducing the extent to which each perceives the other as a threat. Success depends upon such factors as speed of deployment, perceived effectiveness in interposition and the acceptability of the force which is driven by its perceived impartiality. Observation missions will usually be undertaken in situations where tension is lower. There will be a tendency for successful Interposition operations to be converted to Observation operations when the tension has reduced sufficiently.
2. **Preventative Deployment**: This type of operation is also undertaken in the Confrontation state. It is distinguished from observation and interposition in that

either or both the operation is undertaken before any transition to War, or it is undertaken with the consent of one side only.

3. **Transition Assistance** may be undertaken in both the Fragmentation and Normalisation states. In the Fragmentation state, the aim is to promote a transition to Normalisation. In this case there may be a significant level of localised violence between local factions, and the Peace Support force's activities may include providing law enforcement and the local use of force to restore order. In the Normalisation state, the aim of the operation is to promote a transition to Peace and preventing those to Confrontation and Fragmentation. It supports the implementation of peace terms and enhances the effectiveness of legitimate governments.

The various humanitarian operations are somewhat different in that they typically have dual objectives. The primary objective is to provide the essentials for survival, but secondarily, they will contribute to the underlying political situation by improving the level of order and reducing tension.

4. **Disaster Relief** will normally be undertaken in the Disorder state. It has a straight forward humanitarian aim, but by helping to restore order it may also prevent the situation deteriorating towards Fragmentation.

5. **Refugee/Displaced Person Assistance** will typically take place in a neighbouring country from where violence is occurring or in more peaceful regions of the country. While the cause of the situation may be Anarchy or War, the immediate conditions in the area of operations will be Peace or Disorder. The primary aim is humanitarian, but by helping refugees the operation will tend to prevent the spreading of disorder from the source of the problem.

6. **Humanitarian Aid** operations are likely to be most important in the Fragmentation and Anarchy conditions, and in particular are most likely to need military support. They may also be significant in the Normalisation condition. In the Fragmentation and Normalisation states they will tend to interact with Transition Assistance operations.

7. **Peace Building** operations primarily involve civilian elements, but may involve military forces for their technical specialities. These operations will be occur in the Normalisation, and possibly Confrontation state.

8. **Peace Enforcement** is defined as the use of military force under Chapter VII of the UN Charter to maintain or restore international peace and security. In order for Chapter VII to be invoked, the situation will likely involve high tension. It will also tend to involve situations of higher order, as Chapter VII is directed towards international, and not internal, relationships. As such, it will occur in situations which are near to War or actually involve War.

While this matching of the operation type to an underlying political situation may be somewhat superficial, this simplicity is beneficial and even necessary for the development of

an initial understanding of the problem. Keeping in mind the aim of determining long-term force requirements, even this simple classification can contribute to a recognition of the appropriate response to a situation and the identification of associated objectives and forces.

Figure 2 illustrates the above relationships. Ellipses for each peace support operation are superimposed on the a graph of the various situation states, shown in bold print. The area of an ellipse shows the approximate domain for which that operation is applicable.

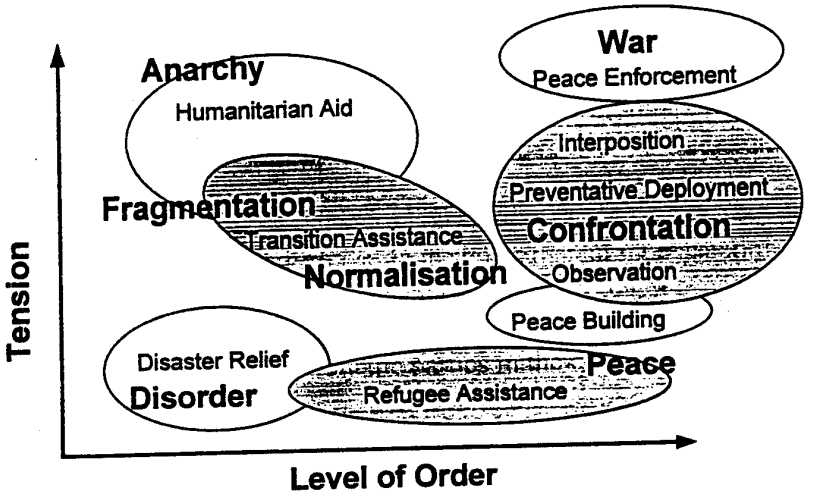

Figure 2. Relationship between Peace Support Operation type and Underlying Situation.

Influence Diagrams

To develop an understanding of the dynamics of the various Peace Support Operations, and the ways they interact with the underlying situation, influence diagrams were drawn up for each operation type. Figure 3 illustrates an example for an Interposition operation. For clarity, this diagram is not complete in that it does not show all factors or influences. Its purpose is to illustrate the concept, rather than to fully explain an interposition operation.

The diagram follows system dynamics conventions in that the factor at the tail of an arrow influences the factor at the head. A "+" sign shows that an increase in the influencing factor causes an increase in that influenced, whereas a "-" show that it causes a decrease. It makes use of the concepts of Tension and Order discussed above, and also the idea of 'force effectiveness', both actual and perceived by the parties in the conflict.

Interposition Influence Diagram: The core of the underlying situation is the conflict cycle, where the tension between the parties generates border incidents that in turn increase the perceived threat. This increased threat in turn increases the tension. The tension is also influenced by situational factors (not shown), which include the number of involved parties, the presence of fanaticism, cultural differences, the degree of resolution of differences between the parties, and the complexity of those issues. Obviously, there will also be

diplomatic and political activity to reduce the tension. The factors in the basic conflict cycle are shown in figures 3 as in the small, bold text.

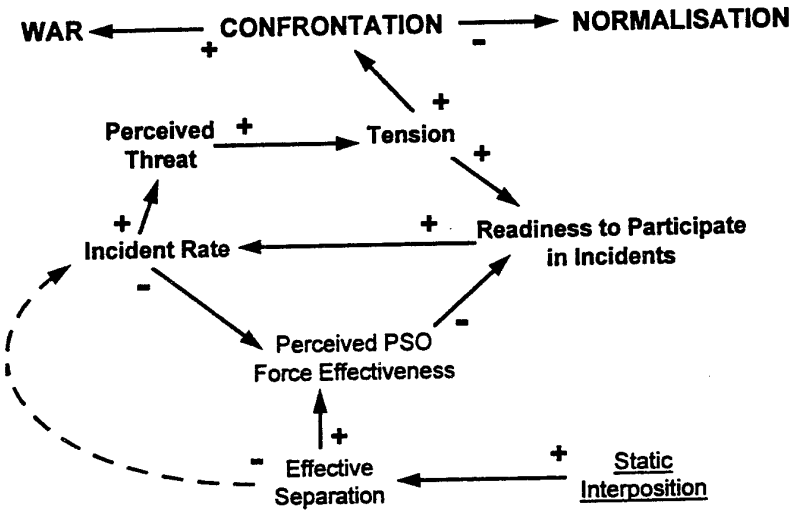

Figure 3. Sample Influence Diagram for an Interposition Operation.

The objective of the Peace Support operation is to reduce the incident rate, and hence the tension, through the separation of the local forces and by responding to incidents as they occur. Hopefully, by reducing the tension, the situation can be reduced from one of 'Confrontation' to 'Normalisation', or at least that a transition to 'War' is prevented. These situation states are shown as large, bold test in figure 3. It was the opinion of the experts that the primary way in which the interposition force reduced incidents was through reducing the motivation or readiness of participants to engage in incidents. Therefore, the secondary influence of effective separation on the incident rate is shown as a dashed arrow in figure 3.

For Interposition operations effective separation involves the investigation and reporting of incidents, the placing of forces between the factional forces, and the maintenance of a buffer zone through the use of observation posts, checkpoints and patrolling. The force's effectiveness in doing so will be driven by its size and capability, the timeliness of its deployment, and geographical difficulties. Figure 3 shows one example of a force function, 'static interposition', as underlined text. This function would normally consist of maintaining observation posts, and conducting local patrols, which would probably be on foot.

Case Studies

The aim of the case studies was to test out the above ideas in a workshop involving both military and civilian experts. The two cases selected, both mainly interposition operations, were:

1. UNEF II: This the UN operation in the Sinai Peninsula following the end of the Yom Kippur War in 1973, to supervise the cease-fire and the withdrawal of the forces of both sides. This operation lasted until May 1979. It is regarded as a

success, in that there was no renewal of fighting, and a peace treaty was successfully negotiated while the force was in place.

2. UNIFIL: This is the UN operation in Lebanon following the Israeli invasion in 1978. It has two primary objectives: to confirm the withdrawal of Israelis forces and prevent a recurrence of fighting (Interposition); and to take all measures to restore Lebanese authority to the area of operations (Transition Assistance). The operation is still in existence. However, it completely failed to meet the second objective, and largely failed to meet the first, in that Israeli forces reinvaded in 1982.

The workshops provided insight into the various influences and factors within an interposition operation; and these insights have been incorporated into figure 3.

Conclusions of the Preliminary Work

The preliminary work demonstrated that it is possible to:

1. develop a logical and complete classification of the political situations in which peace support operations are undertaken, in terms of dominant factors which characterise those situations. This classification can be used to identify the types of peace support operation are appropriate and likely to succeed in a given situation; conversely, it can be used to define the typical situation in which a given type of operation will be undertaken.

2. analyse and represent each type of operation by an influence diagram, in a way which gives insights into the interactions involved in the conduct of the operation, and the factors which contribute to success or failure.

3. use the influence diagrams to guide expert judgement in the process of planning the fore required to conduct a specific operation; both in identifying the required forces and providing insights into other desirable characteristics of the force.

However, the study did not demonstrate that a top-down analysis using influence diagrams can form the basis alone for determining force requirements. In particular, three problems were identified:

1. As fidelity and completeness are introduced to an influence diagram, the resulting complex network of influences ceases to provide insight.

2. The likely existence of feedback loops in the diagram complicates a top-down analysis by introducing a non-linear influence.

3. As the number of influences at a node in the diagram increases, the number of potential combinations of lower level factors, and consequently force options, increases geometrically. Nor is there any manageable mechanism for carrying

qualifications down to the identification of detailed operational objectives, force functions or force elements.

MODIFIED APPROACH

As a result of the workshops involving the case studies and the conclusions mentioned above, the overall approach was modified. The two goals of the modifications were to introduce a bottom-up component and to restrict initial force options to constrain the problem.

Overview

The modified conceptual framework, which is the focus of current developments in the Land Section of STC, involves both top-down and a bottom-up components. The top-down component is used to generate the Peace Support Operation type appropriate to a given situation, a concept of operations for that operation which includes objectives and a generic force package. To do this requires certain constraints on the problem to keep it within manageable limits. Aspects of the top-down component are explained in a subsequent section.

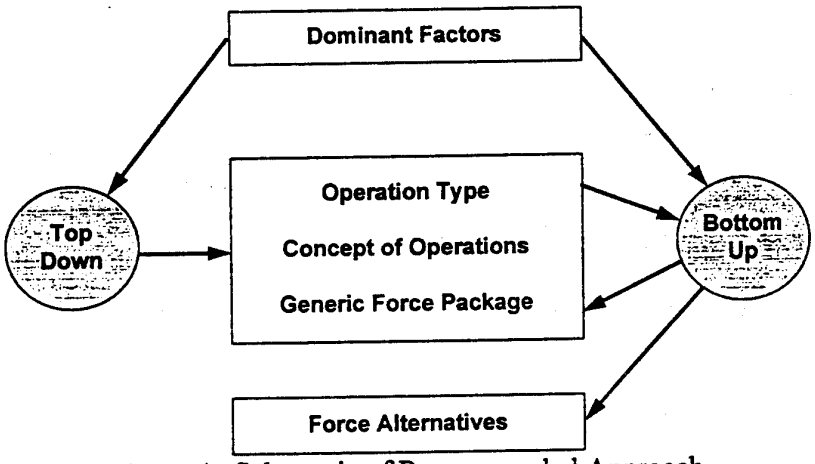

Figure 4. Schematic of Recommended Approach.

The second component is bottom-up. Details have not yet been developed, but the intention is that this component should produce verification of assumptions used in the top-down analyses and force options, or deviations from the generic force package.

The relationships between the two components are shown in figure 4. The process are shown as circles, while their inputs and outputs are shown in the boxes. Note that the bottom up process is iterative with respect to the factors that describe an operation. This figure also shows that dominant situational factors must be considered in both parts of the framework.

Top Down Analysis

An elaboration of the top-down approach is shown in figure 5. This shows three sub-components:

1. The first step in the approach is to classify the appropriate operational type for a given scenario. This has been explained in detail above. However, further work is required to examine sub-classes of each situation within the context of a given operation type; and to determine the impact of specific dominant factors defining that sub-class on subsequent analyses.
2. The second step is to identify operational objectives for each operation type and the functional requirements implied by such objectives. The sub-classes determined above should have some influence on the priorities of the objectives and on variations in the specific nature of the functional requirements. A method, called problem decomposition, of providing a focus for expert advice on determining these objectives and functional requirements is explained below. This method depends upon generic control variables to provide the needed focus and constraint upon the problem.
3. The final step to produce a generic force package which consists of the generic force elements required to achieve the functional requirements. As yet an adequate mechanism for address the force size, or numbers of each type of generic force element, has not been identified. In addition, it is unclear of how to deal with the issue of identifying synchronicity of objectives. In some cases the same force element may be able to achieve two objectives simultaneously and in others the objectives may be mutually exclusive. For example, a medical unit may in some circumstance be able to meet both the medical needs of the force and those required by humanitarian needs, but in other cases this might not be so.

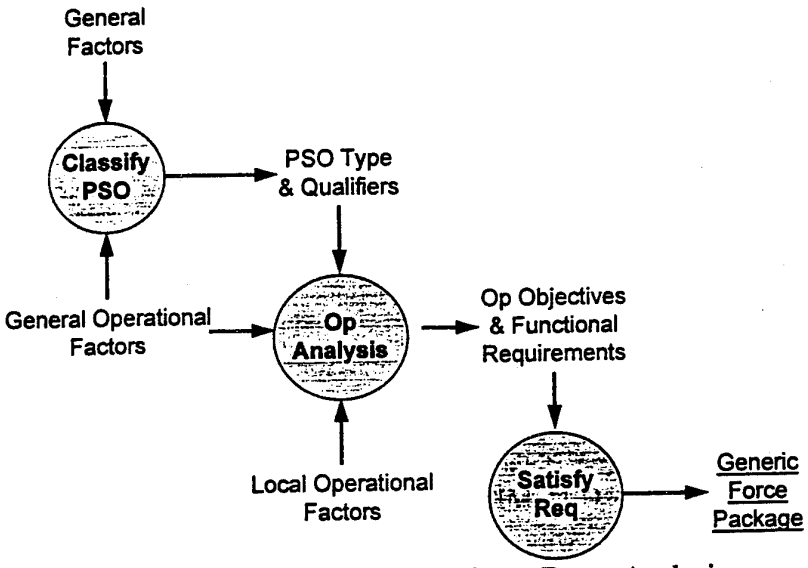

Figure 5. Detailed Illustration of Top-Down Analysis.

Figure 6 illustrates in greater detail the last two steps of the top-down process. For each operation type, the operational objectives are identified through the control variables. The dominant factors relevant to a sub-class of the underlying political situation define any qualifications on those objectives. The operational objectives imply the requirement for certain types of functions; and these in turn imply the need for specific force capabilities, including a specification of size. The sum of these capabilities is the final output of the top-down process, the generic force package.

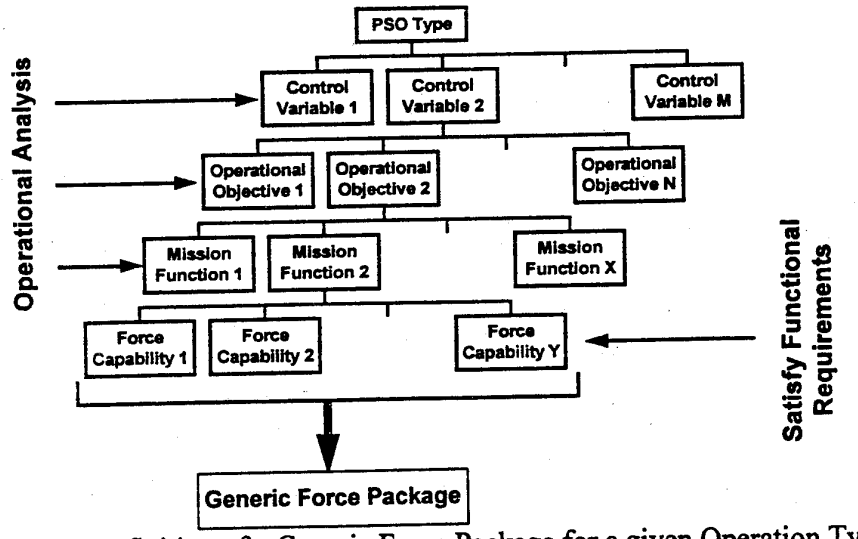

Figure 6. Definition of a Generic Force Package for a given Operation Type

Problem Decomposition

The approach for identifying operational objectives is termed "problem decomposition". Its purpose is to decompose the problem into smaller, but more easily understood components. The decomposition must be relevant to the nature of the problem so that examination of the smaller components does enhance understanding of the problem. It must also be complete, so that no significant aspect of the problem is overlooked. Control variables provide the means to accomplish this decomposition. This set of variables should provide a complete breakdown of the problem into relevant components, each which is itself a more soluable problem. Figure 7 shows an example, for an Interposition operation, of decomposition similar to that used by police in criminal investigation.

In this case of an Interposition Operation, the "crimes" are the incidents between the involved parties. Police forces investigate crime in terms of opportunity, means and motive. Further, underlying aggravations will drive the overall rate of crime in an area. These aggravations are also of concern to the police. An interposition operation could be addressed in the same way to identify operational objectives. In other words, the experts must identify ways to reduce the opportunity for incidents to occur, the means to carry them out, and the motive or will to engage in those incidents. In addition, there must be some effort to address those underlying aggravations which are within the capability of a potential Peace Support Force. These factors are suggested control variables to focus expert opinion and identify detailed operational objectives. As figure 7 illustrates, any relevant dominant factors must also be taken into consideration in this process.

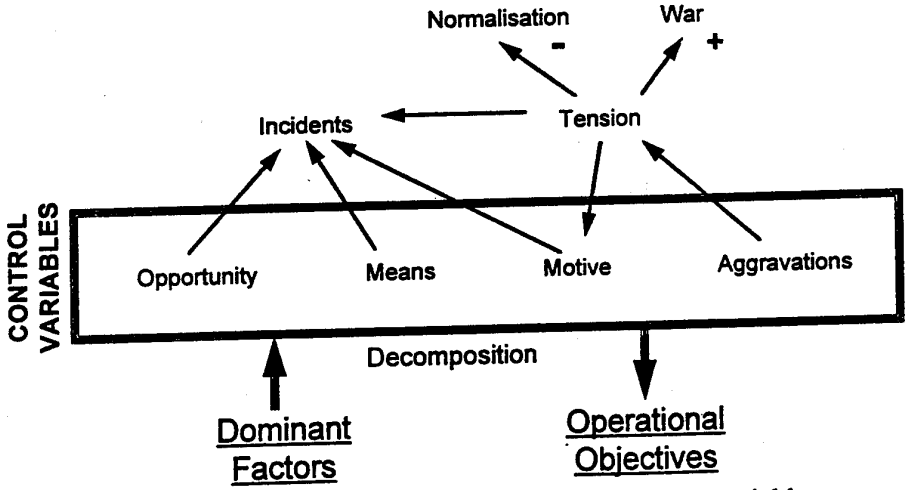

Figure 7. Decomposing a Problem through Control Variables.

Figure 8 shows a sample of operational objectives for the decomposition of an Interposition operation with the focus on reducing the opportunity for involved parties to engage in incidents. Three suggested basic methods of reducing this tension are to:

1. define a demarcation or "separation" line between the parties, and to observe the created buffer zone for violations. This objective likely requires other objectives to report and protest violations (i.e. it is linked to objectives related to motive). At the very least, it can deny any antagonists the opportunity to "surprise" their opponents. By itself this objective would be sufficient only in circumstances of lower tension; and it therefore would resemble an Observation mission.
2. The second objective, suitable for higher degrees of tension, is to actually interpose a portion of the Peace Support force between the belligerents. Any attempt to engage in hostilities then requires that an antagonist move through the force's position. Experiences such as UNEF II show that this can be a powerful factor in preventing the occurrence of incidents. It usually requires the demarcation of a buffer zone (i.e. the first objective). It may not be sufficient in cases of very high tension, but not necessarily war.
3. The third objective, probably necessary in situations with very high tension, uses military power, with the threat of its use, to occupy key terrain features. Thus an antagonist would need to occupy these positions to continue hostilities; and this would entail the threat of conflict between them and the Peace Support force. There may be insufficient historical examples to identify the circumstances for which this is a potentially successful objective of a Peace Support force.

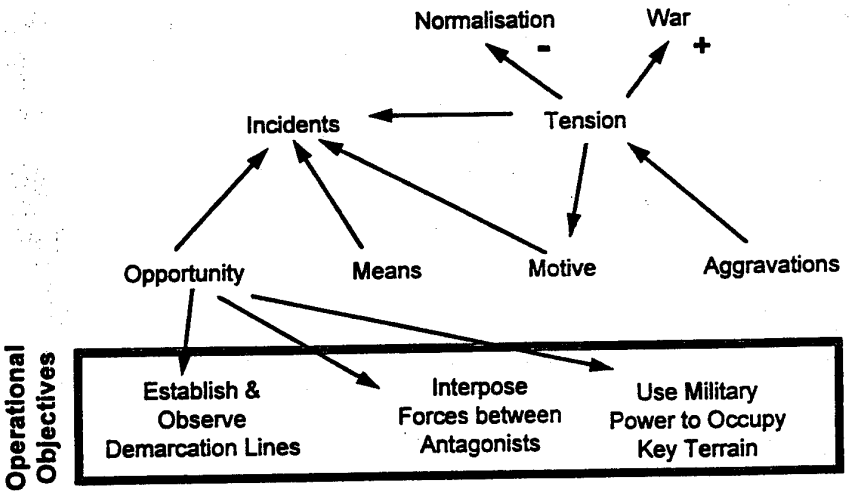

Figure 8. Sample of Problem Decomposition for an Interposition Operation.

Once objectives have been identified, functional requirements must be determined along with any qualifications relevant to the objective. For example, the objective of "interposing forces between antagonists", which is the primary objective within an Interposition operation, requires functions to demonstrate both a static and mobile presence and a reconnaissance function to direct its focus. The objective requires that of "establishing and observing demarcation lines"; and can be enhanced by supporting objectives to "speedily deploy forces", "defend the force", and "enable force mobility". Similar descriptions and linkages to force functions are needed for all objectives. Matching force elements to functions

such as "demonstrate presence" and "reconnaissance" are straight-forward, but determining the required number of such elements for future force requirements is more problematic.

In summary, the approach is a combination of top-down and bottom up. The top-down components are to:

- classify the situation and identify the appropriate operation type;
- decompose the problem and identify primary relationships in the operation and consequently operational objectives and functional requirements;
- satisfy the functional requirements and produce a generic force package.

No detailed concept exists for the bottom-up process, but it must be able to:

- validate any assumptions in the top-down process; this will likely involve a number of case studies;
- identify important secondary relationships and their impact on requirements;
- evaluate force options as deviations from the generic force package.

WAY AHEAD

The conceptual framework should be completed before any model development. This does not preclude future modifications to the framework. Rather, it is that any developed model is more likely to be a part of the bottom-up process; and that process will undoubtedly be dependent upon complete development of the top-down process.

The foreseen steps in the completion of the conceptual framework are to:

- refine the classification of situations to cover important sub-classes;
- refine the problem decomposition method so that there is a structured method of identifying supporting objectives and required functions;
- extend the problem decomposition method to all Peace Support Operation types;
- develop a conceptual framework for the bottom-up process, which could include identification of supporting models.

ANNEX A

DOMINANT FACTORS AFFECTING PEACE SUPPORT OPERATIONS

- strategic importance of operational area
- degree of international support for the operation
- clarity of political guidance and objectives
- timeliness of international response
- degree of unresolved differences between factions
- complexity of political issues underlying the situation
- degree of fanaticism among the factions
- degree of consensus for peace support operation within the operational area
- the number of factions involved in the confrontation
- degree of control within each faction
- cultural characteristics within the operational area
- global location
- ability to deploy forces to the operational area
- geophysical and climatological conditions in operational area
- infrastructure in the operational area
- volatility of the situation
- potential or current intensity of hostilities
- likelihood of peace support force being engaged in combat
- ability to extract the peace support force from the area
- complexity of military objectives and tasks for the peace support force
- military conditions of operational area
- military capabilities of faction forces
- potential size of the required peace support forces
- potential duration of the deployment

STABLE STRUCTURES IN AN UNCERTAIN WORLD "DETERMINING ARMY STRUCTURES FOR THE FUTURE"

C. S. Grant

INTRODUCTION

The certainties of the Cold War have been swept away, not by the much vaunted new world order, but by new world disorder. Civil war, national and ethnic conflict, humanitarian disasters, and terrorism abound. The world is, more than ever, an uncertain place. Within this catalogue of uncertainty we seek to shape an army that will meet the challenges of the future and contribute to national and international stability. To achieve this we must first be clear what these challenges are and what part and what roles our army will be asked to play in the future. Inevitably, I will address these issues from a national perspective, but I would suggest that the problems, influences and challenges are similar for many of our countries.

Our Chief of the General Staff has tasked the Director General of Development and Doctrine "To describe the capabilities likely to be required by the British Army in the first decade of the next century and the structural and doctrinal implications that result."[1] This work will be help to shape the British Army in the next century. Getting these structures right will be an important influence on stability in the future.

AIM

The aim of this paper is to consider the challenges for developing future force structures and the contribution that operational analysis should make to creating such structures for the future.

DEFENCE ROLES AND THE SPECTRUM OF CONFLICT

The start point must be the consideration of what our Army is required to do. These requirements are embodied in British Defence Policy which defines three overlapping Defence Roles (DRs). These simply stated are:

DR1 - Defence of the UK

DR2 - NATO Alliance and collective security commitments.

DR3 - Wider security interests

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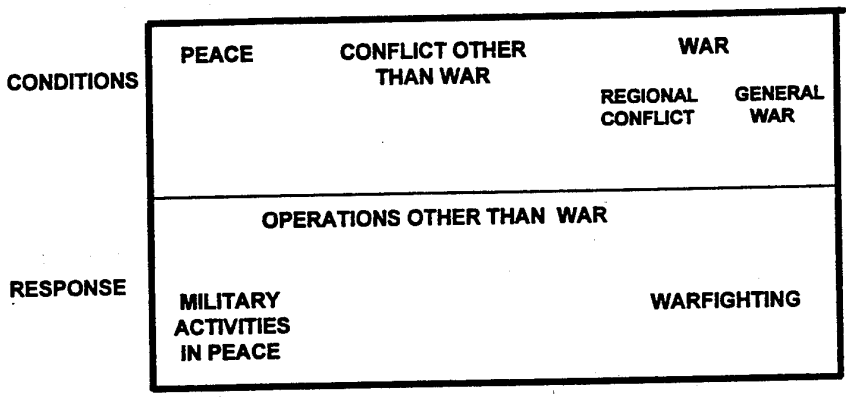
[1]BA2000 - A Paper for ECAB dated 5 May; Para 2.

Implicit within these three roles is the requirement to be able to operate throughout the spectrum of conflict.

This diagram shows the conditions from peace, through conflict other than war to regional and general war. Below them are the military responses from military activities in peace through operations other than war to warfighting. This simple but effective diagram to some extent conceals the complexity of operations other than war or OOTW. These range from observer missions and humanitarian aid, through peacekeeping, counter-insurgency and peace enforcement.

THE SPECTRUM OF CONFLICT

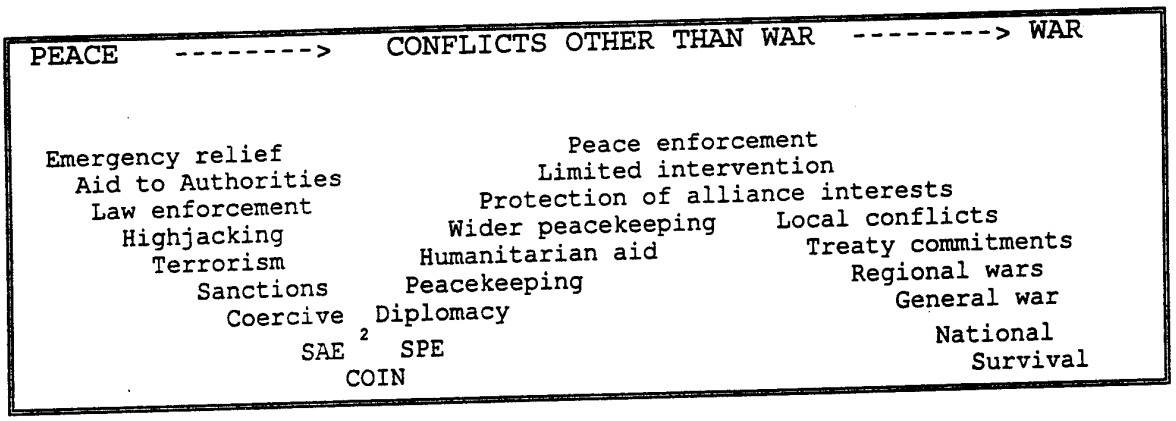


Given our Defence Roles, our armed forces must now be capable of meeting all these roles, the military tasks entailed in them, and perhaps adapting to others in the future. They will need to be able to operate throughout the spectrum of conflict.

The ability of our forces to carry out these roles is not in itself sufficient - there must be a general perception that the forces are capable of carrying out these roles. It is only with such a perception that the full deterrent value of military forces can contribute to stability. Our future force structures must contribute to averting wars as much as fighting wars.

However, of one thing we are clear, if we are to be able to continue to operate (as our Defence Roles 1 and 2 require us to) at the "heavy end of the spectrum" then we must preserve our warfighting capability. It is possible for an army to transition fairly rapidly to lighter roles but once the expertise, never mind the equipment, is lost it can not return quickly and effectively to the warfighting role. That at least gives us one clue about future structures. If our force structure is to contribute to stability across the spectrum it must be capable of operating throughout it. Furthermore, "warfighting" remains the prime driver.

SPECTRUM OF CONFLICT



WHAT ARE THE INFLUENCES?

Given the roles and the spectrum of conflict we must also consider the various other factors that will influence our future structures. Let me list some briefly because time does not permit a detailed examination if I am to get to the modelling issues.

For many of our countries, and certainly for the present, the perception that we are in a state of "peace", however turbulent that peace may be, will mean that our structures must be set within diminishing budgets and reducing size.

There is a perception, whether right or wrong, that casualties and collateral damage in any future war will be low. This will make its own demands on our structures and the choice and application of technology.

Media coverage, coupled with the previously mentioned perceptions will make other pressures prime topics of interest - for example combat ID and the end to "blue on blue" casualties are now very much an issue.

The Status and Standing of the armed forces in society must influence and impact on our army, the recruiting base and the level of professionalism.

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[2] SAE : Services Assisted Evacuation.
SPE : Services Protected Evacuation.
CIN : Counter-insurgency.

Operations now and in the future are likely to be Multinational, coalition and within alliances. Our structures must be tuned to adapt to this without rendering us dependent on unspecified partners.

These operations may be conducted with or without host nation support and this will certainly impact on the requirement for a sustainable force. It will shape the logistic train and make increasing demands for a flexible logistic infrastructure.

As I have already said, we face a wide spectrum of enemy capabilities rather than one clearly defined Threat and our structures must be flexible and robust enough to adapt to these.

Cultural differences may mean that we may face weapons and forms of warfighting that we ourselves would not necessarily countenance. I include chemical and biological weapons as well as eye damage weapons and hostage taking. We must at least be able to protect ourselves from such "threats" and where technologies are involved we must fully understand them.

Finally the impact of novel and emerging technologies will place increasing demands on our defence resources if we are to be a third wave, information based army as the Tofflers call it in their book "War and Anti-War".

DOCTRINE

In considering the force structures and their contribution to stability, there is more to an army than equipment - the issue is far greater than simply producing the hardware. British military doctrine requires three elements of fighting power, the moral, the physical and the conceptual. Expressed another way it is the man, the equipment and the doctrine. The sum of these three elements is greater than the individual parts - and more difficult to measure. All three must be addressed in our analysis of future force structures. Neither will it be on the basis of attrition ratios that our force structures are measured but on the ability deter aggression, project power and ultimately to put a manoeuvrist doctrine into practice.

THE GOAL

To be able to achieve its Defence Roles, and thus make a full contribution to national and international stability, the future army must be equipped, manned, trained and structured to meet the challenges and roles already indicated. The indications are that we will be looking at modularity, robustness, dual rolling, the various regular/reserve mixes, providing appropriate readiness, endurance and sustainability. This force will be equipped with a limited budget, and so it will need technologies which maximise its effectiveness on operations. One key area in this will be command and control, maximising the so called "information" technologies to win the Command and Control war and achieve "Tempo" in operations.

MODELS AND APPROACHES

So, let me turn now to the operational analysis to support the work going on to project our army into the 21st Century. I think at this point I should define what I mean by Operational Analysis or Operational Research. For us, it is not limited to the popular definition of "The application of scientific methods to assist executive decision making" For us, it includes not only the usual wargame and simulation assessment techniques, but also those qualitative measurements derived from properly structured military judgement, authoritative histories and historical analysis. The latter is especially valuable in getting a handle on those elusive human factors such as shock, surprise and fatigue.

Holistic Study. Our approach to the Army of the 21st century is a holistic one and our operational analysis must mirror this. However, to embrace the subject in one question and with one study would be inviting failure. For this reason we are adopting an incremental approach:

Incremental Approach. This approach will involve a number of discreet elements which will begin to fill in the whole picture. For example, divisional structures for regional conflict may be looked at first as a discreet element, then in terms of regular/reserve mix, utility in OOTW and so on.

MQ J17.1 We have a Master Question, (our system of tabling and funding OA questions) called J17.1, which will provide the core of this work. It is a study that we hope will enable us to look at various parts of the whole puzzle. Part of its work will be to construct models which will support its principle work. Another part will look at Divisional structures, initially in regional conflict. Yet another part will provide a simple resources and formations model of the whole army to give us a tool to look at other ways of organising to meet our tasks. J17.1 will link into J17.2 which will measure effectiveness and capability gaps in a balance of investment.

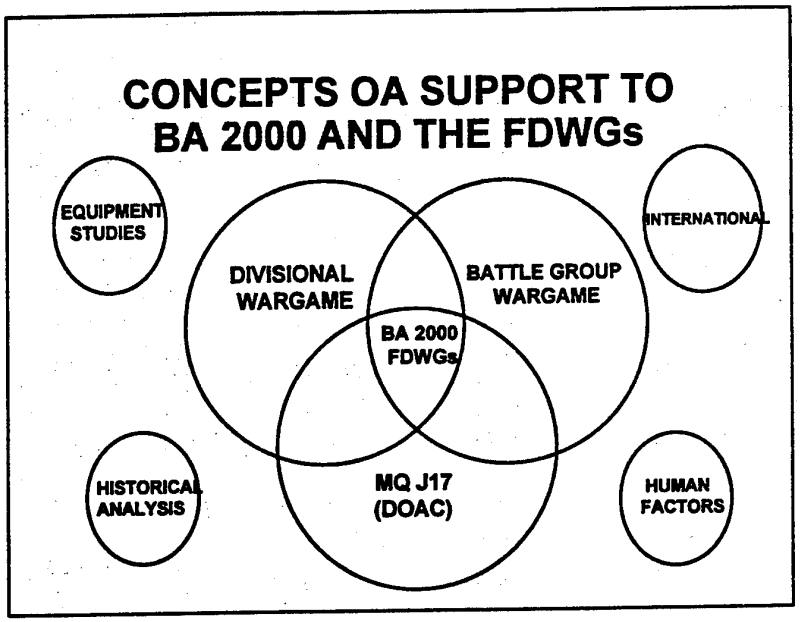
Other Studies

We are using two particular facilities, the Divisional and Battlegroup wargame which look at the combat issues at these two levels. This will feed into J17.1..

Equipment Studies. There are a host of individual equipment studies that all help to inform our analysis. Each one has a part to play in the study architecture.

Human Factors - I mentioned earlier the three components of fighting power - the physical, conceptual and the moral. We are using human factors research to look at many issues such as the span of command, commanders and stress, commanders information requirements, nationality factors and other issues. This area is particularly important if we are to have a better understanding of the moral component.

Historical Analysis and Research. Finally we must not forget the lessons of history. An obvious source for all of us are past campaigns, since they contain all the human factors that drive those moral and conceptual elements I mentioned earlier.



A STRATEGY

The end result is a strategy which will embrace the many OA tools and marry them to requirements, highlight the issues and give insights into the deficiencies. We believe that we are making progress in this area. However, there is much to be done and I am not confident that the analytical community is yet ready to tackle all the issues.

CHALLENGES FOR THE ANALYTICAL COMMUNITY IN EXAMINING FUTURE FORCE STRUCTURES

This work will not be easy, it is not based on the certainties of the Cold War - indeed there are few fixed reference points. None of this is any excuse for not doing it but it presents us with many challenges.

We need to understand the totality of the problem. Whether we like it or not we are in the prediction business. This is becoming more important as resources become more scarce while the problems we deal with are becoming more complex.

New Models. There is a need for New Models to reflect the different challenges that will face our armed forces. Attrition based models are inadequate to cope with many of these roles. C2W, Information warfare and other less tangible aspects of operations will need to be modelled. The capabilities of a force are more than the sum of equipments. The moral and conceptual components must be taken into consideration.

OOTW Modelling. The whole area of OOTW Modelling should be developed **now**. There has been some tentative development in this field but I doubt that any of us would claim that a robust and effective suite of such models exists to address the issues we are dealing with today.

Military judgement. Many of the issues that are poorly understood, like the impact of varying morale or inadequate training, can only be analysed with a high content of military judgement. Indeed, judgement has always been a bridge between the various disciplines across the field of OA, and in our changing world in our changing world it will be especially important. Credible techniques like Saaty, Delphic, mission oriented analysis and properly structured brainstorming do exist to structure military judgement in a manner that is seen to be more than the opinion of the senior officer present. We need to develop them further.

Historical Analysis and Human Factors. Despite the vast amount that has been written on campaigns and battles, great care and skill is necessary to make authoritative analytical deductions. To this end, the UK and especially my own organisation, are sponsoring a good deal of extra work in this field. Through a human factors research programm we are trying to understand some of the psychological and physiological factor involved. This integration of historical analysis and human factors into other modelling techniques is, I believe, of increasing importance and yet the people capable of carrying out quality work in this area are few and far between.

Measurement of effectiveness. The measurement of effectiveness, defence output and value for money must be high on the agenda given the conflicting pressures for resources. Yet the models to look at this are in their infancy and much more is required if they are to inform the debate with credible analysis.

Support for Operations. The military community is, perhaps belatedly coming to appreciate just what OA in the field, on exercises and particularly on operations can do for it, having forgotten what was done so usefully in the past. Have the appropriate fast OA tools for the formation HQ on operations been developed to give timely response in the field? Some good work is being done but more is needed.

Model Quality. Finally we must address the question "What is behind the screen"? It is not the sexy front end, attractive to the military man though it may be, that is important but what lies behind it. We must combine glossy graphics only with a good model.

CONCLUSIONS

We face a world where Operational Analysis skills are more than ever in demand and yet we are still coming to grips with how to meet the requirements. These analytical skills are more important than ever - the challenge is to make them appropriate to this new security environment and thus help to achieve a greater stability, through appropriately structured and equipped forces, in the 21st century. It is a challenge that must be addressed now.

PROTECTING WEAK AND MEDIUM-STRENGTH STATES: ISSUES OF DETERRENCE, STABILITY, AND DECISION MAKING[1]

P. K. Davis

ABSTRACT

Deterring the invasion or coercion of weak or medium-strength states that are important but *not* vital interests of major states is a key strategic challenge of the new era. This paper describes strategies for doing so. It begins by using decision modeling methods to identify factors that would influence the decisions of would-be aggressors, including factors idiosyncratic to individual leaders. It then discusses how both immediate and general deterrence might be strengthened by a variety of political, economic, and military measures. The measures discussed include reasonably capable defensive forces that cannot easily be bypassed, operational arms control to make surprise attack more difficult, forward-deployed protector forces, and formal arrangements through regional security structures that would *assure* the long-term punishment of aggressors through political and economic isolation and, perhaps, military measures. The paper also encourages identifying and rooting out "dangerous ideas" that increase regional tensions and hatreds, and that could encourage aggression during a crisis.

1. INTRODUCTION

A CENTRAL PREMISE

This paper was developed for an international conference dealing with long-term stability and security in a multipolar world. Rather than discussing stability and security in the broad, however, it focuses on the challenges that follow from my central premise, that

- A principal strategic issue for the developed world is how to deter invasion or coercion of weak and medium-strong states when the security of the threatened

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[1] Presented at the International Symposium on Modeling and Analysis of Stability Problems in Multipolar International Systems, 7-9 June, 1995, Universität der Bundeswehr in München, Germany (conference proceedings to be published by NOMOS Verlagsgesellschaft, Baden-Baden); and the NATO Symposium on Military Stability, 12-14 June, 1995, NATO Headquarters in Brussels, Belgium. The paper is an adaptation of a longer paper, "Protecting Weak and Medium Strength States: a Major Challenge for Strategic Planning," RAND, MR-643-OSD, Santa Monica, CA, forthcoming.

states is important, but not a "vital" national interest of the powers who might be the protectors.

This premise is provocative, primarily because of the reluctance of democracies to face up to challenges that do not clearly affect their truly vital interests. To some it conjures up images of entangling alliances, world policeman functions, strategic overextension, and quagmires. To others like myself it seems to be a sober expression of reality. If accepted, it has a considerable impact on how one thinks about foreign policy and defense planning.

APPROACH

In what follows, I start by illustrating how this deterrent challenge may arise and why it is so difficult. I then describe how deterrence issues can be examined with the aid of an analytic approach that focuses on influencing the decisions of human beings. This includes actually modeling the decisions of such leaders.[2] I next abstract from this discussion a way to summarize deterrence factors in the form of a "success tree" that can help guide the development of strategies. Finally, I draw on insights from the decision-modeling approach to describe potential deterrent strategies that might be recommended to weak or medium-strong states on the one hand, and strategies that might be recommended to the United States and its partners of the developed world on the other. Many features of the strategies are familiar from other approaches, but some reflect more uniquely the decision-molding's emphasis on the perceptions and reasoning of adversaries.

2. DETERRENCE AT THE BEGINNING OF A NEW CENTURY

Let us begin by considering the challenge of deterrence in rather general terms. Who is to be deterred from doing what, what kinds of deterrence are worth distinguishing, why is deterrence sometimes difficult, and why are there some reasons for believing it is feasible to do better in the future than in the past?

POTENTIAL THREATS

The major states of the developed world want to deter international aggression as part of maintaining regional stability. Usually, however, the objective is discussed in abstract terms. To be more concrete, consider the following range of threats that might arise in the next twenty years as viewed from one American perspective.[3]

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[2] See Davis (1994a) for the best available summary of the approach. For more details, including applications to issues of nuclear and conventional crisis stability, deterrence, and counterproliferation, see Davis (1987), Davis and Arquilla (1991a,b), and Arquilla and Davis (1994).

[3] For more extensive discussion of possible contingencies see Kugler (1995).

- The old standbys of U.S. planning: a renewed threat by Iraq against Kuwait and Saudi Arabia, or an invasion of South Korea by North Korea.
- A future invasion (or coercion) of Poland, Ukraine, or the Baltic States by a future Russia gone sour; an invasion of Taiwan, Vietnam, or a unified Korea by a more militant China; or an invasion of Kuwait and Saudi Arabia by a combination of Iran and Iraq.
- Something that might be called "The Next Bosnia," perhaps once again in the Balkans.

None of these are implausible in the long run. Some, however, are more difficult to contemplate than a repeat of Saddam Hussein's invasion of Kuwait. For example, the threats involving Russia or China are uncomfortable because neither state is behaving aggressively today toward its neighbors and there is no interest in labeling either of them as a future "enemy." If matters go well, Russia and China will develop, liberalize, prosper, and interact continuously with other states as partners in a developing better world. On the other hand, that is not guaranteed and the extreme nationalist movement in Russia is certainly a matter of concern, as is the degree of bitterness expressed by some Russian military officers about the state of affairs in Russia and what amounts to the loss of empire. While Russia's army is currently in disarray, it will remain huge and may pull itself together. It is also unclear whether, in the years ahead, China will view the world in classic balance-of-power terms or take the more liberal perspective reflected in the U.N. charter and the actual behavior of nearly all developed states.

The other complication in thinking about future threats is that many of the threats are to particular weak and medium-strong nations whose security is desirable, but not necessarily a "vital" national interest of the United States or other major states. As a result, it is difficult for governments even to discuss such threats within the context of national defense planning.[4] Nonetheless, any of the aggressions indicated could be a serious affront to broad interests, even if not vital interests. But how do we deal with such threats, especially when they seem so remote and less than vitally important?

In this regard, consider that one of the paramount blunders of the last decade was the judgment by national leaders and strategists as they observed the disintegration of Yugoslavia that a war among the various emerging factions, while highly regrettable, would not strongly affect their own national interests. This view changed grudgingly with CNN's broadcasts of ethnic cleansing, émigrés flowing into neighboring countries and the partial dashing of hopes for a new world order, but it seems clear that current world leaders do not yet know how to deal with threats to less than vital interests. Even if they had personal concepts on the matter, there is great public reluctance to get involved in unnecessary conflicts in foreign lands.

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[4] It has taken several years of debate even to begin the process of expanding NATO to include, e.g., Poland, even though the security of Poland should rather clearly be a vital interest of Western Europe. See, e.g., Asmus, Kugler and Larabee (1995).

USEFUL DISTINCTIONS

Given, then, the existence of potential challenges, especially to weak and medium-strong states that are not obviously vital interests of the United States or other major states, let us next consider deterrence and what we mean by the term, since it has many variants. In this paper,

> *General deterrence* refers to a continuing influence over a period of years. It may exist whether or not there are crises to demonstrate it.
>
> *Immediate deterrence* refers to deterring actions at a particular time, as in deterring actions that would create a crisis or escalate it.
>
> *Direct deterrence* refers to an actor (e.g., nation or coalition) deterring actions against itself.
>
> *Extended conventional deterrence* refers to an actor deterring actions of a second actor against yet a third actor. It can be general or immediate.

By and large, the security challenges facing the United States and its NATO allies involve extended conventional deterrence. America's ally South Korea, of course, has a direct threat today from North Korea. In the distant future, Korea may have a virtual threat from China. Ukraine, the Baltic states, and Poland see direct threats. In what follows, I shall consider challenges of both direct and extended deterrence, of both the general and immediate varieties.

SOBERING REALITIES

There has been so much said about deterrence that one might think that the issues and necessary strategies are well understood. Nuclear deterrence, to be sure, has succeeded for many decades and the leaders of major states fully appreciate the reasons for avoiding nuclear warfare. The reality is much less happy, however, when one looks at direct and extended conventional deterrence. Although it seems to have worked for NATO's Central Region, Huth and Russett have demonstrated that immediate deterrence has failed more often than it has succeeded over a large set of crises in the 19th and 20th century — even though the aggressor ultimately failed roughly 2/3 of the time, which suggests that deterrence "should" have had a better track record.[5] That it has failed so often under such circumstances is sobering and even alarming.

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[5] See Huth (1988) and Huth and Russett (1988). This work has stimulated a great debate on whether democracies do not go to war against each other, and whether a no answer can be inferred from history. See for example Layne (1994, 1995), Russett (1995), Spiro (1995) and Doyle(1995), which contain citations to the earlier literature. See also Arquilla (1995), which expresses pessimism about regional deterrence.

Some of the myriad reasons for deterrence having failed are as follows:

- Nations often fail to appreciate their own interests or to make them known adequately to the aggressor ahead of time.
- Potential aggressors often fail to appreciate the capability that can be brought to bear against them when that capability is distant and abstract, as were the British Navy of the 19th century or the U.S. projection forces of 1990 (Arquilla, 1992).
- Sometimes, aggressors believe that the reasons for their actions are compelling. That is, they "have no choice." Such was apparently the Japanese view prior to Pearl Harbor.
- Nations, especially democracies, have difficulty taking decisive action in response to ambiguous strategic warning. Taking such actions can be considered provocative and dangerous, thereby making such actions politically quite troublesome (Davis and Arquilla 1991b).
- Military leaders are often extremely conservative about taking the kinds of prompt but risky actions necessary to establish or re-establish deterrence in crisis. They worry about being dragged incrementally into a quagmire, about depending on a tripwire that might be tripped with the loss of their soldiers, or about political authorities acting without first establishing consensus.[6]

Even this list is not along enough. Consider that aggressive personalities such as Saddam Hussein and Slobodan Milosevic still seem to ascend to power all too frequently. Consider also that expectations have changed because of the alleged lesson taught by Bosnia about ethnic and religious differences being enduring and fundamental. And, finally, we should also face up to the sober reality that the United Nations is thoroughly ineffective in dealing with security threats requiring prompt and decisive actions.

MORE CHEERFUL CONSIDERATIONS

In light of these discouraging observations (see also Watman and Wilkening, 1995 and Arquilla, 1995), is deterrence even feasible in difficult cases? There are in fact several reasons for optimism:

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[6] This conservatism is discussed sympathetically but critically in Davis and Finch (1993). It can be argued that the uniformed military exaggerated greatly the forces that would be required for intervention in the former Yugoslavia, especially in the early phases when it is plausible that firm military actions such as air strikes and deployments would have convinced Serbia to cease its aggression (Huber, 1994). On the other hand, it can be argued that such actions might not have succeeded and that far greater commitments would then have become necessary.

- By and large, potential aggressors usually seek quick and easy conquest with low risks, thereby suggesting that deterrence "should not" be so difficult (Mearsheimer, 1983).
- Invasion is usually difficult without massed armies, indeed, without massed and mechanized armies with extensive logistics. Such armies are now extremely vulnerable to modern weapons unless the aggressor has air superiority. The issue here is not just modern air forces, but also the advent of highly accurate and lethal long-range artillery and shorter-range accurate mortar systems.[7]
- Conquering territory is arguably not as useful as it once was. Further, conquering territory no longer creates international respect.
- The dark side of nationalism appears to be diminishing on average, although events in the former Yugoslavia show how easily it can be uncovered again.[8]
- There are continuing movements toward democratic processes and shared responsibilities rather than dictatorships of conquest-oriented individuals.

To put it differently, despite the Bosnian debacle, one can argue that overall trends are still favorable. We should not focus unduly on exceptional cases.

3. AN APPROACH TO THE STUDY OF DETERRENCE

OBSERVATIONS AND MOTIVATIONS

Against this background let us now move to a discussion of deterrence theory. Although much has been written on the subject, the usual tendency has been to treat only some aspects of the subject while ignoring or giving short shrift to others. There is nonetheless a substantial volume of serious thought on which to draw in considering deterrent challenges and potential strategies.[9]

Over the last decade I have taken a rather different approach to the study of deterrence than has been customary. It focuses on the decision making of leaders and on

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[7] See Bennett, Gardiner, and Fox (1994) and Davis (1994b, Ch. 2) for discussion of how the nature of war has been changing and how that affects analysis requirements.

[8] The events in Bosnia were not inevitable (Zimmerman, 1995). Arguably, Bosnia is a tragedy made possible by the wrong thugs having too much military power at a time when no one could or would stand up to them, in large part because the European powers did not yet have any consensus of views (Gompert, 1994). Nonetheless, it could not have happened without the dark side of ethnicity and nationality existing.

[9] For discussion of conventional deterrence theory see Mearsheimer (1983), Cimbala (1992), Watman and Wilkening (1995), and, for a survey, Allan, 1994. For the related subject of causes of war see Howard (1984) and Blainey (1973).

"natural" variables. The approach is motivated by several observations. First, the incentives and perceptions of aggressors are often intensely personal, as one can appreciate by thinking of Saddam Hussein's 1981 reaction to the threats of Iran's Khomeni, of current-era North Korean leaders who must worry about their personal survival, of Saddam Hussein in 1990 as he compared trends to his self-image, or to Slobodan Milosevic with his dreams of a Greater Serbia. Historically, we might think of Hitler in this century or, for example, Alexander the Great of antiquity.

A second observation here is that "great men of history," whether appropriately identified as such or merely self-proclaimed, are "special." Many do not reason in the same way as what we consider normal political leaders. Their values are different, their attitudes toward risk are different, and their interpretation of information is different.[10] So also is the reasoning of states dominated by ideological and ethnic-hatred considerations "special."

All of this suggests an approach to deterrence that focuses on influencing the decisions of human leaders or groups of leaders. That is, instead of everything being a matter of abstract power balances, successful deterrence depends on one or more human beings reaching certain conclusions after thinking about the situation and alternatives. The decision makers are attempting to be rational, but an observer might think the reasoning or actions to be "irrational" or "crazy." It is preferable to avoid that terminology because it is misleading and generates the notion that worrying about how to deter will be fruitless.

MODELING THE DECISION MAKING OF ADVERSARIES

With such motivations in mind my colleagues and I have developed an approach for modeling the decision making of adversaries. Consider first a view of the proximate issues at the time of a decision. It can be used in group discussions about decision makers, by decision makers themselves, or by analysts reasoning about what opposing leaders are up to.

Assessment of Options

As mentioned above, potential aggressors *attempt* to make rational decisions. The approach represents this in a simple but unusual way by having the modeled adversary consider options and examine likely and possible consequences of those options, as suggested in Table 1. The format here is that for each option the reasoner estimates the likely outcome, most favorable outcome, and worst-case outcome. He then makes an overall assessment of the option based on these estimates. Each outcome is characterized by one of the values Very Bad, Bad, Marginal, Good, or Very Good.[11]

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10 For closely relevant analysis critical of western deterrence theory, see Dror (1971).

11 Humans seldom reason in so linear and reductionist a manner, but the assumption here is that, at the end of the day, the decision maker is effectively comparing options by considering the array of judgments shown in the table.

Table 1

Generic Decision — Table Format for assessing Options

Option	Likely Outcome	Most Favorable Outcome	Worst-Case Outcome	Assessment
Option 1				
Option *n*				

Table 2 illustrates how a table might be filled in for two different models of the same leader when viewing a particular situation (not defined here). In the example the two models see the same facts differently. Model 1 is perhaps more pragmatic, risk-averse, and pragmatically incremental. He chooses the incremental option, which has low risks. Model 2 is perhaps more ambitious, more risk-taking, and quite unhappy with the status quo and mere marginal improvements. He chooses the aggressive option despite the substantial risks, primarily because he sees great upside potential and also assesses the likely outcome to be at least Good.

Table 2
Illustrative Judgments for Two Models Considering Options

	Most Likely Outcome		Best-Case Outcome		Worst-Case Outcome		Net Assessment	
Option	**Model 1**	**Model 2**	**Model 1**	**Model 2**	**Model 1**	**Model 2**	**Model 1**	**Model 2**
Bargain and compromise	Marginal	Bad	Good	Marginal	Bad	Very Bad	Marginal	Bad
Security threat-ening coercion	Bad	Bad	Good	Good	Bad	Bad	Bad	Bad
Limited attacks	Bad	Bad	Good	Good	Very Bad	Very Bad	Bad	Bad
Full-scale invasion	Bad	Good	Very Good	Very Good	Very Bad	Very Bad	Bad	Good

This simple representation of the decision can be very useful in thinking about someone else's reasoning or one's own reasoning. In its highlighting of likely outcome and both upside opportunities and downside risks, it is a "natural" representation of what we do every day. It is arguably much more natural than expressions in terms of utilities, for example. At the same time, there is much that is implicit, just as there is much implicit when we make our own decisions.

Information Needed

To understand how a potential opponent might reach individual judgments about, e.g., the worst-case outcome (would it be Very Bad, Bad, Marginal, Good, or Very Good?), we need:

- Alternative mental images of the opponent,
- An understanding of what factors are most likely to affect the opponent's reasoning, and
- A way to go systematically from the image and factors to estimates of the opponents' various judgments. This should recognize that reasoning may be psychologically flawed and that the way in which people balance benefits and risks (i.e., their algorithms, not just the factors in the algorithms) depends on their attitudes about the status quo.

Alternative Images

Developing *alternative* images is a crucial antidote to the normal focus on so-called best-estimate thinking. To develop alternative "images" of the opponent's reasoning, one can use a combination of essay writing, attribute lists, influence diagrams, and cognitive maps. As in the example of Table 2, in one image the opponent may be pragmatic and incrementalist; in another, he may be exceedingly ambitious and frustrated. Perhaps he will also feel cornered, surrounded by enemies, and desperate. These images may incorporate (Davis and Arquilla, 1991a) a variety of well known psychological phenomena such as those discussed in the literature under "prospect theory," which may encourage greater or lesser risk-taking than deemed rational by students of decision analysis.

To illustrate some of these concepts, Figure 1 shows contrasting cognitive maps or influence diagrams used in a study of Saddam Hussein (Davis and Arquilla, 1991b). They represent different images of Saddam's perceptions about the economic situation in mid-1990. Figure 1a represents the cause-effect relationships emphasized in the intelligence community's "best-estimate" understanding of Saddam prior to the invasion. Figure 1b represents an alternative image that could readily have been formulated and disseminated at the time, except for the pressures to focus on a single best estimate. It includes additional factors such as Saddam's perception that his problems were the direct result of Iraq being squeezed deliberately by his enemies (the United States, Kuwait, and Saudi Arabia among them). It also highlights the connection between his economic travails and his grandiose ambitions.

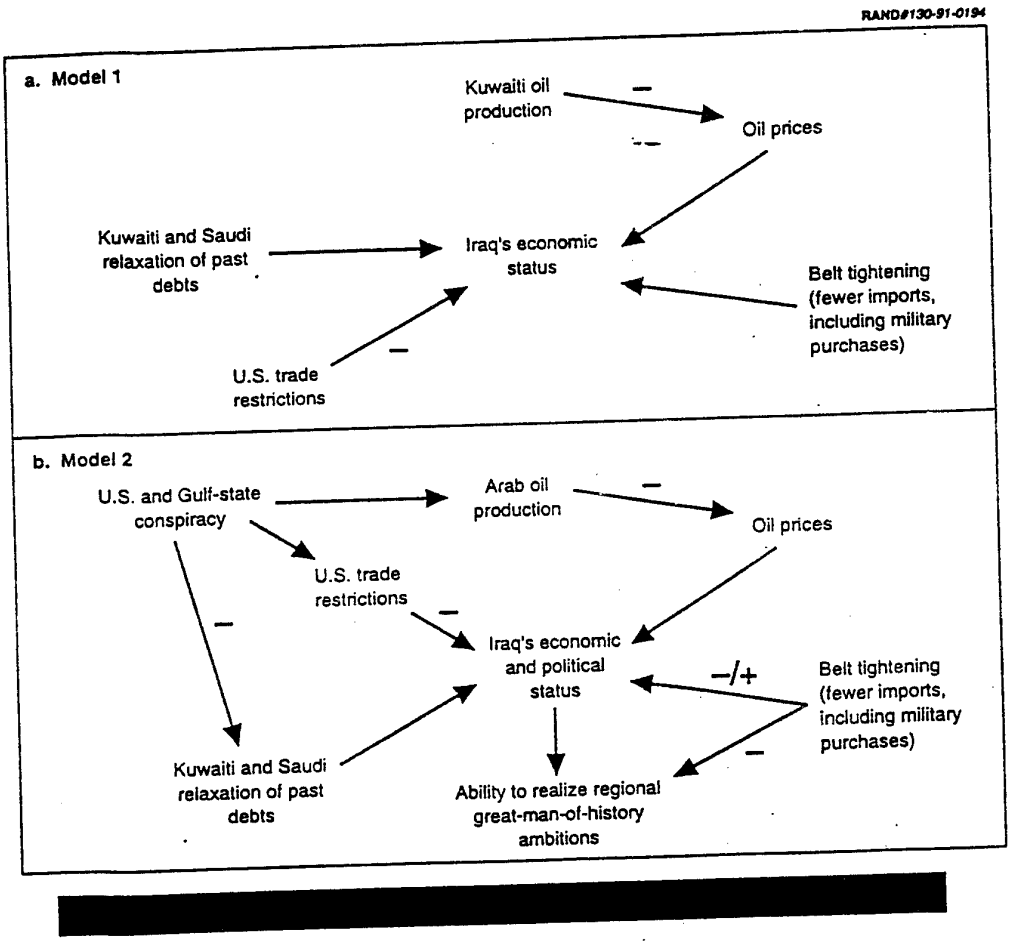

Figure 1 — Saddam's Image of the 1990 Economic Situation: Two Models

While nearly all experts would have agreed on the factors in either diagram being "significant," the dominant mental image (Figure 1a) gave some of the factors little emotional weight. The diagrams highlighted differences of perspective about how Saddam might be

viewing the world. We used a number of such diagram pairs in depicting our two images or models of Saddam Hussein. Although we started our work after the invasion and therefore had no trouble constructing a model to explain it, our work proved both insightful and predictive for Saddam's subsequent behavior through February 1991 (i.e., his failure to pull out of Kuwait in the kind of compromise American strategists feared).

As a side note, decision-modeling approach can be applied not only to crisis decision making, but also to peacetime decisions. For example, a recent study (Arquilla and Davis, 1994) applied the methods to understanding the decisions of potential proliferators. Figure 2 is a composite cognitive map developed in that study to indicate the factors potentially affecting the reasoning of states considering development of nuclear weapons. Note that in our work the most important factor is security. Other factors may include the desire to keep superpowers (read "U.S") out of the region or the desire to coerce neighboring states. More recently, I and colleague Zalmay Khalilzad applied the methods to assessing strategies for dealing with North Korea (unpublished).

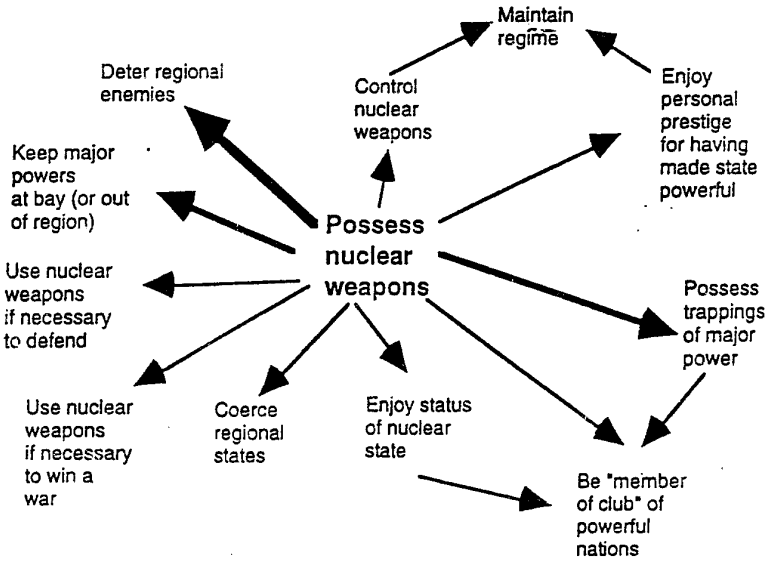

Figure 2 — A Generic Proliferator's Cognitive Map

Factors and Judgments

The next step in the approach is to identify the practical real-world factors that dictate judgments about things such as risks (i.e., in the terms of Table 1, about worst-case outcome). For the case of Saddam Hussein before the invasion decision, the factors affecting perceived risks might have been as indicated in Figure 3.

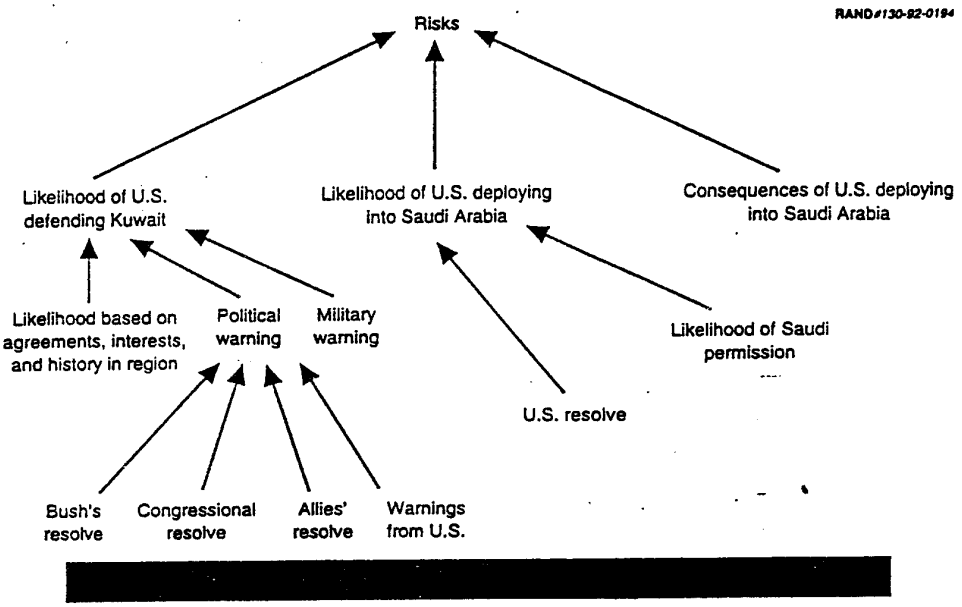

Figure 3 — Possible Map of Saddam's Assessment of Risk Before Invading

By merely "eyeballing" Figure 3 one can reason about what judgments Saddam would have made given the information available on the various factors. It seems easy to understand why he considered risks acceptably low. However, if one of the items is not yet sufficiently explicit (e.g., "warnings from U.S." in the bottom center), the hierarchical decomposition can be continued to greater depth. The warnings from the U.S. included a range of diplomatic communications of varied "firmness," a very small military exercise in the Gulf, and no preparation for large-scale military operations. On balance, Saddam saw the warnings as unimpressive.

One further item deserves mention. In considering what factors affect decisions it is important to recognize that "everything" can matter — everything from, say, knowledge about the military balance in heavy armor to whether the target of potential aggression has somehow personally insulted the decision maker or his state. Some factors may be moral or cultural, while others may be what I call "dangerous ideas," ideas that have a much greater effect on encouraging military action than they "should" have by virtue of logic and reality. Some of these dangerous ideas include deep-seated hatreds and paranoia, as when the target is felt to be the cause of all sorts of troubles.[12]

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12 Examples here include Hitler's scapegoating of Jews, Saddam Hussein's belief that the Kuwaitis were conspiring with the Americans, or the belief of Crusade leaders that they were on a religious mission with God on their side against evil infidels. I first began to emphasize the role of "dangerous ideas" when studying nuclear crisis stability. My conclusion was that nuclear war was far more likely to start from dangerous ideas, such as the belief that the other side was likely to initiate war out of a misreading of current intelligence on "random events," or a

ABSTRACTING FROM THE DECISION MODELING APPROACH: A SUCCESS TREE FOR DETERRENCE

The decision modeling approach can be quite rich, building in highly specific information about a particular leader or group of leaders, and about the context in which the decisions are being made. For the purposes of this paper, however, let us instead skip the decision modeling itself and leap to a more abstract representation of what emerges as a view about how to affect a decision about invasion?

Figure 4 provides an overview representation in the form of a "success tree" showing the determinants of a "good" decision (not to invade) as a hierarchy of variables, the highest level factors of which are as follows:

- The absence of strong incentives for aggression[13]
- Mutual respect, commonality of interests, cultural factors, and tradition (e.g., a U.S. invasion of Canada or a French invasion of the Netherlands is "unthinkable")
- Respect for international norms, notably including the prohibition on military actions that violate another nation's borders, except under highly circumscribed conditions.
- Fear of military defeat, a fear affected by the defender's and protector's military capabilities and readiness, their perceived will, and uncertainties affecting risk.
- Fear of consequences in terms of long, difficult, and costly operations, even if successful.
- Fear of consequence in terms of longer-term punishment:
  - Through near-term military actions (e.g., bombing of the aggressor's military forces, military infra structure, or political and economic structure)
  - Through longer term military actions (e.g., blockades, suppression of air-force and army movements)

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bizarre belief in being able to meaningfully win a nuclear war, than from game-theory calculations of post-first-stike and post-exchange ratios of nuclear weapons (see, e.g., Davis, 1992, which deals with the associated problems of crisis termination).

13 Within a decision model the absence of strong incentives has at least two important effects. First, it means that the assessment of the aggressive options will be less enthusiastically positive than otherwise. Second, it means that the way in which benefits and risks are traded off will be different, with the modeled adversary being more risk-averse than if he had strong incentives, especially a sense of severe threat or a sense of the status quo being altogether unacceptable (perhaps because of grandiose ambitions). In our modeling of decisions we include in the trade off of benefits and risks explicit psychology-based representations of how humans change their trade-off calculus depending on their incentives or compulsions.

— Through political and economic actions: sanctions, boycotts, exclusion from "clubs," ...lost opportunities...

— Through publicity (international radio, television, newspapers, and the world wide web)

I have used the success-tree approach (or its cousin, the fault-tree approach) successfully in a number of strategic studies and models over the last decade. One of its primary virtues is that it highlights visually the various components of the problem on which one may wish to focus while developing strategy — i.e., while identifying ways to influence decisions and actions by one's opponent. A second virtue is that it encourages comprehensiveness and integrativeness (although, in practice, something is usually omitted through inadvertence or misjudgment).

The hierarchical structuring is also important because it demonstrates how one can deal with the analyst's chronic nightmare, the *curse of dimensionality*. The cosmic issues often depend on a vast number of variables, which makes analysis and convergent reasoning very difficult. However, by representing the variables as appearing at different levels of a hierarchy one is essentially specifying a top-down way to analyze the problem: one starts at a high (relatively abstract) level, works at that level until one runs into difficulties, and then goes to the next level of detail as necessary to understand issues and circumstances. This continues recursively to whatever depth is necessary. Such an approach is useful for simplifying discussion. It is also a natural basis for formal decision modeling.[14]

DISCUSSION

To summarize, there are some useful methods for thinking about deterrence (and other issues such as proliferation) in terms of the decision making of human beings. They encourage us to identify key variables, to order them hierarchically, to identify options, and to assess how, under different mindsets, foreign leaders might evaluate the most-likely, best-case, and worst-case outcomes of those options. This can be a systematic way of addressing the issues. Figure 4 is a more abstract representation of the determinants of deterrence, but it can be used as a kind of checklist in thinking about more specific decisions and decision variables. Against this background, let us now turn to what might constitute the principles of good strategy.

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[14] There are a number of studies describing this approach applied to nuclear escalation and de-escalation (Davis, 1986, 1992) and conventional deterrence (Davis and Arquilla, 1991a,b; Davis, 1994b). The early work included building, within a global analytic war game, large-scale artificial intelligence models of Soviet and American decision making in conventional and nuclear crises (Davis, 1986). Recently, computerized models based on the approach have been developed and demonstrated in Germany (Helling and Niemeyer, 1995).

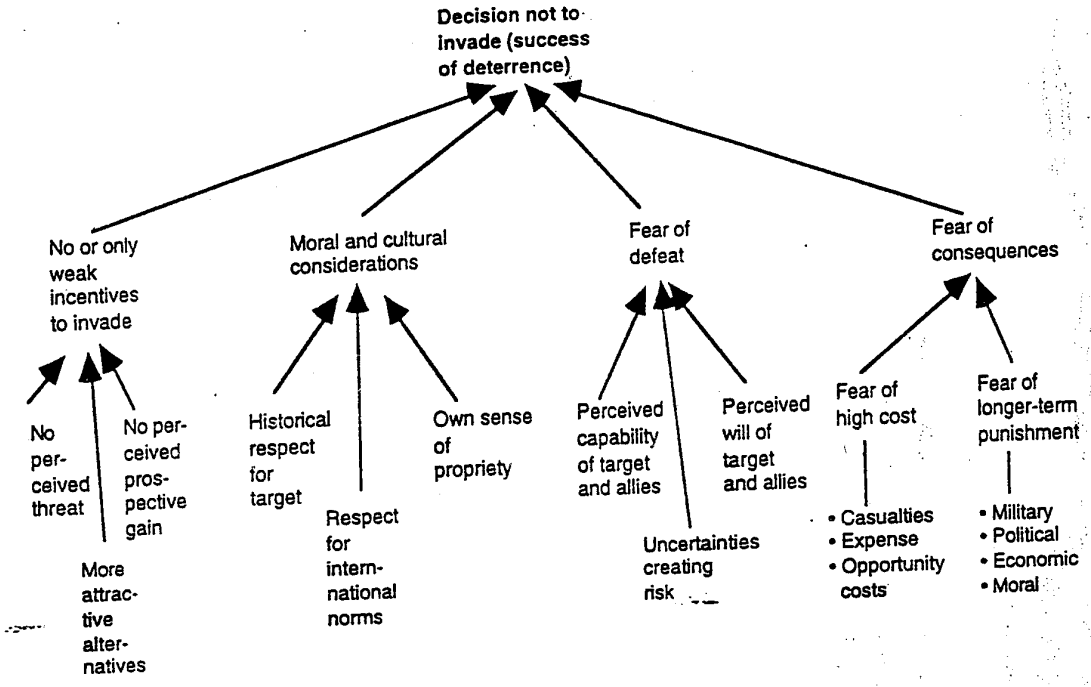

Figure 4 — A Success Tree for Deterrence Seen As a Decision

4. DETERRING STRONG NEIGHBORS: STRATEGIES FOR WEAK OR MEDIUM-STRONG STATES

POTENTIAL INSIGHTS FROM A DECISION MODELING PERSPECTIVE

If one takes a decision modeling perspective, what kinds of insights emerge about how weak or medium-strong states might deter strong neighbors? What kinds of advice might be given to states such as Kuwait, Ukraine, Poland, Taiwan, or a unified Korea in the shadow of China? What advice might be given to even weaker states such as Lithuania, Estonia, and Latvia? In what follows I list the insights that appear to be most important. Many of these could have been derived from a more standard political-science/ international-relations perspective and I make no claims about the results being unique. At the same time, my experience is that by taking a decision modeling perspective and attempting to be realistic about how real human beings make decisions, one finds oneself taking much more seriously than otherwise a number of "soft" factors that are consistently ignored or brushed aside in most discussions of deterrence. These include factors such as the "feelings" that the nations at

issue have toward one another and the particular objectives and values of individual leaders or groups of leaders, which may have little to do with the objectives and values of their publics.

In any case, Figure 4 summarized high level variables important in a decision modeling perspective and if we start from the left and move rightward, the following insights come to mind. They are provided here in the form of advice to weak or medium-strong states.

Minimize Incentives for Invasion or Coercion

Perhaps the most obvious suggestion is to avoid unnecessarily making an enemy of a strong neighbor and, instead, to take measures to eliminate sources of difficulty. Thus, the suggestions here would be as follows:

- "Respect" your strong neighbor.
- Do not threaten its major interests and do not permit provocative actions (e.g., against ethnic minorities with whom the neighbor is in sympathy). Appreciate the politics of your neighbor's country when assessing whether stances or actions are provocative.
- Increase interdependence.
- Defuse "dangerous ideas," both over time and when they arise is specific troublesome contexts.

The issue of "dangerous ideas" merits special discussion because it is seldom discussed. What I have in mind here ranges from formal religious and otherwise ideological teachings that encourage and perpetuate prejudice and hatred (e.g., teachings about Israel and Jews that can be found in Arab schoolbooks) to misconceptions that are important in particular crises. As an example here, when Yugoslavia began to fall apart, one factor influencing Western Europeans and Americans to stand aside was the widespread and fatalistic notion that the people of the Balkans were backward, tribally oriented, highly disputatious, and still fired with the same ethnic hatreds as in the early part of the century. Civil war might be unfortunate, but it was allegedly inevitable. Would history have been different had Western political leaders and citizenries seen the Balkan people as "real people" who had in fact been living together for many years with substantial suppression of the ancient hatreds? It is impossible to say, but the Western misimpressions were not helpful. They were dangerous ideas that might have been defused by a public relations campaign.

Lay the Groundwork for Favorable Moral and Cultural Considerations

Eliminating sore points is important, but building positive feelings is at least equally so. Interdependence and continual close contact guarantee nothing (in principal they could increase hatreds), but, by and large, they help create good relations. The obvious suggestions here are as follows:

- Deal frequently and openly with your neighbor, rather than maintaining an arms-length posture and fostering misperceptions.

- Encourage cultural exchanges and cooperative ventures.
- Attempt to draw your neighbor into organizations and forums (e.g., CSCE) that focus on high-minded considerations, repeat the principles of international relations constantly, and lead to joint efforts to solve regional problems.

If Feasible, Maintain a Substantial Defense, With Allies

Eliminating incentives for aggression and improving relations if fundamental in improving general deterrence (to the point at which aggression is so "unthinkable" that it isn't thought of as something to be deterred). For countries that have a choice, however, there is no substitute for defense, because circumstances and intentions change. The suggestions here go beyond the obvious by specifically highlighting the need to avoid "holes" in the defense. Defense should not be thought of as a "political" issue, but rather a military issue. It is not enough to have an army; a nation also needs to have a sensible strategy, properly prepared forces, and preparations that anticipate clever attacks by the adversary. The admonitions, then, are:

- Have a visibly competent defense, even if weak, one that would exact a price and assure against a coup d'état.
- Worry about information warfare and related coups d'état, not just straightforward invasions with stereotyped battles. Avoid rigid defenses that could be bypassed or defeated quickly. Remember that wars have often been won by aggressors who did *not* enjoy a strongly favorable balance of power, but whose leaders were willing to take risks.
- Especially when faced with an aggressively oriented *personality* as the neighbor's leader, maintain high readiness and do not hesitate in crisis to raise readiness further.[15] Do not imagine that such leaders reason in the same "pragmatic" way as normal leaders, or that they merely seek incremental changes.
- Encourage an armed population and prepare for a defense in depth that could exploit area (including urban, jungle, and forested areas).
- But, to avoid creating provocations or incentives for invasion, develop a defensive posture with minimal capability for aggressive operations over large distances. The criteria here include logistics as well as forces.

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15 See Ronfeldt (1994) for an interesting discussion of the kind of malignant personality that has caused a great deal of trouble historically. He refers to the hubris-nemesis complex, drawing on mythological and literary allusions. Saddam Hussein and Serbia's Slobodan Milosevic fit the pattern. Psychiatrist and professor Jerrold Post has worked on such matters for years, much of it with the Central Intelligence Agency where he did personality profiling. See Omestad (1994) for a semi-popular discussion of profiling in government, including Post's. See Davis and Arquilla (1991b) for the author's cut at such matters.

- Invest first in ground-based air defenses and lethal indirect-fire systems, rather than, say, high-technology high-prestige air forces that would probably not survive more than a day against a strong neighbor's air forces.
- Have powerful allies and, preferably, formal agreements, perhaps including the neighbor.
- Use, but try to avoid depending on, collective-security arrangements.
- Encourage forward deployment of allied forces, even to the point of prepositioning of material and allowing in-country forces under one rubric or another, since such actions affect perceived will and capability of allies and greatly enhance practical capability. Encourage joint exercises to make ties stronger and visible. Recognize that over-the-horizon capabilities cannot be redeployed overnight.

Encouraging forward deployment may be a bitter pill politically, but there is no adequate substitute for assuring that one's allies will be perceived as committed.

Use Arms Control To Enhance Military Security and Political Relationships

One of the most fruitful class of measures generically appears to be arms control focused on how forces are located and postured, rather than on their precise size and configuration. Many proposals for arms control can be counter productive, but others can substantially improve stability. In particular:

- Seek "operational arms control" agreements to limit and constrain military postures so as to make surprise attack more difficult and defense easier (Davis, 1988).

More controversial is the idea of *nonoffensive defense*:

- Seek formal or informal arms control agreements having the effect of shifting emphasis toward force structures and postures with a lower percentage of "offensive" weapons, notably tanks[16] and related support logistics (Møller, 1995).

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16 The subject of nonoffensive defenses is complex. See, for example, Huber (1990) and Huber and Avenhaus (1993). Recent work (NATO, 1995) tends to dim hopes for finding distinctions between offensive and defensive weapons. For example, it gives simulation results undercutting claims that infantry is more stabilizing than tanks, at least in tactical-level engagements. Nonetheless, there are clear differences at the operational and strategic levels between force structures suited or not suited to large-scale offensives. Further, it is difficult for a weak or medium-strong state to have a force structure that truly threatens a strong neighbor. All this suggests that any negotiation of nonoffensive defense concepts should not focus unduly on weapon-level formulas.

Don't See Nuclear Weapons as a Panacea

It is difficult to argue from some high moral position that a weak state faced with a large and worrisome neighbor should not have nuclear weapons. Indeed, thoughtful American presidents have for decades chosen to quietly tolerate nuclear activities by Israel. It may have been hypocritical at one level, but the ultimate judgment was sound. The question is how far should this go? Again, what advice would an honest and objective strategist give to a weak, or even a medium-strong state?

I admit ambivalence and, on bad days, some fatalism about proliferation. Mearsheimer and others arguing the case for the stabilizing role of nuclear weapons have a point (Meirsheimer, 1990). However, the following arguments in the form of advice appear to me persuasive on balance:[17]

- Nuclear weapons will assuredly *create* problems and may or may not solve the security problem. Also, be very skeptical about claims that conventional deterrence is infeasible. Unless the neighbor has strong incentives for invasion, a moderate defense may very well be adequate. Over time, historical and cultural factors will improve general deterrence further.
- Having nuclear weapons guarantees that you will be seen as a threat and targeted in detail by your strong neighbor. In a confusing crisis the urge to "preempt" or to engage in preventive war might be very high for the neighbor.
- Making nuclear weapons survivable is extremely difficult for most states. Even supposedly secure facilities (hardened silos, missiles in caves, etc.) are subject to attacks by special operations forces and missiles or aircraft with specialized weapons. Command and control is likely to be far more vulnerable in reality than its owners will admit.
- Controlling nuclear weapons is a nontrivial challenge and could be a critical factor if internal conflicts arise (civil war, a military coup, terrorist events).
- To greater or lesser extent, ownership of nuclear weapons will impose costs. The nuclear-club states, and indeed the NPT states more generally, will discriminate — not completely because of their own self interest, but to some extent, which could be expensive and humiliating. Bucking the system in this respect will make being in "the club" of developed states more difficult.[18]
- Do not imagine that actually using nuclear weapons is so easy as proponents of nuclear-deterrence theory sometimes seem to suggest. If one uses nuclear

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17 These extend points developed in the spring of 1993 for lectures in Ukraine on defense planning.

18 One of the major factors that influenced Sweden to quit its nuclear-weapon program was apparently the desire to be part of the "good-guy club." The issues were both practical and matters of self-image. See Cole (1994)

weapons against a neighbor's city, the response would be annihilation. Nuclear weapons arguably do nothing but deter nuclear use. Do you imagine yourself truly capable of a "Samson option?"

None of these arguments are ultimately compelling, but they seem persuasive in most cases of practical interest. Israel still appears to be the obvious exception, primarily because Israel is so small and Israel's neighbors remain strongly and implacably hostile, despite the continuing peace process, which may change this in time. In a situation where religious or ethnic-hatred issues reign, we should not expect the normal rules of conventional deterrence to apply readily. Ideologues are willing to take greater risks, greater casualties, and even losses, in pursuit of their goals.[19]

5. EXTENDING DETERRENCE IN DEFENSE OF WEAK OR MEDIUM-STRONG STATES

Let us next turn to what major states can do to extend deterrence to weak or medium-strong states. The challenges are great, but there are nonetheless some principles:

Recognize and Express Interests, Including Less-than-vital Interests, Explicitly and Credibly.

The recurring problem here has been that nations have been ambivalent in peacetime about whether to get involved in events elsewhere, especially in the absence of an immediate threat, and especially when "getting involved" could antagonize another nation with which better rather than poorer relations are desired. This was the problem with the U.S. deterring Iraqi invasion. We see the same kinds of issues arising today in debates about NATO expansion. NATO expansion could, on the one hand, fill vacuums and establish the interests of the West in the continued security of various eastern and central European states. On the other hand, it could antagonize Russia and provide fuel for the dangerous Russian nationalist movement.

Interestingly, even the "aggressive" proponents of NATO expansion have so far limited their goals to countries such as Poland. But what about Ukraine and the Baltic states? On the one hand, it is difficult to imagine NATO defending these states in a traditional manner. It is also clear that NATO's interests in Ukraine and the Baltic states are less than "vital." I would argue, however, that aggression against either of them would be altogether unacceptable in the modern world and that their security is very much a matter of NATO interest. Strategy, then, would include expressing those interests frequently.

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19 See Dror (1971) for an early discussion of this and other nonstandard threats such as terrorism.

Prepare Politically and Militarily for Prompt Intervention Given Strategic Warning

If there is a single fatal flaw in extended deterrent strategies based on decisive military moves in crisis, it is that democracies have a great deal of trouble being decisive in ambiguous circumstances. Even "obviously" prudent military measures such as prepositioning military forces in the region and enhancing states of readiness for deployment are often politically difficult because of concerns about provocation or escalation of tensions.[20]

Such difficulties could perhaps be greatly mitigated by facing up to them in peacetime and developing much of the necessary political consensus, both domestically and politically, by including appropriate people in seriously conducted crisis games. Then, upon receiving strategic warning of a real crisis, the key people (including legislators and major allied leaders) could be brought into such gaming early so that they could themselves work through the logic for acting rather than dissembling. If this were successful, leaders such as the U.S. president could take appropriate hedging measures without being savagely attacked on the political front.

Beware of "Deterrent Actions" Without Backup

Many of those who would support early intervention to deter invasion of weak states or debacles such as has occurred in the Balkans tend to assume that a clear show of force would suffice. Often, however, their "clear show of force" would be long on show and short on capability. This is inherently dangerous when the object of attention is a strong and aggressive personality willing to take risks. Such figures tend to be impressed by power, not empty threats. And, indeed, shows of strength by Western European nations or NATO might well be empty because there might not be the political support for going further. An important distinction here is shows of force that do and do not put that force in harm's way, with the latter being far more effective than the former because they reduce the room for dithering if war begins. To put it differently, there is still a role for tripwires. However, when dealing with risk-taking aggressors, wise leaders will not deploy tripwires without starting the process of providing massive follow-up. Military conservatism on this score is well justified.

Enhance the Credibility of Defense With Forward Presence

Continuing the theme that communicating credibly the willingness to fight is important, it seems important to increase rather than decrease forward deployments, preferably in forms that cannot be readily bypassed.

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20 A good example of this is the refusal by General Colin Powell to deploy American Maritime Prepositioning Ships from Diego Garcia and elsewhere when strategic warning existed of a possible Iraqi invasion of Kuwait. Apparently, Powell felt that such a move would potentially be a step toward commitment of U.S. forces to a war that did not yet have any political consensus, and which did not merit U.S. intervention (Woodward, 1992).

Important alternatives to permanent stationing of tripwires include: (1) prepositioning equipment in the country at issue to permit rapid reinforcement in crisis; (2) creating other infrastructure to facilitate rapid reinforcement; (3) conducting frequent joint exercises in the country to remind everyone of security ties, even if informal; and (4) maintaining naval and Air Forces in the region.

Plan To Supplement The Defender's Defenses Quickly and Optimally

If we turn from abstractions to specifics, considering the real or virtual threat to a particular weak or middle-strength state, it is usually the case that quick substantial enhancements of defense capability are possible if merely the right basis is laid in advance. This, however, may involve extensive coordination in the realm of command and control, logistics, and combined operations. Further, it may involve deploying tailored capabilities, some of them in short supply, rather than mere "mass" of equipment. Often, "smart" intervention is likely to mean providing air forces with precision-strike capability and superb theater-level reconnaissance and intelligence capabilities, along with the necessary command and control to exploit it.

Another form of "smart" intervention might be to supplement the defender's forces with high quality indirect fire weapons that would greatly increase the vulnerability of attacker tanks and permit a kind of defense in depth (see also Kelley, Fox, and Wilson, 1994).

Deter Use of WMD

An important element of extended deterrence is avoiding self-deterrence, as well as coercion of regional allies. The problem, again, is WMD. While defense against the WMD threat is essential, the preferred strategy here is to *deter* use of WMD, essentially by credibly threatening massive response (see, e.g., Gompert, Watman, and Wilkening, 1995). With today's precision weapons, such a response could be conventional. Further, it could have a "countervalue" or "counterforce" character, depending on needs. Countervalue attacks could be quite discriminating.

Use Arms Control and Other International Mechanisms To Limit Forces and Constrain Force Postures in Ways Promoting Stability

Here there is a complete commonality with the advice offered to countries concerned about direct deterrence. Operational arms control in particular (e.g., limits on the deployment locations and states of readiness) of forces can drastically alter the quality of strategic warning, even to the point of making justified preemptive attacks plausible. This, in turn, is becoming increasingly important as the result of the proliferation of weapons of mass destruction and missiles: were the United States to intervene in a regional crisis five or ten years from now, there might be a high premium on early and decisive counterforce attacks on the aggressor's means for delivering nuclear, chemical, and biological weapons.

Develop Theater Missile Defenses

WMD issues are becoming so important that it seems clear that defenses against WMD are now essential. In this context defense includes counterforce, post-boost intercept, terminal intercept, and passive measures such as dispersal and hardening. Without such defenses, the option for intervention and, therefore, the credibility of extended deterrence, may be severely undercut.

Seek Alternatives to Current U.N. Mechanisms

With very few exceptions it seems exceedingly unlikely that the United States or its allies will be willing to intervene in regional conflicts without clear legitimacy in the international community. Unfortunately, the United Nations currently is incompetent in dealing with military crises, especially when competence includes speediness and decisiveness in circumstances of ambiguity. Further, the prospect of depending on U.N. military operations, as distinct from U.N.-sanctioned operations led by the United States or some other major power, should be sobering for anyone thinking about the challenges of successful immediate deterrence. The major nations need to develop alternative ways of legitimizing and conducting the necessary actions. Ideally, this would mean changes within the U.N. structure and decision making, but that may not prove feasible.

6. RECOGNIZING THAT IMMEDIATE EXTENDED DETERRENCE MAY FAIL

A key element of deterrence planning should be recognition that immediate deterrence, however important, is a slender reed on which to base security. Immediate deterrence has failed too many times in the past and the reasons for it having failed are still salient. It follows that in addition to plans for military and other measures in crisis, an overall strategy of extended deterrence should:

- Seek to accomplish as much as possible through *general* extended deterrence — e.g., creation of security ties, interdependence, etc.; also, reduction of the causes of conflict.
- Make it plain (e.g., through prior security agreements) that aggressors will be severely punished by the international community, whether or not their invasions are successful. The punishments could be military (including countervalue attacks), political (pariah-state status), and/or economic (e.g., isolation), but they should be certain and tough, even if not perfectly enforced.
- Punishment options should be tailored to address what matters to the decision makers of interest.
- Military planning should recognize the potential necessity of operations to restore lost territory, perhaps over a period of many months or years, and perhaps with operations launched over many hundreds of kilometers away because of the original invasion having been successful and established defenses. Potential aggressors should not believe that a quick success ends the game.

PUNISHMENT AS A STRATEGIC OPTION

Because immediate deterrence may fail, especially with respect to attacks on weak or medium-strong states defense of which do not represent vital interests of potential protectors, the United States and the civilized and forward-looking world community as a whole should worry more about developing and advertising credible options for severely punishing aggressor states — not just in the immediate aftermath of an attack, but for many years thereafter. Perhaps the metaphor should be of "putting aggressor states in jail" for terms of, say, 5-10 years. In other instances, an appropriate response might include military attacks to destroy substantial portions of the aggressor's military forces or infra structure (e.g., its navy) or appropriate elements of the civilian value structure, all with conventional weapons. With sufficiently high accuracy and targeting, such attacks could be relatively discriminate. The attacks could be one-time events, "punishment," but not the start of a continuing war. There need be no quagmire.

The principal issue here is that of credibility. Would the world community or leader states punish militarily a successful aggressor that also possessed nuclear capabilities and the means to deliver nuclear weapons against their own countries (either by missiles or by terrorists smuggling devices into them)? The initial reaction of many observers is, "decidedly not," unless there were vital interests at stake. While the argument is plain enough, its implications seem puzzling in instances in which the potential punisher states have escalation dominance in every dimension and the aggressor is rational, however unpleasant. Certainly, military punishment options would be risky, but the long-run stakes could be high.

The argument is unlikely to be resolved, but a few observations appear to be objectively valid. In particular, *general* deterrence by threat of punishment options could be much enhanced by (1) missile defenses; (2) well exercised and advertised military *options* for selective but severe punishment, coupled into long-term isolation activities politically and militarily; and pooling of risk by international cooperation (e.g., a punishment option by NATO might be better than a punishment option only by the United States).

This enhancement of general deterrence seems to be a good investment. Enhancement of immediate deterrence through threat of punishment will be a risky proposition, but competition in risk-taking is hardly a new issue.

7. CONCLUSIONS: CHALLENGES FOR SECURITY STRATEGY, DEFENSE PLANNING, AND CRISIS DECISION MAKING

What, then, can be said in summary about deterrence in defense of weak states, especially when one takes the perspective that deterrence is ultimately about influencing decisions?

The principal conclusions of this paper are as follows:

- Successful deterrence depends on a net assessment by human decision makers of many different factors. The "soft" factors, such as the quality of relations between the states in question, matter as much as the "harder," military factors.
- Conventional deterrence should not in most instances be particularly difficult for medium-strong states so long as they can deny the potential invader high confidence in a quick and relatively painless victory. The principal exception is when the potential invader sees compelling stakes, usually in the form of a very serious threat to itself. The stakes may be "personal" rather than national, which implies the need to model the leaders as well as the situation.
- The ingredients of a deterrent defense include avoiding major vulnerabilities such as vulnerability to surprise attack, attack from a nonstandard direction, or a sudden breakthrough of a brittle front line with no depth.
- Although nuclear capability could enhance deterrence, it is also likely in most instances to exacerbate tensions and assure that careful military plans will be laid for attack. Nuclear capabilities are likely to be vulnerable and therefore might be destabilizing in crisis.
- Nations such as the United States and its major allies can extend conventional deterrence to less-than-vital interests, but it is not trivial to do so. Tactics that can help include forward basing, prepositioning, joint exercises to supplement the defender's capabilities with specialized high-leverage capabilities such as air power, precision strike, and information dominance.
- The likely effectiveness of conventional deterrence and extended conventional deterrence could be greatly enhanced by "operational arms control" constraining the location and readiness of offensively capable forces. Arms control could also help shepherd the movement of force structures toward compositions more suitable for defense of borders and internal-security actions than long-distance offensive force projection.
- Because immediate deterrence will not always work, especially if it depends on denial capability or prompt actions such as the dispatch of tripwires backed up by protector states, the United States and the international community more generally need to focus more on the development of credible and effective punishment options. These should include the ability to destroy both military and civilian infra structure, as well as military forces, but they should also consider mechanisms for highly certain political and economic isolation (e.g., prior agreement within regional security frameworks to punish aggressors in such ways).
- Extended deterrence's credibility will depend increasingly on the ability of the protector states to trump threatened use of weapons of mass destruction. The trumps may include the threat of massive conventional retaliation, nuclear retaliation, preemption against WMD and delivery means, and the capacity to defend forces and allied countries, at least significantly, with missile defenses.

- When thinking both of general and extended deterrence it is fruitful to model the reasoning of the states to be deterred, developing alternative models to reflect different mind sets that may well be at work. Such models can be very helpful in assessing alternative strategies by making it easier to understand their likely and possible effects on the thinking of human beings with personal agendas, many misperceptions, and a range of options that include not invading.

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BIBLIOGRAPHY

Allan, Charles T. (1994), "Post-Cold War Deterrence", a research survey, *The Washington Quarterly*, Vol. 17, No. 3, Summer.

Arquilla, John (1992), Dubious Battles: Aggression, Defeat, and the International System, Crane-Russak, Washington.

Arquilla, John (1995), "Bound To Fail: Regional Deterrence After the Cold War," *Comparative Stratetgy*, Vol. 14, No. 2, April-June.

Asmus, Ronald, Richard Kugler and F. Stephen Larabee (1995), *NATO Expansion: The Next Steps*, RAND, Santa Monica, CA.

Bennett, Bruce, Sam Gardiner, and Daniel Fox (1994), "Not Merely Preparing for the Last War," Chapter 15 of Davis (1994b).

Blainey, Geoffrey (1973), *The Causes of War*, The Free Press, Macmillan Publishing Co., New York.

Cimbala, Stephen (1992), *Force and Diplomacy in the Future*, Praeger, New York.

Cole, Paul (1994), The Conduct of a Nuclear-Capable Nation Without Nuclear Weapons: Sweden Without the Bomb, RAND, MR-460.

Davis, Paul K. (1987), "A New Analytic Technique for the Study of Deterrence, Escalation Control, and War Termination," in Stephen Cimbala (ed.), *Artificial Intelligence and National Security*, Lexington Books, D.C. Heath and Co., Lexington, MA.

Davis, Paul K. (1988), Toward a Conceptual Framework for Operational Arms Control in Europe's Central Region, RAND, R-3704-USDP.

Davis, Paul K. (1992), "Behavioral Factors in Terminating Superpower War," in Stephen Cimbala and Sidney R. Waldman (eds.), *Controlling and Ending Conflict: Issues Before and After the Cold War*, Greenwood Press, New York.

Davis, Paul K. (1994a), "Improving Deterrence in the Post Cold-War Era: Some Theory ad Implications for Defense Planning," Chapter 8 in Davis (1994b).

Davis, Paul K. (1994b), editor, *New Challenges In Defense Planning: Rethinking How Much Is Enough*, RAND, Santa Monica, CA. An integrated anthology of RAND analyses in the post cold-war era.

Davis, Paul K. (1994c), "Protecting the Great Transition," Chapter 6 in Davis (1994a).

Davis, Paul K. (1994d), "Planning for Adaptiveness," Chapter 4 in Davis (1994a).

Davis, Paul K. and John Arquilla (1991a), Thinking About Opponent Behavior in Crisis and Conflict: a Generic Model for Analysis and Group Discussion, RAND, N-3322-JS, Santa Monica, CA.

Davis, Paul K. and John Arquilla (1991b), Deterring and Coercing Opponents in Crisis: Lessons from the War with Saddam Hussein, RAND R-4111-JS, Santa Monica, CA.

Davis, Paul K. and Lou Finch (1993), Defense Planning in the Post Cold-War Era: Giving Meaning to Flexibility, Adaptiveness, and Robustness of Capability, RAND, Santa Monica, CA.

Doyle, Michael (1995), Correspondence, *International Security*, Vol. 19, No. 4 (Spring).

Dror, Yehezkel (1971), *Crazy States: A Counterconventional Strategic Problem*, Heath Lexington Books, D.C. Heath and Co., Lexington, MA.

Gompert, David (1994), "How to Defeat Serbia, *Foreign Affairs,* Vol. 73, No. 1.

Gompert, David, Kenneth Watman, and Dean Wilkening (1995), *U.S. Nuclear Declaratory Policy,* RAND MR-596, Santa Monica, CA.

Helling, Klaus and Björn Niemeyer (1995), *Risikoverhalten in Krisensituationen (Risk-Taking Behaviour in Crisis Situations),* Institute für Angewandte Systemforschung und Operations Research, Universität der Bundeswehr, Munich, Germany.

Howard, Michael (1984), *The Causes of Wars*, Harvard University Press, Cambridge, MA.

Huber, Reiner K. (ed.) (1990), Military Stability: Prerequisites and Analytic Requirements for Conventional Stability in Europe, NOMOS Verlagsgesellschaft, Baden-Baden.

Huber, Reiner K. and Rudolf Avenhaus (eds.) (1993), *International Stability in a Multipolar World*, NOMOS Verlagsgesellschaft, Baden-Baden.

Huber, Reiner (1994), "Deterrence in Bosnia-Herzegonvina: A Retrospective Analysis of Military Requirements Before the War," *European Security*, Vol. 3, No.3, Autumn.

Huth, Paul (1988), *Extended Deterrence and the Prevention of War*, Yale University Press, New Haven, CT.

Huth, Paul and Bruce Russett (1988), "Deterrence Failure and Crisis Escalation," *International Studies Quarterly*, Vol. 32, pp. 29-45.

Jablonsky, David (1991), *Strategic Rationality Is Not Enough: Hitler and the Concept of Crazy States*, Strategic Studies Institute, U.S. Army War College, Carlise Barracks, PA.

Kelley, Charles, Daniel Fox, and Barry Wilson (1994), "A First Look at Defense Options for Poland," in Davis (1994a).

Kugler, Richard (1995), Toward a Dangerous World: U.S. National Security Strategy for the Coming Turbulence, RAND, Santa Monica, CA.

Layne, Christopher, "Kant or Cant: The Myth of Democratic Peace," *International Security*, Vol. 19, No. 2 (Fall).

Mearsheimer, John (1990), "Back to the Future: Instability in Europe after the Cold War," *International Security*, Vol. 15, No. 1.

Mearsheimer, John (1983), *Conventional Deterrence*, Cornell University Press, Ithaca, New York.

Møller, Bjørn (1995), "Common Security and Non-Offensive Defence: Are They Relevant for the Korean Peninsula," presented at the International Conference of the Korean International Studies, June 16-17, Seoul. See also his book *Common Security and Non-Offensive Defence, a Neorealist Perspective*, Lynne Rienner, Boulder CO, 1992.

Olmstead, Thomas, "Psychology and the CIA: Leaders on the Couch," *Foreign Policy*, No.95, Summer.

Ronfeldt, David (1994), Beware the Hubris-Nemesis Complex: A Concept for Leadership Analysis, RAND, Santa Monica, CA.

Russett, Bruce (1995), "And Yet It Moves," a correspondence item, *International Security*, Vol. 19, No. 4 (Spring).

Spiro, David (1995), *International Security*, Vol. 19, No. 4 (Spring).

Watman, Kenneth and Dean Wilkening, with John Arquilla and Brian Nichiporuk (1995), *U.S. Regional Deterrence Strategies*, RAND, Santa Monica, CA.

Wilkening, Dean and Kenneth Watman (1995), *Deterring Nuclear Threats from Regional Adversaries*, RAND, Santa Monica, CA.

Wolf, Barry (1991), *When the Weak Attack the Strong:Failures of Deterrence*, RAND, N-261-A, Santa Monica, CA.

Woodward, Bob (1991), *The Commanders*, Simon and Schuster, New York.

Zimmerman, Warren (1995), "Origins of a Catastrophe: Memoirs of the Last American Ambassador to Yugoslavia," *Foreign Affairs*, March/April.

NATO ADVANCED RESEARCH WORKSHOP STRATEGIC STABILITY IN THE POST-COLD WAR WORLD AND THE FUTURE OF NUCLEAR DISARMAMENT

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PREFACE

This Report contains a Consensus Report and the papers submitted to the April 6 - 10, 1995 NATO Advanced Research Workshop *on Strategic Stability In The Post-cold War World And The Future Of Nuclear Disarmament*, held in Washington D.C., United States Of America at The Airlie Conference Center. The workshop was sponsored by the NATO Division of Scientific and Environmental Affairs as part of its ongoing outreach programme to widen and deepen scientific contacts between NATO member countries and the Cooperation Partner countries of the former Warsaw Treaty Organization.

The participants recognize that the collapse of the former Soviet Union has left a conceptual vacuum in the definition of a new world order. Never before have the components of world order all changed so rapidly, so deeply, or so globally. As Henry Kissinger points out, the emergence of the new world order will have answered three fundamental questions: " What are the basic units of the international order? What are their means of interacting? and What are the goals on behalf of which they interact? "

The main question is whether the establishment and maintenance of an international system will turn out to be a conscious design, or the outgrowth of a test of strength. The concept of a planning framework that could shape or govern these interactions is emerging and may now be at hand. Capturing this emerging framework is the thrust of this NATO-sponsored Advanced Research Workshop.

OBJECTIVES OF THE ADVANCED RESEARCH WORKSHOP (ARW):

The objective of this workshop is to reach a consensus on defining a model (calculus) for Strategic Stability in a changing multipolar world in the presence of weapons of mass destruction — the model (calculus) being the core of a conscious design to shape or govern the interactions of nation-states in a new world order.

The basis for constructing this model will be regional models that reflect the role weapons of mass destruction play in each nation's early twenty-first century security strategy. These models, among other things, will address the effect that future modernization,

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[1] Edited by M. L. Best, Jr., J Hughes and A. A. Piontkowsky , Presented by M. L. Best

reductions in weapons (to levels below START II), and proliferation will have on the many dimensions of Strategic Stability.

The participants have begun to rigorously document this multipolar model, develop each dimension of Strategic Stability, and identify issues for further investigation.

FRAMEWORK FOR THE ARW:

A fully described model is a necessary condition for a conscious design to shape actions toward Strategic Stability. The following taxonomy of the dimensions of Strategic Stability was accepted by the participants as the first step toward such a model.

- Stability in Geo-politics and Balance Of Power
- Arms Race Stability
- Deterrence Stability; Crisis Stability; First Strike Stability
- Stability in the presence of clandestine Proliferation

The focus of their investigations are to extend each dimension of stability into a dynamic multipolar world. These investigations will focus on the role and effect of proliferation of nuclear weapons. Regional models reflecting each nation's security strategy will be developed and will form the basis for constructing a global model. Rigorous operational definitions and metrics will be necessary to complete the fully described model.

This unprecedented gathering of top academic, scientific and military experts from the USA, Russia, United Kingdom, France, China, India, and Israel would not have been possible were it not for the tireless and selfless devotion of the participants and the sponsorship of the NATO Scientific Affairs Division. As in any gathering of bright and outspoken individuals it is not possible to reach consensus on all points by all participants. However, after four grueling days the participants reached general agreement that is captured in the "Consensus Report". Then each participant made a individual contribution that further fleshes out the dimensions of Strategic Stability.

This amazing gathering is now the foundational work that can provide joint concepts for all leaders of the nuclear powers to shape their decisions for the next decades. And for the first time they can base their decisions on agreed scientific facts, not just political judgements. The turbulence of the emerging new world will no doubt bring unprecedented challenges and I am sure that the delegates are unanimous in their view that new solutions to tomorrow's problems can only be achieved through unprecedented cooperation and dialogue.

Mel Best, Workshop Director

LIST OF PARTICIPANTS

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THE CONSENSUS REPORT

THE PARTICIPANTS OF THE NATO ARW
"Strategic Stability In The Post Cold War World
And The Future Of Nuclear Disarmament"
Airlie Conference Center: April 6-10, 1995
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1. PART 1: OVERVIEW & EXECUTIVE SUMMARY

1.1 BACKGROUND

NATO's Advanced Research Workshop (ARW) on "Strategic Stability in the Post-Cold War World and Future of Nuclear Disarmament" assembled at a critical moment for the international system. It is increasingly clear that the end of the Cold War and dismantling of the bi-polar model of the world necessitates a fundamental re-examination of the traditional concepts of stability. Attempts to deal with new problems of the multi-polar world on the basis of the traditional concepts has proven to be inadequate, counter-productive and sometimes regionally disastrous.

1.2 EMERGING AREAS OF DISAGREEMENT

- A comparatively new phenomenon in recent months is a growing divergence between Western and Russian perceptions of World development. During frank and substantive discussions the ARW discovered that this discrepancy has a theoretical nature too.

- The apparent points of disagreement (former Yugoslavia. NATO enlargement, some aspects of Middle East policies, etc.) are not reasons for, but a manifestation of rowing mistrust, threatening a potential "Cold Peace" period. This mistrust is exacerbated by a conceptual gap between NATO and Russian perceptions of the world.

- After the end of the Cold War a considerable part of Russian public opinion, oriented on Russian reintegration into Europe, was looking for a fundamental change in the old stability and security paradigms. In the nuclear field that means a transition from the MAD concept of stability, codifying hostilities in relations, toward more sophisticated ways of ensuring nuclear stability, based more on such tools as protection and counter-proliferation.

- On the European scene that could mean a transition from traditional bloc confrontation models to new mechanisms of European stability with the eventual merging of NATO and CSCE mechanisms.

- The perception that corresponding Russian political initiatives were received rather coolly, created a feeling in Russia that many in the West are not interested in a change in the

stability paradigms, but in preserving an old one; one that in their perception was useful because it brought a victory in the Cold War and therefore will be equally useful in the future.

1.3 AIMS & OBJECTIVES

Such conceptual mismatching of the old Cold War antagonists' intentions and perceptions risks further cooling of relations between Russia and the West. This makes the political and analytical task of exploring possible new concepts of strategic and European stability even more important and urgent. Based on this mandate the workshop concentrated mainly (but not exclusively) on the nuclear aspect of strategic stability.

1.4 CONSENSUS ON STABILITY MECHANISMS

- As a consequence of the post-Cold War realities, deterrence alone is not sufficient to deal with all of the contemporary challenges. Complementary measures are now required.
- Deterrence can be reinforced and supplemented by:

  —protection

  —disarmament

  —counter-proliferation

  —conflict prevention

  —changing patterns of thinking (spiritual and philosophical), etc.

  However, some threats may be difficult to deter, and some actors may not be deterrable.
- Nuclear forces will remain a part of the post-Cold War period, but they may not be the most appropriate or primary deterrent for some threats of this new era. In particular, post-Cold War deterrence should recognize that the scenario of a large-scale conventional war in central Europe involving the nuclear powers on opposite sides, which drove and seems to be still driving much of the nuclear planning, is now unlikely.
- Missile defenses were limited during the Cold War to codify a historically limited mutual deterrence situation, but defenses may prove of value to the community of nations in the Post- Cold War world because:

  —Russia, the US, and others wish to cooperate to defend their populations rather than hold them hostage.

  —Some nations feel threatened by the possible proliferation of ballistic missiles.

—Some nations feel more comfortable remaining non-nuclear weapons states if missile defenses could be provided.

—Guarantor nations may feel more willing to make security commitments on the basis of providing missile defenses than to extend more explicit nuclear guarantees.

- In addition to theater missile defenses and limited defenses such as the Moscow ABM system, consideration should be given to global or regional missile protection systems as a stabilizing measure.

1.5 AREAS FOR GREATER SECURITY COOPERATION

- To leave the Cold War behind, some unfinished business must be completed, including:
  - —Ratification, Enter Into Force, and Implementation of the START II Treaty
  - —Ratification, Enter Into Force, and Implementation of the CWC
  - —Implementation of greater cooperation and transparency
  - —Measures such as Nunn-Lugar, military-to-military discussions, lab-to-lab cooperation, etc.
  - —More non-governmental fora to foster debate among newly freed republics as they reevaluate their security requirements (CTB)
- An effort should be made to cooperate in improving fissile material control and accountability with an eye toward encouraging all nations, including non-parties to the NPT, to:
  - —cease the production of fissile materials that are not under international safeguards
  - —begin a step by step process of placing more of their nuclear material under international safeguards as the security situation warrants
- Greater attention must be given to the deterrence of non-nuclear WMD and to new forms of protection where nations' deterrence is ineffective or impossible. Reductions in nuclear forces require the creation of conditions which make them mutually acceptable.
- Success in non-proliferation requires addressing the fundamental regional security and political motivations which cause nations to consider acquiring nuclear weapons.
- In considering proposals for deep reductions in nuclear arms, partial consideration must be given to:
  - —implications for stability
  - —interaction with Nuclear Weapon States (NWS) and threshold states
  - —non-proliferation

—unintended consequences

2. PART 2: CONTEXT & BACKGROUND

2.1. THE NEW SECURITY ENVIRONMENT.

In the past the world faced a readily identified and mutually accepted **threat that was** well understood, and considered relatively stable. The new international security environment has neither.

2.2. BACKGROUND.

Although both the superpower alliances were established to contain mutual fears of expansionism or hegemony in Europe, from their earliest days the bi-polar relationship was confronted with crises outside the original area of the Treaties (Korea, Suez, the various Arab-Israeli wars, Afghanistan).

2.3. A CHANGED INTERNATIONAL SYSTEM

With the end of the Cold War, the existing security system confronts major changes in the international system. As the 1994 German White Paper on Defense put it, "Today Europe stands at the beginning of a new epoch. " One feature of the international system that shows no sign of abating, however, is the phenomenon of international crises.

2.4. A LESS STABLE WORLD

The major change in the situation has been the re-alignment of the economic and political structure of the former Soviet Union. The alteration of one of the sides of the old superpower equation has already brought about a destabilizing effect to the international scene. The deterrent strategy of the Cold War often kept localized crises in check. These constraints have now, in many cases, been removed.

2.5. CHANGING SECURLTY MODELS

The effect of these events on the existing security model has been for the so-called New World Order to relax constraints and containment policies on regional conflicts. These are no longer viewed as leading inevitably to a superpower clash and the danger of a nuclear exchange. However the conjunction of the removal of constraints, the wider availability of nuclear and other weapons of mass destruction (WMD), and the growing risk of regional conflict have led to a less stable model of international security, and a potentially more dangerous situation in both the immediate and foreseeable future.

2.6. VALIDATION OF SECURITY MODEL

During consideration of the modeling processes and conclusions, the workshop found it valuable to revert periodically to actualities. This was found to be invaluable as a means of maintaining perspectives, and as an indication of options for future modeling. Any security model should be subject to validation checks against real data. It is only within the context of reality that security models have any real utility.

3. PART 3: THEORETICAL OVERVIEW

3.1. THE 3 APPROACHES

The theoretical work at the ARW has developed along three different routes - geopolitical, confrontational and cooperative. The geopolitical research (by E.M. S. Niou and P. C. Ordeshook) strives to identify the possible stable "world orders", such as balance-of-power, in which the rules of conduct are not backed by sanctions, or collective security, in which they are. Both are stable (although collective security less strongly so), but so are many other combinations of coalitions that impose collective security within, but practice balance-of-power on the outside. Collective security guarantees the survivability of its members (if it survives), while balance-of-power does not. The former is, consequently, more desirable as world order but, being less stable, needs institutions, agreements and the like to prop it up. While there is a considerable body of work on the geopolitical and Confrontational Theories, there is much less valid work on Cooperation Theory. This is an imbalance which should be addressed.

3.2. METHODOLOGIES

The confrontative part of the research began with a reexamination of the concepts and premises involved in a bipolar nuclear conflict - deterrence, first-strike and arms-race stability, with a view of their extension to a multi-polar world. Most conflicts in such a world will still be bipolar: between two states, two coalitions, or between a coalition and a state. If that is indeed the rule, then the stability of a group of nations can be measured by its most potentially unstable pair of states or coalitions (J. Bracken). However, this may lead to difficulties if one major power is involved with some lesser ones. Moreover, there could arise situations that are perhaps not readily analyzed as bipolar, e.g. - Iraq retaliating against Saudi Arabia in response to an American attack. A framework for dealing with such cases of multi-party deterrence may be found in the graph approach to n-person games of deterrence (M. Rudnianski & A. D'Assignies). In this context it is also possible to generalize Richardson's conditions for bipolar arms-race stability to the multi-polar case (F. Nyland). Nevertheless, the stability analysis of a multi-polar nuclear world has yet to be put on a firm theoretical ground.

3.3 DYNAMICS BETWEEN APPROACHES

Several problems have dominated the research on the cooperative aspects of a multi-polar nuclear world: arms reduction, ABM defense and the maintenance of proliferation stability. A theoretical argument in favor of the zero-option (E. Velikhov) was based on the assumption that the risk of defection from such a regime was less than its expected gains, in view of the distribution of economic and political power. Another argument (A. Piontkowsky) suggested that a minimal option could be made stable by ABM protection, and that a stable path to such an option from the existing START I levels could be found. Another potential role for an ABM defense could be to "cap" rogue countries, in order to prevent them from initiating NBC missile attacks (G. Kent), with appropriate arrangements to avoid destabilizing the global nuclear equilibrium. With respect to the latter, a theoretical argument in favor of minimal ABM defenses against lesser nuclear powers has been demonstrated (J. Bracken). The issue has, however, been contested and needs further clarification. Finally, the geopolitical climate, in which proliferation stability will have to function has been described: for the international arena (F. Ermarth) and for the Asia-Pacific region (X. Liping). A simulation model suggests that reassurance can play only a limited role in maintaining proliferation stability (I. Amit).

GEOPOLITICAL STABILLTY

3.4 THE CHANGING GEOPOLITICAL IMPERATIVES

Stability is a multi-level problem and is not restricted to the field of nuclear strategy. The dismantling of the Soviet Union and the corresponding breakdown of the bi-polar world model created not only a vacuum of force in some regions but, more importantly, a conceptual vacuum. Hesitant and unconvincing steps of new American and new Russian administrations, and failures of policy while the world community suffered in its attempts to deal with the Yugoslavia, Rwanda, Chechnya tragedies are explained not merely by inexperience or mistakes of World leaders. The principal reason is a lack of an adequate conceptual security framework. In the absence of this framework main protagonists are tentatively looking for their new roles in a different geopolitical environment. The **end of the** communism did not usher the end of history, as Dr. Fukuima predicted in his famous paper, but rather the opposite - the re-awakening of many unpleasant historic antagonisms. The **attempts to deal with** these problems on the basis of traditional concepts elaborated in the relatively static bi-polar world has proved to be inadequate and counterproductive.

During the Cold War, thinking about stability was focused on the US-Soviet nuclear deterrence relationship. For decades strategic stability between the USSR and the US has been based on a MAD-concept, i.e. on the ability of either side to inflict unacceptable damage on the adversary - it is now time for a new approach.

3.5 NEW CONCEPTS OF STABILITY

The end of the Cold War necessitates a fundamental re-examination of the concept of stability. The new international environment differs markedly from the bipolar confrontation of the last four decades. While the previous emphasis on the "stability of deterrence" might not be abandoned entirely, the future will certainly require a much broader perspective. There are likely to be many international tensions with military, economic, and social dimensions. For example, the fracturing of the bipolar environment has regionalized many issues. The spread of weapons of mass destruction, the means for their delivery, and associated technologies is likely to continue or accelerate. Nationalism, ethnicity, and fundamentalism are demonstrating increasingly violent manifestations. The demise of the Soviet Union and the Warsaw Pact have left a power vacuum in East and Central Europe. Previous clients of both superpowers have been unable to cope with the social and economic demands of modernization.

3.6 GEOPOLITICAL STABILITY

There exists an evident need for a broader concept of stability - what we define as "geopolitical stability". Geopolitical stability is a state of relations among nations that is conducive to peaceful change and progress and contains no incentives for initiating hostilities. A party has established a unilateral stable defense against the other parties within a system if the party is confident that: the other parties have no intention of launching an attack, or the other parties cannot accept the risk of attacking, or any attack can be repelled. If all parties within a region or system have established a unilateral stable defense, the region is a multipolar stable defense system. To achieve geopolitical stability in the face of diverse and frequently unpredictable issues and threats, the world community must elaborate and have the ability to execute a broad range of approaches and means.

3.7 APPROACHES TO STABILITY

A variety of approaches (deterrence, protection, disarmament and non-proliferation, de-escalation of multi-level conflicts, prevention, compulsion and cajoling) and their combinations can be used to ensure stability depending upon the specific nature of the problems that might face the world community. Combinations of different approaches may be appropriate as a realistic political compromise. Thus, we regard the concept of Mutually Assured Protection (MAP) as an adequate stability approach to the realities of modern nuclear geopolitical stability needs.

3.8 NEW CONCEPTS OF SECURITY

Nevertheless some people are still convinced in the wisdom of maintaining the MAD-doctrine. This point of view is expressed by part of the military and academic communities during the current strategic debates in both Russia and the US. However the

threat of nuclear arms and missiles technologies proliferation has drastically increased. An extreme political regime or criminal terrorist groups acquiring these technologies becomes a menacing reality and demands a corresponding reaction.

Under these circumstances it is possible to use a combination of the deterrence and the protection approaches in ensuring the nuclear level of the geopolitical stability.

While it is quite feasible to design a Global Defense System (GDS) that could provide global protection from potential limited terrorist strikes while at the same time not breaking the MAD-conditions between Russia and the US, the real focus of stability planning and modeling should be on moving beyond doctrines of mutual suicide.

3.9 SECURITY AND STABILITY

The guideline for choosing an appropriate combination of ways in every concrete case must be the security of individuals. An individual is secure when there is no threat to his life, health, basic needs or human dignity. A society, a country is secure when their members, their citizens are secure. In this definition, security and stability have new political, military, economic, psychological, ecological, and other dimensions. Satisfaction of all of these dimensions is required for geopolitical stability. The task of analysts concerned with ensuring geopolitical stability is to explore:

MULTIPLE WAYS *to ensure*

MULTI-LEVEL STABILITY *in the*

MULTI-POLAR WORLD

PROLIFERATION

3.10 PROLIFERATION REGIONS

At present, the regions of the most serious proliferation of weapons of mass destruction are the Middle East, South Asia and Northeast Asia. The proliferation of nuclear weapons may alter or even upset the current regional balance of power and disrupt the stability of the region. It may also lead to new military conflicts. During a regional conflict, one nuclear threshold state may use nuclear weapons against its adversary.

3.11 PRESSURES FOR PROLIFERATION

There are four factors which are driving the nuclear proliferation in the Asia-Pacific region: political, military, economic and technological factors. Among them, political and military factors are the two main causes of nuclear spread, while economic and technological factors are playing relatively less important roles in this dimension. It was noted that dumping of large quantities of sophisticated conventional weapons by the United States, other Western

countries and Russia into the Asia-Pacific region also stimulates the spread of nuclear weapons. For example, many imported advanced fighter planes can be used as or transformed into nuclear carrying vehicles — thus, giving some states a nuclear carrying capability. Other states which import less advanced weapons try to acquire nuclear bombs to compensate for their conventional inferiority and counter a potential adversary's sophisticated conventional weapons.

3.12 PRIORITIES

Under the circumstances, the international community should devote its best efforts to eliminating the nuclear proliferation in the Asia-Pacific region. Prior to achieving that final goal, states in the region should seek to maintain the strategic stability of the region in the presence of nuclear proliferation. In order to achieve that objective, the Asia-Pacific region should set up a model including multilateral security mechanisms and bilateral security and confidence-building measures.

NON-QUANTIFIABLE ELEMENTS OF STABILITY

3.13 ALTERNATIVE STRATEGIC PERSPECTIVES

The discussions concerning the quantitative elements of strategic stability and the appropriate models for its evaluation were supplemented by a range of differing strategic perspectives based on the regional and national frameworks of the ARW participants. These non-quantifiable or qualitative elements offer important insights into how differing understandings of strategic stability can influence the development and use of representative quantitative models. The quantitative and qualitative aspects of strategic stability must be taken together. each is dependent on the other. In order to ensure strategic stability in the future, both the objective factors (as expressed through quantitative models) and the influence of the strategic images (through which those numerical relationships are interpreted) must be incorporated. Two general regional strategic perspectives · -ere offered during the Workshop, both of which require future work.

3.14 ASYMMETRIC REQUIREMENTS

The first was a Northern-Southern hemisphere perspective of the criteria used by the established nuclear powers (all of them in the Northern Hemisphere) in judging the validity of nuclear weapons programs in the South. Why is India's nuclear program, for example, judged by some to be destabilizing in South Asia, while U.S. or France's nuclear weapons are seen as contributors to strategic stability? What criteria are used to make the case for these differences? Who decides they are the right criteria? Why do countries in the North assume the sovereignty needs of countries in the Southern Hemisphere are not as crucial to the peoples in those states as they are to those in the North? No efforts have been made so far to

answer these questions nor to devise suitable models that might illustrate the differences. Rather, these non-quantatifiable elements were expressed as challenges to the underlying assumptions that support many Northern analyses of strategic stability.

3.15 DIFFERING PERCEPTIONS BETWEEN RUSSIA AND NATO

A second broad range of regional perspectives expressed was between the East and the West. Specifically, the differences in perceptions by the Russian participants and the representatives from the NATO countries were often seen by the other as being strongly influenced by the Cold War experiences. The discussions of the quantitative models were punctuated by these differing world views at several points in the workshop. If anything, the work on the quantitative aspects of the models examined at the workshop illustrated common areas of agreement when analyses are constrained to examining the objective conditions of stability. It was generally agreed that fora such as this NATO Advanced Research Workshop are essential to building new relationships upon which a better understanding of others' world views can be obtained. Developing agreed models of strategic stability, in parallel, might encourage even greater understanding between different peoples.

3.16 THE INDIA-CHINA VIEW

Alternative views of India and China concerning the strategic stability between the two countries were particularly instructive. The Chinese strategic image of stability is based on the perception that since China has no intention of using nuclear weapons first, as it has declared to the world, the fear in India of China's nuclear arsenal is unfounded. The image of strategic stability in South Asia, on the other hand, is profoundly influenced by the perceptions of China's nuclear arsenal and its threat to Indian security. Since the world view from India expresses a concern about the lack of equilibrium due to China's nuclear program, India's nuclear program is designed to provide a capability to balance and react to any Chinese use of its nuclear weapons. Once a country obtains nuclear weapons, it was argued, it inevitably sets in motion a number of destabilizing reactions by countries adversely affected.

3.17 NEW ASIAN DOMINOES?

In one view, China was the first nuclear domino in Asia, causing a security dilemma in India. Thus, India as the second domino had no choice but to protect its sovereignty by fielding a nuclear capability. Regrettably, Pakistan became the third domino as it faced a new security dilemma raised by the Indian nuclear programs. Therefore, it is unrealistic of the Chinese to claim a right to safeguard its national security through nuclear arms while denying other countries similar rights. A contrary point of view was expressed in which the United States was in fact the first domino in Asia, and China's response to restore strategic stability through its nuclear program should be understood in that light, and China's declaration of no first use should reassure India. These differing strategic perceptions of the stability in East

Asia were acknowledged by the participants as requiring further resolution by cooperative initiatives.

3.18 THE MIDDLE EAST

A second range of perspective on strategic stability and the role of nuclear weapons centered on the Middle East. It was asserted that Israel holds 200 nuclear weapons. Therefore, the potential nuclear programs of Iran, Iraq, and other countries in the region should not be judged as destabilizing. The participants acknowledged that different strategic images persist in the region and that models of strategic stability may not be able to satisfactorily account for these alternative views. The discussion underscored the need to account fully for both the qualitative and the quantitative considerations affecting strategic stability in the different regions.

3.19 NEW EUROPEAN CHALLENGES

A third area of supplementary discourse focused on the strategic stability of Europe and the alternative strategic perspectives of the Russian participants and those from the NATO countries. While there was general agreement that European strategic stability can not be assured in the absence of coordinated efforts by governments, there was a divergence of views of how best to preserve stability in the post-Cold War era. Specifically, the representatives from Russia were unanimous, despite the differences of their individual views that they expressed on other salient issues, in their concern about the negative impact of the prospective enlargement of NATO on strategic stability in the region.

3.20 NEW RUSSIAN PERCEPTIONS

The NATO participants noted Russian concerns over the possible consequences of NATO enlargement, and accepted them as genuine reelections of the current Russian security debate. Hence, strategic stability in Europe and the models developed to capture these relationships quantitatively must attempt to account for this diversity of view.

3.21 MODELING ALL SIDES' SECURITY PERSPECTIVES

European strategic stability might be best assured, according to one view, by a political framework of genuine cooperative security on military matters. By building on successful and ongoing arms control and other cooperative relationships between Russia and the NATO countries, governments might better assure their security and stability. A cooperative security arrangement that involves states from North America, NATO Europe, former non-Soviet members of the Warsaw Pact, the Baltic republics and other new states formerly a part of the Soviet Union, neutral countries, and Russia might provide a useful framework for strategic stability in the future. For the time being. models of strategic stability

in Europe should account for the differing perspectives or strategic images held by decision-makers in the affected countries.

CRISIS STABILITY

3.22 CALCULATIONS OF THREAT

In spite of the end of the Cold War, there are currently no major changes in the strategy of planning for the use of Russian strategic Nuclear Forces. As in Soviet times. Russian military analysts continue to see two geopolitical potential adversaries - the West (USA + UK + France + Israel + Pakistan, etc.) and China. The Chinese SNF are not considered by Russian analysts as a serious threat. However, the Western SNF are still considered to be the principal Russian strategic challenge. Therefore Russia continues to develop its plans for using and improving its SNF to retain the capability of delivering an unacceptable damage to the West in the case of any western SNF's first nuclear strike.

3.23 RUSSIAN STRATEGY AND CONCERNS

Russia is ready to actively explore together with US and other partners new concepts of strategic stability beyond MAD - stability concept. But before they can do it, it is necessary to finish up with today's and even yesterday political agenda. The START-2 Treaty faces the ratification process in both parliaments. This treaty, as does its predecessors, continues the rationale that codifies the hostility-type relationship between Russia and the US. In principle, it could have been signed in 1972. It reflects the philosophy of the MAD-doctrine and must be judged by the criteria of this doctrine. Russian calculations (Sulikov, Piontkowsy) show that in general their START II - constrained SNF can continue to guarantee an unacceptable second strike capability. However, Russian participants at the ARW felt that START II ratification may face serious difficulties in the current Russian parliament. There are two reasons for this situation. The first is technical - the Russian Parliament worries about a US re-loading potential. They have assessed it to be 2500 nuclear warheads verses Russian reloading potential to be about 500-600 warheads. Secondly, parliament worries about US efforts to create and deploy a theater BMD (THAAD) system. It's expected technical characteristics (as proposed by the US in Geneva), are assessed to have some modest capability to intercept Russian ICBMs, SLBMs and their warheads. Such a deployment, they suggest, would inevitably create political linkages to any proposal for NATO enlargement — in Russian's perception of strategic stability.

3.24 A GAME-THEORETIC ANALYSIS

This analysis proposes a game-theoretic analysis that attempts to model the essential features of anarchic international systems — systems without exogenous mechanisms of enforcement and which allow not only for cooperation but also for non-cooperation in the

form of threats to eliminate countries altogether. Briefly, the model assumes that, conditional on maintaining their sovereignty, countries pursue a single transferable resource in constant supply — it can be either "power" or economic wealth. A constant supply is assumed because cooperation cannot be secured simply by making the gains from it too great, and because sustaining cooperation in the context of constant sum competition reveals more clearly the role that institutions can play in ameliorating conflict. Next, so as to avoid confusion between the notion of equilibrium and that of stability, a system is stable if (and only if) all countries can ensure their sovereignty in the sense that if all countries choose their equilibrium strategies, no single country will have its resources reduced to zero.

3.25 BALANCE OF POWER & COLLECTIVE SECURITY

To model a balance of power, strategies are considered to be stationary — that is, each country makes the same choices whenever it encounters the same threat. Thus, it thereby ignores who made a threat or who agreed to participate in a threat. In a balance of power system, all states are potentially fit alliance partners — none is seen as significantly more 'evil' than any other. On the other hand, modeling a collective security environment requires simple punishment strategies. Where punishment is directed against those who try to upset the status quo either by making a threat or by agreeing to participate in it. The strategies forming a collective security equilibrium, then, are not stationary because they posit the formation of specific alliances, depending on who defects from a specified pattern of action.

3.26 EQUILIBRIUM & DESTABILIZING INFLUENCES

Equilibria, in a balance of power system, is supported by stationary strategies where only countries controlling some relatively critical level of resource can guarantee their existence within such a model. This implies that countries must be vigilant about the relative gains and losses of that resource (power or economic) cooperation generates. This makes such cooperation difficult, if not impossible. Collective security equilibrium is supported by punishment strategies in which no country offers an initial threat. This implies that the realization of this equilibrium renders the issue of sovereignty and relative position less salient. If the benefits that accrue through free trade and the like require a non-conflictual world, and if these benefits disappear when agreements to achieve them are disrupted by competition over relative position, then special attention should be paid to the circumstances under which such an equilibrium can be achieved and a balance of power equilibrium avoided.

Collective security requires that states punish defectors; but proposing a punishment (as opposed to some other threat) may be rational only if it is certain beforehand that the ostensible partners in the punishment will maintain their commitment to it. Since a collective security model equilibrium is considered theoretically perfect, doing so is rational in this case. But the practical possibility cannot be ignored, that states might be concerned that a defection of one type increases the perceived likelihood of other defections, so that defection becomes a self-fulfilling prophecy. The model assumes that all countries have perfect foresight.

However, in reality there is always something left to chance, so (barring a perfectly functioning coordination mechanism), the viability of pursuing a punishment strategy may be reduced.

Collective security as an equilibrium means only that no state has any incentive to defect unilaterally rom the agreement. This does not mean that states cannot gain if two or more of them defect simultaneously — if there are coordinated defections. Indeed, if states can coordinate to achieve one type of equilibrium, then, barring other considerations, it is logical to assume that subsets of them can coordinate to achieve other ends — if n countries can coordinate, then it is reasonable to assume that $m < n$ can also coordinate.

3.27 LESSONS

The principal lessons of the theoretical models of balance of power and collective security analysis are:

- A balance of power and a collective security equilibrium can exist simultaneously in an anarchic system that does not allow for universal gains from cooperation.
- In a balance of power, nations must be concerned with relative resources, because a loss of sovereignty cannot be precluded if they become too weak; under collective security, nations can focus on absolute gains since no one makes threats against the sovereignty of any state, large or small.
- A balance of power equilibrium is attractive because it is both strong and theoretically perfect. If a country believes that all, or nearly all, other states abide by it and if it believes that all or nearly all other states will coalesce freely and cannot be relied on to participate in punishments -it will then have a positive incentive to abide by it as well. It will also accept primary threats when they are offered and make them itself when it is possible to do so without destabilizing the essential security equation.
- If defection from a collective security equilibrium implies not only a punishment administered by other states but also the inability to pursue gains from cooperation, then collective security equilibria become attractive. Thus, to the extent that international organizations facilitate trade and cooperation, collective security becomes a more secure alternative to balance of power.
- The analysis, moreover, reveals a critically important function served by international organizations. Because two substantively plausible equilibria can be identified, nations must explicitly coordinate to achieve a genuine equilibrium. Hence, within a single scenario, the problems associated with coordinating particular equilibria can be examined.

A collective security equilibrium calls for states to "do nothing" until there is a defection from the system that warrants punishment. Regardless of the verbal agreements they

reach, each state, as the game unfolds, may question whether others are abiding by their collective security strategies or whether they are merely postponing making a threat until circumstances are favorable.

CONFRONTATIONAL THEORY

3.28 GENERAL

The aim of strategic stability is essentially to avoid instability. An instability is a situation in which one side may have an incentive to initiate hostilities, to strike first. (An incentive means calculation or hope to get some military or political advantage as a result of conflict). Stability is an absence of such a situation. The different ways to ensure stability are:

A. Deterrence	Threat of punishment for an attack
B. Protection	Frustrating of an attack.
C. Disarmament + Non-proliferation	No tools for attack
D. Conflict prevention	No reason for an attack
E. Spiritual Education	No psychological patterns for warfare
F. Irrational threats	No known sanctions

During the Cold War period a strong emphasis was made on one aspect of stability assurance, deterrence.

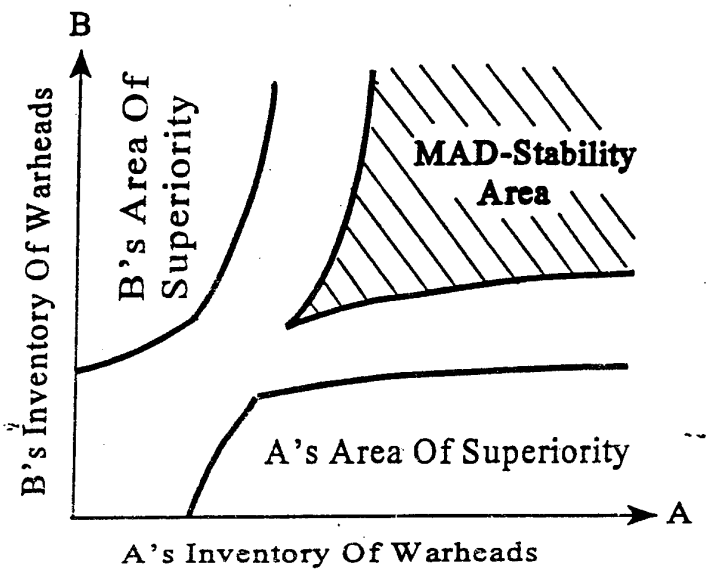


Figure 1. MAD - Stability Inventory Domain

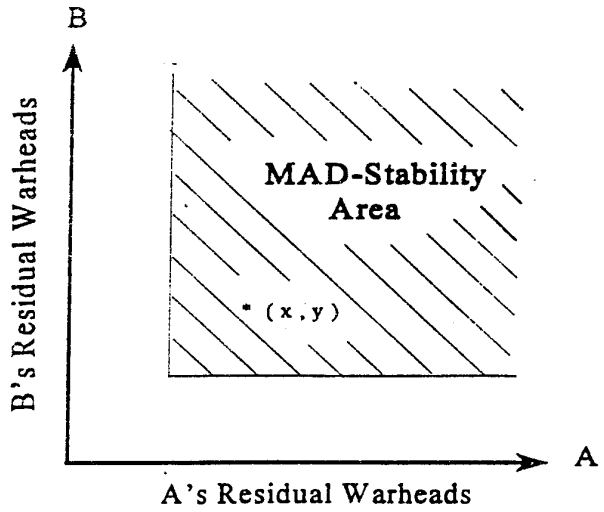


Figure 2 MAD-Stability Residual Warheads Domain

3.29 DETERRENT MODELS

A number of conceptual and analytical tools have been elaborated. The central concept has been Mutual Assured Destruction (MAD) formalized by the 1972 Moscow ABM Treaty. Its parameters for bipolar USSR USA confrontation were analyzed and depicted using several analytical models focused on the MAD - stability concept

The two types of the deterrent model domains are: (1) Inventory and (2) Residual Warheads remaining after an opponent has delivered an optimized first strike.

3.30 EXPLANATION OF THE DETERRENT MODEL

A point (x,y) is the result of solving two optimization problems (B attacks A, and A attacks B). This point contains, in compressed form, all of the data about both sides strategic forces systems (structure, accuracy, posture, etc.) that were used in calculating the surviving warheads as a result of the force exchanges..

First Strike Stability deals with the incentives or pressures to strike first. The concept of deterrence stability provides more information than just dividing the plane into areas of stability and instability. It measures in some sense the degree of instability. A First Strike Stability Index (FSSI) is defined as:

$FSSI = \min \{Costl_A/Cost2_A, Costl_B/Cost2_B\}$

B's cost of striking first is: $Costl_B = \min [D_B - L*D_A + L]$, $O<=D<=1$ where all of B's weapons are allocated in his first strike (A's best scenario),and B's cost of waiting is: $Cost2_B = \max [D_B - L*D_A + L]$, where all of A's weapons are allocated in its first strike on B (worst scenario for A). The FSSI concept includes the concept of MAD-stability. That is, FSSI≡1 is considered stable which is the case for all points inside MAD-stability area (upper right hand corner of figure 3) — because $D_A = D_B = 1$ under any scenario inside this area. Hence,

$$COSt1B = COSt2B = COSt1A = COSt2A = 1 - L*1 + L = 1$$

FSSI≡1 is also at the point (0,0) -- because at this point DA = DB =0,

$$COSt1B = COSt2B = COSt1A = COSt2A = 0 - L*0 + L = L.$$

At all other points FSSI < 1, indicating some degree of instability.

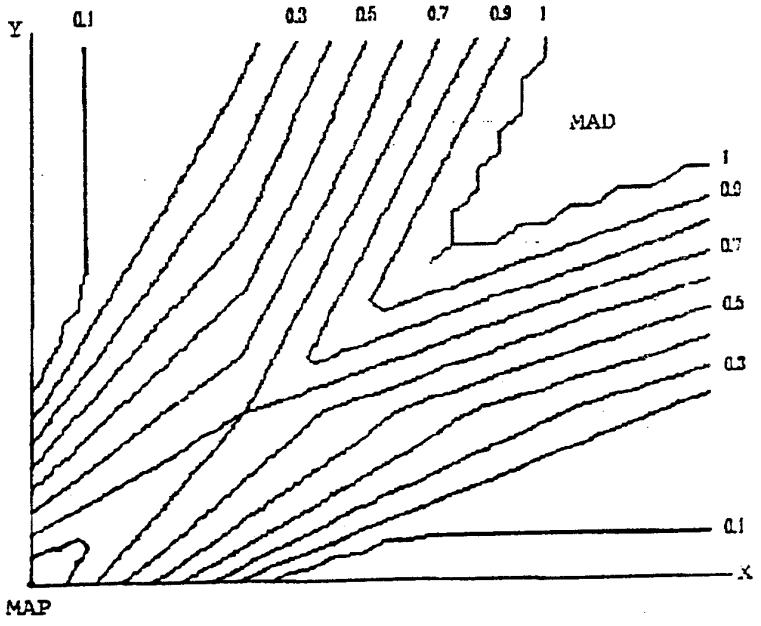


Figure 3. The First Strike Stability Index (FSSI) for Deterrence Stability.

3.31 ARMS RACE STABILITY

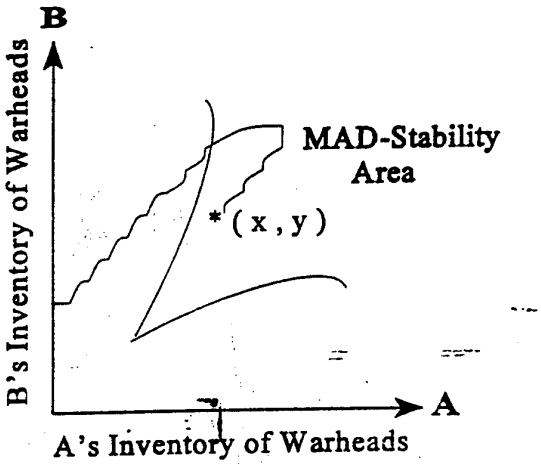


Figure 4. Evaluation of the Consequences of an Arms Race

There is a well-known analytical approach, based on Richardson's equations. The multi-polar model of this type was extended in the Nyland papers. These models deal with the numbers of WMD, actually deployed by arms race participants and their associated reaction coefficients. However, what really matters are not numbers themselves, but those functional consequences which the implications of the capability that the numerical balance provides to both sides. For example, whether under such weapons relationship (which includes not only numbers, but structures of corresponding strategic forces systems, their qualitative characteristics, etc.) do both sides have second-strike capabilities, or does one of them have a disarming first-strike capability, or does one side have a superiority in counter-force strikes ? This is a valuable tool for translating the interactions among arms race equations into the consequences resulting from strategic forces exchange models.

3.32 IMPORTANCE OF MAD DETERRENT DOCTRINE

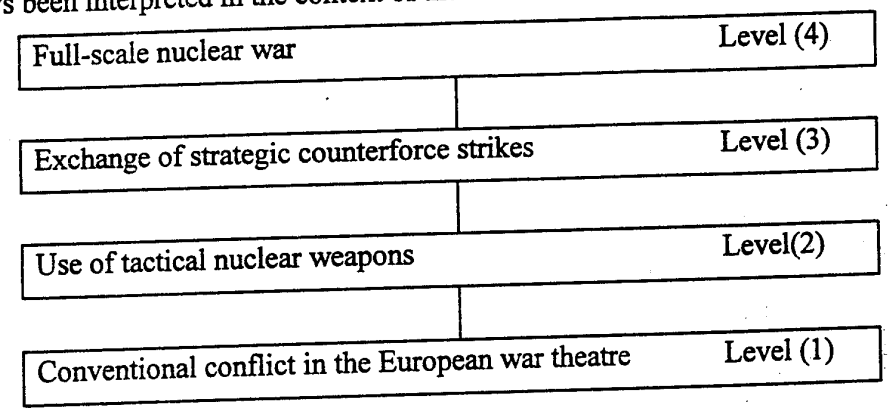
During the Cold War arms race participants were concerned primarily with keeping the two sides' strategic forces systems inside the MAD-stability area, or at best to attempt to move it into its own superiority area. The locus of points depicting the consequences of a shift in warhead inventories can be plotted on the graph (see figure 4). Thus, all the major strategic events (arms race, disarmament, exchange of strikes) may be depicted, evaluated and interpreted within the same graphical representation.

3.33 DETERRENCE AS A CRISIS STABILIZING TOOL

Crisis instability is usually referred to as "a situation that exists when a leader feels pressure because of the posture of forces to strike first to avoid worse consequences' . As far as the posture of forces is concerned this subject is covered by the FSSI technique. Crisis stability as a concept is essentially first-strike stability + psychology factors. Psychological factors can be implicitly included in the FSSI concept (the Lambda coefficient). Another important element of crisis psychology is the fact of the crises itself. The incentive to strike first using nuclear weaponry does not appear out of the blue but arises in the context of the unfolding scenario (escalation, initial political imperatives, military or economic conflict).

3.34 MULTI-LEVEL CATEGORIES OF DETERRENCE THEORY

The classical cold war confrontation between NATO and Warsaw Treaty countries has always been interpreted in the context of the escalation ladder.



The 1972 ABM-Treaty effectively sealed the conditions of MAD between the then USSR and US. It also codified security stability at level 4 of the escalation ladder shown above. But it did not exclude a situation of instability that could arise at some other level, (i.e. that one side could hope to get some military or political advantage as a result of conflict at that particular level).

3.35 THE IMPACT OF UNCERTAINTY

Thus, during decades of the Cold War Western military strategic thought proceeded from the premise of the Warsaw Treaty functional superiority at level 1. Awareness of one's inferiority at a definite step of the conflict naturally provokes a striving to transfer it to another "more advantageous" level. This led to the appearance of such concepts as flexible response ", "nuclear threshold" and "limited nuclear war in Europe". This deliberate uncertainty about NATO's nuclear intentions served as a psychological deterrent against any adversary's potential plans to realize any advantage at level 1. The radical changes in Europe, Russia and NATO have now effectively switched the role of nuclear weapons in Russia's relationship between conventional and nuclear forces. Because of Russia's considerably less capable

conventional forces (1995) it is now Russia who tends to rely on the nuclear factor as a stabilizing element of its defense strategy.

3.36 COUNTER FORCE DETERRENCE

An instability situation may also arise at other levels of the escalation ladder. In the 1970's a "counterforce strategy" was developed (see Fred Ikle papers of that time). As then US Defense Secretary J.Schlesinger noted: "the US is not seeking either to achieve a disarming first strike capability. This does not mean, however, that we don't intend to have certain precision-guided systems which will be useful for limited counter force strikes". What J. Schlesinger meant was a possible conflict at level 3 (see fig.5). If one side gained an advantage (by having more and better precision-guided systems) at the counterforce exchange level, the realization of these exchanges would remove the two powers strategic forces system from the MAD-stability area; thus, undermining MAD-stability at level 4. In Fig. 5 at point 1, side B possesses such an advantage: at point 1' side A does correspondingly.

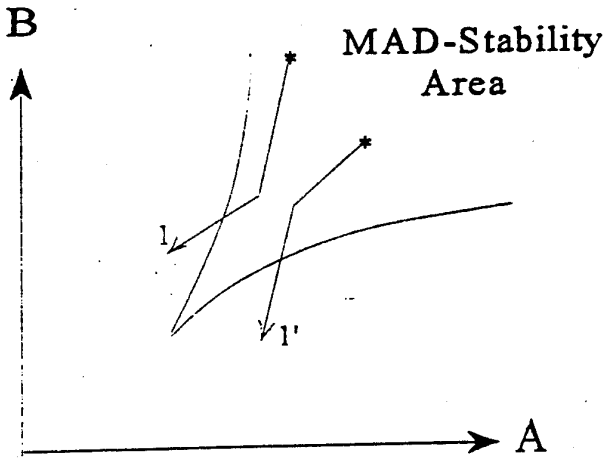


Figure 5. Effect of Counterforce Strikes on Deterrence

3.37 STABILITY AT ALL LEVELS

This analysis of movements inside and out of the MAD-stability area shows that not all the points inside this area are strategically equivalent. This consideration was obviously taken into account by the arms race participants. It therefore follows that the problem of stability bears a multi-level character and cannot be restricted only to the fulfillment of level 4 stability conditions. Situations of strategic instability must be avoided at all levels of the potential escalation ladder.

3.38 MAD: PROTECTION BY PARADOX

Until now we concentrated mainly on only one way of ensuring stability — deterrence. It is particularly relevant, because this tool was essential for the stability structures of the cold war world, especially in the nuclear field. Having signed the ABM-treaty in 1972 both sides deliberately opened their defenseless territories for all the might of the opponent's nuclear potential. They turned to this choice as a last resort. realizing that, however paradoxical, this defenselessness provided their only possible defense in the geopolitical reality of the time. The assumption was that a rational adversary would **never strike** first. because he understood that an opponent had a survivable second-strike capability: consequently any first strike would automatically mean mutual suicide. Such was the reality of Mutually Assured Destruction. The very acronym for the worst phase of the Cold War possessed a grim logic. Such an extreme strategy was justified by the circumstances of that time and was perhaps the only possible military-political logic of the Cold War world.

3.39 MUTUALLY ASSURED PROTECTION (MAP)

But it would be methodologically wrong to regard the historically limited (i.e., valid only under very specific political and military circumstances) concept of MAD-stability as a universal one. In a radically different political environment (disappearance of a deep geopolitical conflict between two nuclear superpowers, a degree of mutual confidence and cooperation, deep cuts in offensive arms) it is now possible to rely on another paradigm of strategic stability, which we would define as MAP (Mutual Assured Protection)-Stability concept.

3.40 OBJECTIVE OF MAP

The objective of this strategy is to guarantee completely the territories of states from any nuclear strikes, including possible unauthorized launches and terrorist attacks from third sides, which are not deterred by existing strategic constraints. Until now most of the nuclear strategists and political decision-makers still continue to follow the intellectual habit of the MAD-stability concept, which was designed for a different historical epoch and responded to a different spectrum of potential threats.

3.41 MAD INERTIA

The inertia of thought among many experts in nuclear strategy is not just a curious and harmless methodological legacy of the Cold War. The old logic of the MAD-stability concept inevitably leads to two serious practical consequences which have an adverse effect on current global strategic stability.

3.42 MAD & DISARMAMENT

MAD concepts impose practical limitations on the superpowers' nuclear disarmament processes within the framework of START-2 agreement. For example, it requires the modernization and upkeep of huge Russian and USA nuclear arsenals. These enormous quantities are now futile for any clear-cut strategic objective under the realities of the new security environment. The mere maintenance of the nuclear complexes of such dimension increases (especially in Russia) the danger of ecological and radiation disaster as well as the danger of leakage and proliferation of the main components of nuclear weaponry.

3.43 INHIBITIONS ON BMD

MAD-stability concepts forbid (by its own internal logic) deployment of any Anti-Ballistic Missile systems. Just this argument - ABM system deployment would undermine stability conditions was the key determinant during the debates on global defense both in Russia and in the United -States. Although seemingly convincing this argument is misleading. To scrutinize this point, consider FSSI technique.

As we saw in Figure.3, FSSI=1 inside MAD-stability area — because in this area $D_A = D_B = 1$ and likewise $Cost_{1A} = COSt_{2A} = Cost_{1B} = Cost_{2B} = 1$. Also, FSSI = 1 at the point (0,0) -because $D_A = D_B = 0$ by definition. Thus $Cost_{1A} = Cost_{2A} = Cost_{1B} = Cost_{2B} = L$.

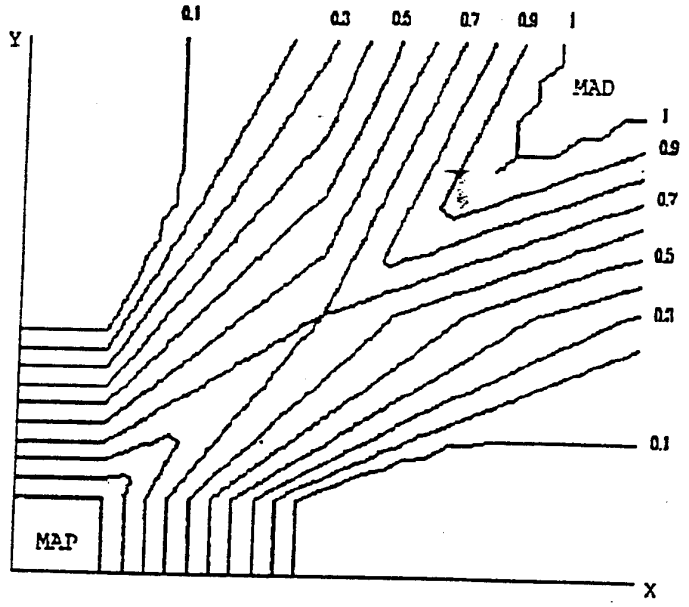


Figure 6. Isolines of limited ABM system and p>1

In the world without GDS this (0,0) point is the only point of MAP - stability area. Let's consider now the evolution of both MAD-stability and MAP-stability with the deployment of GDS. We will characterize the efficiency of this system by the parameter K (number of warheads intercepted by such a system). Due to the deployment of the limited global GDS system the area of MAP-stability increases, starting from the origin and moving up to the right in the form of a square area with length K. At the same time the MAD-stability area decreases, moving up to the right as it was correctly noted in the papers in which the SDI project was described as a destabilizing idea (see Figure.6). However what was not noted is that the MAP-stability area is rising and increasing. In fact, the (x,y) plane has a general area of stability, combining these two mutually complementary aspects of stability. In a general case, this area is unconnected and its MAD and MAP subsets are divided by the instability area where FSSI is less then unity.

3.44 MAD TO MAP ?

The problem of deep cuts in offensive strategic forces (beyond START-2) is basically the problem of a transition from MAD-stability to MAP-stability. The mere raising of this problem is of course, only possible, under certain political conditions (namely, degree of mutual confidence, absence of global confrontation, sound partnership relations). But we also need to analyze the technical aspects of the problem — discovering the most stable path of transition from the MAD-area to the MAP-area (i.e. a path where FSSI is equal to unity or very close to unity).

3.45 NEW MODELS OF STRATEGIC STABILITY

In this context, let's consider a case where the offensive forces of each side are invulnerable - p<L (see figure.7). Comparing the case presented in Figure 6, FSSI increases considerably in the area between MAD and MAP and, actually there is a connected path of a general stability area, inside which we can realize a stable transition from the cold war stability paradigm to a new stability paradigm for cooperation and security. (In the shaded area FSSI>=0.9).

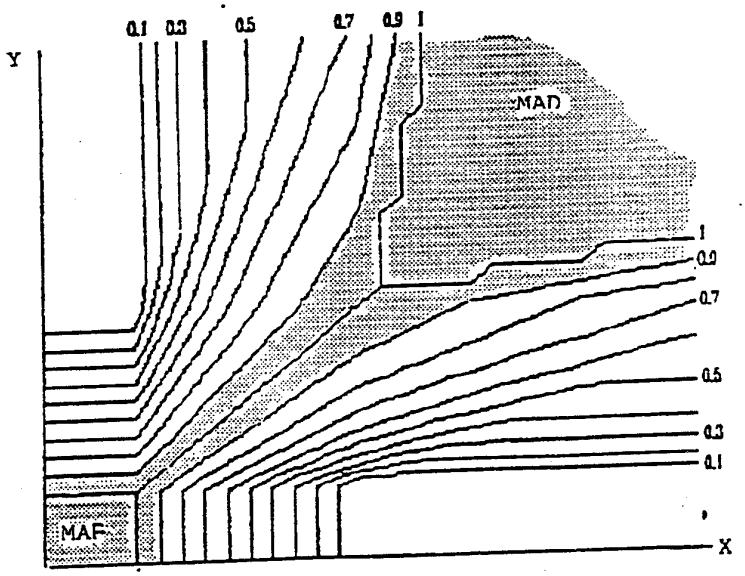


Figure 7. New Stability Paradigm

3.46 A GENERAL STRATEGIC STABILITY THEORY

This analysis demonstrates that the concept of Mutual Assured Destruction and the MAP-stability concept are in reality only two approaches to a wider general theory of

Strategic Stability and security. The same mathematical tool - the First Strike Stability Index - has allowed us to unify these two apparently opposite notions into a single concept of general stability. Those states of the strategic forces system are regarded as stable whose FSSI value is equal or very close to 1. In military political terms it means that in this state neither side has any rational incentive toward initiating a conflict. This unified stability area covers both the points corresponding to MAD-stability and ones corresponding to MAP-stability areas. Moreover, this stability domain demonstrates the possibility of a stable transition path (i.e. by preserving FSSI -- 1 condition along all the transition path) from MAD-stability subdomain to MAP -stability subdomain. This provides, for the first time, a unified stability theory.

3 47 PRACTICAL IMPACT OF THE GENERAL THEORY

The latest conclusion solves an important and long-debated problem, namely, the possibility of a smooth (i.e. preserving generalized stability conditions at all intermediate stages of transition process) change of strategic stability paradigm. As discussed in previous sections 3.4 - 3.9, stability is a multilevel problem for which nuclear stability is an important facet. A variety of approaches (deterrence, protection, disarmament, and proliferation issues) can now be addressed within this general military stability framework which covers both MAD-stability and MAP-stability domains. This is an unusual case where mathematical methods can have an immediate and substantial impact on policy formulation so far unobtainable by other means.

3.48 MULTIPOLARITY OF THE POST-COLD WAR WORLD.

The collapse of the bi-polar world structure eliminated some traditional threats to global security and a new spectrum of potential threats are emerging as a result of the collapse. Deterrence and protection concepts in the bi-polar context must now be extended to the multi-polar world. In general, in a multipolar environment composed of n parties, there are N potential confrontation coalitions partitioned into bilateral relationships. The number N is given by the recursive formula: $N_n = 3N_{n-1} + C^1_{n-1} + C^2_{n-1} + C^{n-1}_{n-1}$, the formula gives the following results:

$N(2) = 1$
$N(3) = 3 + C^1_2 + C^2_2 = 6$
$N(4) = 18 + C^1_3 + C^2_3 + C^3_3 = 25$
$N(5) = 75 + C^1_4 + C^2_4 + C^3_4 + C^4_4 = 90$, etc.

3.49 DETERRENCE THEORY IN A MULTIPOLAR WORLD

Deterrence is the practice of credibly threatening an unacceptable penalty (by Cost / Damage/ Counteraction) against any potential adversary, so that the opponent will exercise restraint in his behavior. From this simple bilateral theory of deterrent thinking, models of multipolar deterrence can be extrapolated .

3.50 MODELING DETERRENCE IN A MULTIPOLAR WORLD

At its' core, deterrence is an oriented bilateral relationship. That is, party A is said to deter party B from implementing B's strategy S_B, if A threatens B by retaliating with a strategy S_A, such that, the following three conditions apply:

(1)S_A can be "not incredibly" implemented by A;

(2)The consequence of A selecting S_A, and B selecting S_B, is unacceptable to B;

(3)B has an alternative strategy S_B that he believes can be successfully implemented and will yield him an acceptable outcome.

The above bilateral definition is the nucleus of all deterrent relationships, and can be represented by an arc of origin S_A, and extremity S_B The representation of a multipolar system will be a graph of arcs that represent the bilateral deterrent relations between parties and coalitions of parties (a coalition being treated as another party in the graph). For a three party system with a strategy triple of (S_A , S_B, S_C) - whether A and B coalize or not - we shall say that strategic combination S_A , S_C) is deterrent vis-à-vis S_B , if the three above conditions are satisfied, with strategy S_A being replaced by strategic combination (S_A, S_C) Thus, strategic combination (S_A, S_C) will be treated a simple strategy from the point of view of implementation, with nevertheless two cases which look similar at first sight - to be distinguished:

1) in non-cooperative situations - that is situations where no coalition occurs between the parties non-cooperative strategic combination (S_A, S_C) can be "not incredibly" implemented with acceptable outcomes to $A$and C, if and only if the same ?? For strategies $S_A$and S_B considered separately.

2) in cooperative situations, where coalitions occur - the coalition A and C comprised of A and C is considered as a simple party, with the confidence that unacceptableness of a situation to one of the coalition's members suffices to make this situation unacceptable to the coalition.

3.51 MODELING ASSUMPTIONS AND CATEGORIES

In general, in a multipolar environment composed of n parties, there are $2^{n(n-1)}$ possible deterrent structures built on bilateral deterrent relationships. In practice, there are usually some dominant rules of thumb that will prune the number of categories that are under consideration at any given time. However, generic rules of thumb are difficult to establish. But in any given situation they tend to be readily apparent. The assumptions underpinning deterrence involve expectations between adversaries about how their opponent(s) will think, behave, formulate policy decisions and the willingness or credibility of an opponent to exercise penalties (sanctions). These basic assumptions are as follows:

1. rational leadership is exercised on both sides. Each party is considered to be rational if it makes its' best effort to avoid an unacceptable outcome. For each party, what is unacceptable will be evaluated in each particular situation.

   For instance, consider a situation where party A wishes to deter party B from selecting an option

   S_B. B is considered rational if, confronted by the threat S_A, B discards all actions that will lead to an unacceptable outcome for him — provided that B has an alternative strategy S^1_B which for B will lead to an acceptable outcome.

   The acceptability of the outcome strategy S^1_B by B will be heavily influenced by whether A has another strategy S^1_A, that in combination with S^1_B, may theoretically lead to a worse outcome for B than accepting the outcome of S_A. Hence, deterrence has a recursive process to it where the possibilities of credible strategies of the various parties must also be analyzed.

   A practical example of the recursive process is where, at the tactical level, A wants to deter B from using a specific category of weapons. But achievement of the tactical level of deterrence may have strong consequences at the strategic level. A is said to have a global capability to deter B.

   S_A, if implemented by A, may lead to an unacceptable outcome for A, but still be perceived as a threat by B provided the sanction is credible.

2. The threat or sanction must be credible, and the means of imposing the penalty under the control of the leadership. For each party, credibility depends on the consequences of sanctions being implemented, and the existence of alternative strategies for each party. For instance, if implementing a sanction leads to an unacceptable result for A, the sanction can still be a credible threat if the consequence to A of not implementing the sanction is also perceived by its' opponent(s) as unacceptable.

   Credibility is also derived by having the sanctions under the control of the leadership: a capability without the means of implementation is not credible. In the case of military affairs, the strategic means are not only weapon systems, but also the operational plans and command and control necessary to execute them, as credibility also depends on the means to effectively communicate the sanction.

3. The Parties must have effective mean of interaction and communication among them sufficient for mutual understanding about sanctions, thresholds, and expectations. (Communication is fundamental to imparting knowledge to the other parties. If a sanction cannot be effectively communicated, no threat will be perceived by the other parties. Effective communication is more than transmitting a message; it also includes the guarantee that the message was properly received and interpreted as a threat. Communications are subject to noise, mistrust, delays, and misinterpretations. At a very basic level A must not only know he has

transmitted a sanction, but he must also know that the sanction was received as a threat. To the extent that the sequence (A knows that B knows that A knows) is infinite among all parties, common knowledge is reached.

4. Behavior is governed by cost benefit calculations, and that a proposed penalty (sanction/cost/ counteraction) can be credibly threatened which dominates the expected benefits. The nature of the penalty can be offensive or defensive. A defensive counteraction S_A to B's strategy S_B can prevent B from reaching his goal(interdiction). An offensive counteraction SA is not directed at preventing B from reaching his goal, but punishing him for doing so (sanction). Both offensive and defensive actions can be combined to comprise a strategy.

   For instance, if S_B is a strategy of invasion of A's territory, and SA is A's military strategy to counter (defend against) B's offensive action as well as mount a counterattack against B, the consequence of implementing the strategic pair (S_A, S_B) can lead to B unable to achieve invasion of A's territory, and the price of its' attempt clearly raised to an unacceptably high level. In this situation both modes of deterrence are present.

FIRST STRIKE INCENTIVES/CONTROLS

3.52 INHIBITIONS ON FIRST STRIKE

The condition that exists when, owing solely to the posture of forces, leaders are not perceived in a crisis to feel pressure to strike first against one or more opponents to avoid the worse consequence of incurring a first strike. The enhancement of first strike stability can eliminate force posture as a catalyst to crisis instability. A national leader has the ambiguous choice between striking first against one or more opponents and waiting. If he waits, he does not know whether he will be avoiding war or incurring a first strike.

3.53 BI- POLAR MODEL

In a bi-polar world, first strike stability is a function of two ratios — one for each opponent. The ratio for each opponent is the cost of striking first to the cost of waiting and striking second. The index of first strike stability is given by

$$\frac{C(A\ strikes 1st)}{C(A\ strikes 2st)} \quad \frac{C(B\ strikes 1st)}{C(B\ strikes 2st)}$$

where the cost is defined at the difference the damage suffered (a fraction of valued assets damaged) and the discounted damage not inflicted on the opponent.

$$C = D_{SELF} - \lambda * (1 - D_{OPPONENT})$$

3.54 MULTI-POLAR MODEL

In a multipolar world, calculating the index of first strike stability is more complicated. One means of calculating a multipolar First Strike Stability Index consists of finding a cost ratio for all opponents (I=1,2,3,....n) as indicated below:

$$CR_i = \frac{C_j(strikes\ first)}{C_j(strikes\ other\ than\ first)}.$$

The multipolar First Strike Stability Index is given by: $S=\min[CR_1, CR_2, CR_3, ...CR_n]$ or by the smallest cost ratio amongst all (n) of the opponents.

- If there are coalitions amongst the nations involved, each coalition is treated as one opponent.
- If there are three coalitions of approximate capability the previously defined S is thought to be correct.
- If there are three coalitions of which one is dominant, the two small coalitions will be destroyed if they preempt or if they initiate, so the first strike stability S will be that of the dominant coalition.
- If there are three coalitions of which two are competing for dominance and one is small, the first-strike stability S will be that of the less stable of the two dominant coalitions.

The above two paragraphs demand that the definition of dominance be found. Additionally, at this juncture, the finer-structure issues such as multiple strikes by single coalitions on single coalitions are not understood.

QUANTITATIVE GEOPOLITICS - BALANCE OF POWER VERSUS COLLECTIVE SECURITY: GAME THEORETIC ANALYSIS

3.55 QUANTITATIVEAPPROACHES TO MODELING DETERRENCE, CRISIS STABILITY, AND FIRST STRIKE STABILITY

Since deterrence is concerned only with positions of the parties with respect to their own thresholds, all parties outcomes will be gathered into two groups:

- acceptable outcomes represented by a "1"
- unacceptable outcomes represented by a "0"

Consequently, two-player games will be modeled through binary bi matrices. The analysis of deterrence on the binary game will be performed by studying the playability

properties of the players strategies, through a recursive process. There are two ways for strategy of player A to be playable:

1. because it is a "good" strategy — player can guarantee himself an acceptable S_A outcome, provided player B is rational. We shall say S_A positively playable; and
2. because player A has no reason to discard it just because it is not a 'good" strategy. We shall say S_A is playable by default.

This method can be extended to analyze n-player games.

ARMS RACE DYNAMICS

3.56 THE TWO CATEGORIES: WARHEADS & DELIVERY SYSTEMS

During the NATO Advanced Research Workshop, two different problems emerged. One problem was the arms race instability determined from the number of nuclear weapons in each of two or three opponent's armament inventories. The other aspect of arms racing addressed delivery systems instabilities caused by the production rate of different kinds of weapons such as combat aircraft.

3.57 MODELING ARMS RACES

The first formulation of an arms race is based on Richardson' s equations, but extended to three or even four contenders. Arms race evaluation based on this method would employ monitoring of weapon inventories of all contenders. Both approaches to arms races have their place in understanding the implications for the growth of nuclear weapon inventories amongst multipolar interactions in the future which cannot be completely disconnected from other weapon systems.

3.58 RICHARDSON' S MODELS SIMULATION

The criterion for stability is derived from solutions of Richardson's equations for three contenders:

$dx/dt = ky + vz - ax + G$

$dy/dt = mx + nz - by + H$

$dz/dt = px + qy - cz + I$

Instability is defined as a condition where weapon inventories increase without limit. To prevent instability in a three-way arms race, the following criterion must be observed:

$$\frac{yqm+npk}{abc}+\frac{nq}{bc}+\frac{yp}{ac}+\frac{mk}{ab}<1$$

where

a,b,c = cost constraint fractions

x,y = X reactions to Y and Z

p,q = Z

G,H,I = hostility indices of X,Y,Z

The solution to the equations results in a time history of the number of warheads in each contender's inventory. Examples included involvement by U.S., Russia, and China. A third area example was treated with a "catch-up" model based on activities of China, India, and Pakistan.

In the future, historic data will be applied to derive coefficients to Richardson's equations to generate short term predictions of future arms racing behavior.

The second approach to understanding arms races involves combat arms production with special emphasis on combat aircraft.

3.59 ARMS RACE MODELING DYNAMICS

The ratio of domestic production /export production has dramatically shifted in recent years among the major producers, (U.S., Russia, and European countries) where the production for export is now larger than for domestic purposes. This is one of the main results of the drastic reduction of military forces everywhere, and an undesirable consequence of the end of the Cold War.

This free market in arms has four main dynamics:

1) the market is entirely driven by the major exporters

2) Arms export is one of the main issues for solving industrial problems raised by the reductions and restorations in military systems and in the National defense in industry.

3) Military allies are the main competitors in this export dynamics; they most often belong to Atlantic Alliance (of U.S. versus European countries)

4) Russia and China, for different reasons, are playing a very specific role in this dynamic: Russia because of its conversion problem and China for both domestic and international reasons and because of its geographic position in the Eastern area.

Assuming that the players in Arms market are fewer and fewer the economic dynamic of arms race is to be modeled in the terms of Cournot-Nash oligopoly models (indexes can be used for relating competitive market structure to equilibria).

3.60 FROM ARMS DYNAMICS TO INTERNATIONAL INSTABILITY (OR STABILITY)

Two types of political or strategic tensions seem to be induced from the dynamics of the arms trade:

(1) between allies as US and some European countries in NATO

(2) the new list and new major importers (China, Taiwan, South Korea, Pakistan, India, Iran).

For modeling the international instability consequences of the arms trade - and in order to formalize the relationship between the amount of arms and the stability through nuclear deterrence for US and Soviet Union (cf Intriligator 1975 ...) - this general framework must be used in order to take into account the content and the novelty of multipolar world. Two clear suggestions can be made:

(1) Revisiting the "surprise attack" - Schelling's concept in the case where the surprise attack is not "deliberate" but "unintended" if not accidental - the assumption on potential adversaries' knowledge is to be forecast for elaborating the Schelling suggestion (see Schmidt 1994).

(2) Using the redefinition of deterrence (Rudnianski) to reformulate the kind of Intriligator's figure.

3.61 CONCLUSIONS OF ARMS RACE MODELS

The different types of traditional arms race models are almost irrelevant, Richardson's interaction equation as well as the bureaucratic models (see $x = a_1(x-x_0)+-az$); it is therefore necessary to support new classes of interconnected models (economic arms race and strategic stability) to explore these potentially destabilizing security areas.

COOPERATION THEORY

3.62 STABILITY MECHANISMS

From the quantitative proceedings of the workshop it was possible to identify certain qualitative areas and problems that call for the development of stability mechanisms to assist in the settlement of disputes and the achievement of mutually acceptable solutions by Russia and NATO. Such stability initiatives need to be coordinated and their impact tailored as part of a wider policy incorporating other factors.

3.63 ECONOMIC & POLITICAL FACTORS

It is important to identify a feature of great current concern to Russia. Resulting from the provisions of arms control agreements, Russian military industry is facing a conversion requirement of stupendous proportions. The quantity of conventional armaments that are surplus to the actual needs of the Armed Forces numbers tens of thousands. The instability caused by this surplus is many-sided. Militarily, such armaments, if disposed of by cheap sales, or even donations, to other states. This could drastically upset the balance of power in the relevant region. Economically, the effect is double-edged: on the one hand, a simple sale would of course result in a hard currency profit for Russia. However, the satisfying of external demand by off-loading second-hand equipment in large quantities cancels any opportunity of genuine sales of newly produced equipment. Thus, the Russian military sales budget would benefit, but the Russian defense industry would be much the poorer. The other feature of this problem is connected with the obtaining of political influence through the provision of armaments. Because of the destabilizing effects, a mechanism to coordinate, and give equilibrium, to arms exports should be established between NATO and Russia as a matter of strategic stability policy.

3.64 THE HUMAN IMPACT

The need has arisen in Russia to retrain many thousands of serving officers and NCOs, and fit them for civilian life. To a far lesser degree, these same problems are facing many NATO nations. The experiences of different NATO countries, allied to constructive initiatives and practical ideas for possible use in Russia, would be a valuable stability tool. It could even be possible to exchange employment opportunities between NATO countries and Russia, perhaps by involving other organizations.

3.65 IMPORTANCE OF EXCHANGE

The public awareness of different levels of the population in both Russia and NATO of major strategic issues and actions has shown a need for a wider exchange of public information. An international mechanism is required, incorporating experts from military, academic and political/scientific research establishments, and supported by both NATO and Russia. Such a forum should be provided with the best sources of mass media information and links with official, governmental, organizations and given clear terms of reference to act as a link for strategic exchanges and academic work on strategic stability subjects.

3.66 IMPACT OF CONVENTIONAL WEAPONRY ON INSTABILITY

Finally, the significance of new types of conventional weapons has led several speakers in the workshops to comment that the improvement of this class of armament requires a new assessment, and a system to counter their transfer. Mostly, it has been the spread of precision guidance, but also new advances in the technology of warheads are significant. The Workshop considered that a joint mechanism for controlling the export or

other transfer of high-performance conventional weaponry would assist in the maintenance of stability in this sphere.

3.67 STABILITY ENHANCING MEASURES

The priorities are:

1. An appropriate mechanism, jointly supported by NATO and Russia, to identify and develop common strategic and security programs.

2. The coordination between NATO and Russia of an armaments export policy.

3. The exchange of information, ideas, and practical help in the retraining and re-settlement of military personnel.

4. A control mechanism to cover the transfer of conventional weapons of high accuracy or special lethality.

If the above mechanisms can be introduced and supported by NATO and Russia, a decisive and beneficial effect will be created for stability into the 21 st century.

4. PART 4: PERSPECTIVES, RECOMMENDED ACTIONS AND FUTURE WORK

4.1 PERSPECTIVES

4.1.1 China:

The delegates have thoroughly and frankly expressed their viewpoints, such as, the Russian viewpoint of their enemies after the end of the Cold War and the proliferation issue presented by India. All of this frank talk helped us a lot in understanding each other's viewpoints and laid a foundation for future work in dispelling these misgivings.

All the models presented at this workshop are based on a scientific analysis. They help us (Chinese strategic analysts) in our research work. We will report this work to our Societies, Universities and concerned institutions.

4.1.2 Israel:

There is a linguistic difficulty. We have an academic group, with an understanding of modeling theory - we also have an important group of non-academic practitioners who have to deal with the realities of the world. Both have their separate functions, and both must exist separately - but there has to be a bridge between the two.

On stability:

•Israel does not reveal its nuclear arsenal for sound reasons of stability. The population is certainly held at hostage so they must be protected by uncertainty.

** Clarity (e.g. 220 warheads at 2500 kms) would destabilize the region.

** The only stable option for deterrence in the region is non-disclosure and non-transparency.

** What would happen if other regional nations acquire nuclear warheads, not aimed at Israel but at their Arab neighbors?

•New stabilization measures would be needed - and quickly

•Bilateral/Tri-lateral agreements would be needed, subject to certain principles:

** WMD must be under strict control of the POLITICAL and not MILITARY leadership (cf. Saddam Hussein's delegation of CW/BW authority to the commanders during the Gulf War).

** The nuclear forces in the region must be kept small - no tactical nuclear weapons, only strategic capability.

** These forces, as forces of last resort, should NOT be kept at high readiness or alert states.

•By using these principles, regional stability MIGHT be assured. But we don't have the instruments to assert these measures at present.

4.1.3 Russia:

- Security paradigm: It is not a perception - misperception problem. There are two contradictory approaches
  (1) For West - changes inside the old paradigms as a result of the defeat in a Cold War/Victory — no sense of change

  (2) For Russia - changing of the paradigm and creation of a new global and European security system which is typical for romantic vision of Western realities and intentions in attitude to Russia

- As a result, backlash in Russian public opinion is inevitable. This is not to say that this process has acquired an irreversible character. But, in this case, we face a problem of synchronicity of intentions and perceptions.

** In this context, the necessity for dialogue acquires a very special attention, and our three day experiment proves it; as well as, the possibility to narrow the gap between participants, and narrow the gap between theory and official practice.

** Our decisions allowed us to cover a wide scope of problems, and it has a sense of how to identify a clue, the priority problem of international agenda and

contribute to global stability through the elaboration of some problems in primarily an applied way:

- Nuclear stability: current understanding & implementation
- WMD proliferation
- European security — what is in direct interest of NATO
- Parity, non-linear distortions to stability in multipolar world
- Correlation between nuclear and global stability, non-linear distortion in multipolar world

- To make a long story short we should have in mind the need to overcome conceptual gaps between corresponding visions of global relations using the exchange of information during workshops like this — thanks to our host.

4.1.4 France:

- Threat assessment: The great uncertainties due to the collapse **of the Soviet Union imply new** assessments of the threat.
  - From the East
  - From the South

  with respect to both:

  - conventional arms, and
  - weapons of mass destruction/proliferation
- Deterrence and Proliferation: If there is little doubt that deterrence will play a smaller role in the near future with respect to relations between NATO countries and Russia, that does not mean that nuclear deterrence should be eliminated. On the contrary, because of uncertainties, it will be a factor of security for a long time. At the same time, proliferation is becoming a greater danger every day. To cope with this apparent contradiction, fresh thoughts have to be brought to bear on deterrence in a multipolar world that simultaneously ensures security and prevents proliferation.
- The industrial and economic dimension of international security need to be studied at three levels:

  (1)The relationship between arm's reduction and international stability in arms exports.

(2)The various aspects of the conversion problem in the former Soviet Union but also in NATO's countries (supporting United Kingdom proposal)

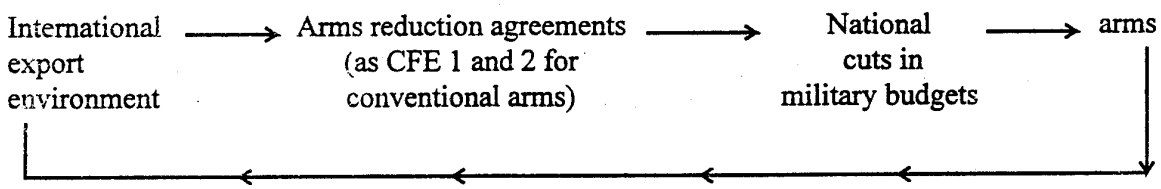
(3)The study of the kinds of cooperation in defense industries relative to the economic side as well as the security side of the proposals. 1,2 & 3 must be elaborated both at a descriptive level and at an analytical level using different modeling

4.1.5 United Kingdom:

Insights And Implications For Global And Regional Stability:

- *The Impact of Advanced Conventional Weapons*. The participants recognize that advanced conventional weapons have taken the place of some nuclear weapons. In this way, conventional armament has crossed over into an instability area where the current provisions of arms control agreements and the MTCR do not apply. This is an important area for attention now; it is better to analyze before it becomes critical.

- *New Patterns For Arms Races In Production And Exports*: As the French have pointed, one must make the distinction between two facets of the problem: (1) arm's sale as a dynamics per se; and (2) the strategic impact of the arms race on international stability (or instability). The two questions are disconnected and require two separate models to be linked. Their schema summarizes the general picture for the near future.



The emphasis must be put on the feedback loop of the figure.

- *The Impact Of Dumping Conventional Weapons*: The danger of instability in South Asia resulting from the dumping of conventional weaponry by other states was highlighted by the Chinese. The "general schema" (above) shows the cycle of how the improving international environment leads to arms reduction agreements, these lead to cuts in national armament/military budgets, which lead to a compulsion to export arms; this in turn leads back to arms impacts on the international environment. Thus, arms control implicitly brings with its train a series of problem areas that require study. The instability impact affects not only NATO, Russia and Europe — it is global.

- *The Impact Of Surplus Military And Military/Industrial Personnel*: The defense conversion problem in Russia, both in personnel and equipment, highlighted an

area for cooperation with NATO. The increasing pool of dissatisfied military personnel is creating a "time bomb" for the future. This problem strikes many countries in different proportions, but none are immune.

4.1.6 India:

- Stability is indivisible. South Asian stability cannot be looked at in isolation. China, though it might be a global player impacts upon India. India in turn impacts on Pakistan's perceptions. The world milieu is therefore relevant for regional analyses.

- The threat to world stability is more likely to come in the future decades through threats from non-state actors, such as religious fundamentalism, the 'empire of cocaine', terrorism and subversion from cults, sub-national and ethnic groups, transnational mega-firms etc. Bringing these into the international structure and taming them to the extent possible is vital. Otherwise it will be virtually impossible to deter them with threats, or to take punitive action if deterrence fails, as targeting these wraiths will be virtually impossible.

- While dealing with nation states on nuclear proliferation, the approach thus far has concentrated too much on the supply side of the equation and not nearly enough on the demand side. Genuine security concerns of nation states ought to be taken care of by a suitable international regime, if these states are to be persuaded not to go it alone in their quest for security. The big powers setting a good example in drastically cutting back their nuclear stockpiles, with a 'do as I do' approach rather than one of 'do as I say' would go a long way.

- I would suggest that at the Moscow conference, more time be made available for interaction between qualitative strategic analysts and quantitative ones.

- Finally I would like to say that, thus far, India's approach to non-proliferation has been somewhat simplistic. There has been advocacy of total and universal nuclear disarmament; not enough thought has been given to arms control, with virtually no debate on the subject. This must change. However, I believe that as long as India perceives a threat to its security including a nuclear one, and there is no credible international or big power guarantee regarding the safeguarding of the security interests of non nuclear powers, no amount of pressure will make India give up its nuclear option.

4.1.7 USA: Insights and Implications

- Contemplated this workshop and the participants from so many countries — impressed by those with:

  ** Long-standing friendships

** Former enemies and new friendships

- Sociology of the workshop proved to be very interesting — have not been disappointed

- Assembled in order to try to develop practical models/approaches to strategic stability Believe we have made substantial progress in that regard

- Nonetheless, suggest that strategic images each of us carry around inside our heads also had a major influence on our discourse.

  ** At the root, pictures in our heads of strategic relationships is our reality - we act on those images

  ** These images are supported by key assumptions shaped by past experience

  ** Our natural behavior prompts us to screen out discordant information so that we can keep our image intact — we comprehend selectively

  ** I have no doubt of ??complexities?? of problem

  ** I have no doubt of the advantage of conventional weapons as tool for stability

  ** No one needs to admit it openly but I think we have seen some fascinating examples of cognitive dissonance at work in others as well as; perhaps, inside ourselves

- Some of this says that we are not very bright because we carry around cold war frameworks in our heads It doesn't argue that we are bad people. It simply says, I think, that we are human — that each of us is locked up inside of a French, Chinese, American, Russian, or whatever nationality body

- This says to us that international exchanges such as this one are essential to future strategic stability

  ** This NATO advanced Research Workshop introduced a human element to this arcane world of quantitative models of strategic stability and perhaps started to reshape those images.

  ** After all, strategic stability is all about people living together on this earth and working to assure peaceful conditions in spite of important differences and contrary world views

  ** I think we collectively have demonstrated the human face of strategic stability

  ** I look forward to continuing our discourse by fax, mail, and the telephones, and, of course, Internet in the months to come.

- Our future work should continue to emphasize the calculus associated with strategic stability

  ** But our efforts must be tempered by a due regard given to the psychological

** The strategic images that guides all in our respective interpretations of strategic stability and what it means for our respective countries

- As these past days have shown, our discourse helps to address strategic stability and clarify the strategic perspectives **we may not share.**

4.2 RECOMMENDED ACTIONS

- The participants found this NATO Advanced Research Workshop extremely instructive as a foundational work toward reaching a consensus on an analytical framework to address the future role of nuclear weapons (and other Weapons of Mass Destruction) and possible disarmament measures. The participants unanimously recommended the continuation of this effort, under NATO sponsorship, in order to further the work begun. The Russian delegation volunteered to host the next meeting in Moscow (May - June 1996) should NATO support the second workshop. The Director of the workshop and its Co-Directors, without hesitation, recommend a second workshop. The Chinese volunteered to hold a third workshop in Beijing.
- Conventional weapons. NATO and Russia should set up a joint working group to examine the impact on stability of conventional weapons with high accuracy or other special capabilities. The working group should examine the possibility of amending MTCR to regulate such technology, or make alternative provision for the necessary supervisory control.
- Defense conversion and re-employment. NATO and Russia should set up an association of academics, political scientists, military experts and industrialists to create ideas, exchange information and assist in planning for defense conversion and re-employment of military personnel. This association should also incorporate mass media personnel, and should operate as a motivated "think tank", available to assist NATO and Russia on specific problems connected with arms control, defense conversion and stability problems. The attendance list of this ARW would be an excellent start point for such an association. Which should be created with the minimum of bureaucracy. This association would bridge the "information gap" which has troubled many delegates.

4.3 FUTURE WORK

This landmark workshop has produced the foundational work necessary to undertake the quantitative and qualitative evaluation of multiple ways to ensure multiple levels of stability in a multipolar world. The overarching consensus of the ARW is that a broader spectrum of threats in the post cold war world must be met by a broader set of approaches and means. This workshop encompassed four separable activities.

- Analysts examining the dynamics of various categories of stabilities(or instabilities)The analyses included a clear statement as to:

(1) the category of stability being addressed;

(2) the measure, if any; and

(3) which factors promote (erode) stability in that category

- Strategic planners projecting the world environment and identifying possible threats to various categories of stability (or instability)

- Creative conceivers formulating and defining new concepts to avoid possible instabilities and to promote stability as opportunities are presented These concepts were focused accordingly to the potential problems that the planners identified.

- Strategic planners (and analysts) evaluating the merits and demerits of proposed concepts. The evaluations being performed in the presence of potential instabilities identified by the planners and the dynamics as developed by the analysts.

This (first) workshop made considerable progress toward identifying potential instabilities and understanding the dynamics attendant to particular categories of stability. The immediate task is to inventory an agreed set of threats to global and regional stability in our dynamic and changing world and match them with appropriate concepts to redress the threat(s).

The thrust of the second ARW will be to focus on papers centered on new concepts to alleviate possible instabilities. And have the following tasks:

- Formulate concepts that will promote stability in a multipolar world that is not dominated by Mutual Assured Destruction. Special attention should be given to concepts based on protection.

- Continue the development of the theoretical underpinnings begun in the first ARW. Special emphasis should be given to Cooperation Theory and the robustness derived by the interaction between Confrontational and Cooperational Theory and their measures.

- Evaluate new proposed concepts to promote stability in the presence of nuclear (and other WMD) weapons. The described concepts must also be defined to include appropriate measures of merit.

- Important concepts should then be brought to the attention of governments and exposed to public opinion through the dissemination of a consensus report reflecting the deliberations of the workshop

All participants of this workshop agree that NATO is crucial and the proper organizational structure to sponsor future ARWs involving scientific and military institutes

from the participating countries. These ARWs build on the Partnership For Peace/NATO-Russian CIS-Eastern Europe.

The Russian delegation expressed readiness to take the responsibility to organize and coordinate the next ARW on Strategic Stability in the Post-Cold War World and the Future of Nuclear Disarmament in Moscow (May-June 1996).

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DE DETECTION DES CRISES[1]

J. C. Le Minh

Afin de prévenir un conflit ou de gérer une crise, l'idéal serait de détecter et de localiser les risques avant que ceux-ci ne prennent une forme aiguë.

Le modèle développé par le CAD vise à:

- déterminer les pays les plus susceptibles de provoquer une crise ou d'être impliqués dans un conflit pouvant induire un désordre régional, continental ou mondial,
- établir un classement de ces mêmes Etats en fonction du "potentiel de risques" que chacun d'eux représente,
- distinguer et regrouper ces pays selon la nature et la forme de la menace dont ils sont porteurs.

Le modèle a été construit à partir de trois grands types de données: les indicateurs de risques de crise, les indicateurs de puissance et les indicateurs d'intérêt national.

La première famille de données, **les indicateurs de risques de crise ®**, permet de porter un jugement global sur la situation d'un Etat. Il s'agit de déterminer si le pays considéré comporte un ou plusieurs facteurs de déstabilisation.

Ce groupe de données sert aussi à examiner si ces éventuelles faiblesses s'accompagnent d'un comportement agressif sur la scène internationale ou impliquent au contraire un effacement diplomatique. Dans cette dernière hypothèse, le pays se trouverait alors soumis à des influences et des convoitises diverses. La famille des indicateurs de risques de crise se compose de trois ensembles:

1. Etat général de l'économie
2. Structure sociale
3. Volonté de puissance

[1] Annex 2 of this paper includes an english version.

L'état général de l'économie" comporte les postes suivants:

- PNB/Habitant
- Taux de chômage
- Taux d'inflation
- Pourcentage du PNB consacré à la défense

Les taux de pourcentage du PNB consacré à la défense trop élevés ou trop faibles se situent dans la même catégorie. A moyen et long termes un pourcentage trop élevé grève le budget d'un pays et provoque des effets d'éviction. Un taux trop faible (rapporté au niveau du PNB bien sûr) montre que le pays étudié consacre une part insuffisante à sa défense et peut se retrouver en situation de faiblesse. En l'espèce les deux extrêmes se rejoignent et produisent un même effet négatif.

La structure sociale" compte les sous-ensembles suivants:

- L'espérance de vie
- Le degré de démocratie
- La diversité ethnique
- La diversité religieuse

L'espérance de vie a été calculée à partir des "Population Studies" et des "World Population Prospects" de l'ONU.

Les diversités ethniques et religieuses ainsi que le degré de démocratie (qu'il serait également possible d'appeler "diversité politique") se complètent et ne se recoupent jamais. Ils ne font donc pas double (triple) emploi. Dans l'analyse de la structure sociale d'un pays ces indicateurs sont indissociables de l'espérance de vie.

La volonté de puissance" contient les sous-ensembles suivants:

- L'absence de tendances hégémoniques
- L'absence de revendications territoriales
- L'absence de forces prépositionnées.

Ces trois indicateurs permettent de juger l'intégration du pays analysé dans le système international. Il s'agit d'examiner les relations diplomatiques de cet Etat, de recenser ses accords de défense et de déterminer les points de litige qu'il pourrait avoir avec d'autres pays.

En additionnant les résultats des trois ensembles (Etat général de l'économie, structure sociale et volonté de puissance) on, obtient un chiffre global traduisant, pour un pays donné, les risques de crises.

Les indicateurs de puissance (P) visent quant à eux à mesurer le potentiel militaire. Ils ne se limitent pas à l'aspect quantitatif. Ils contiennent en effet un jugement qualitatif tant pour les secteurs nucléaire, balistique et spatial que classique.

Afin de pouvoir porter un jugement global et cohérent sur le "potentiel danger" (R+P) d'un pays, le système de notation adopté pour les indicateurs de risques de crise a été repris pour les indicateurs de puissance. Afin de classer les pays et de distinguer des catégories, des seuils ont dû être fixés. Largement arbitraires ils ont pour vocation première et unique de dégager une tendance générale (et pas plus) sur la puissance d'un pays. Ici aussi, il n'a pas été établi de pondération. Conférer une valeur ajoutée à tel équipement ou matériel militaire plutôt qu'à tel autre reviendrait à privilégier dès le départ un type de conflit particulier et donc à raisonner avec des "a priori".

La puissance d'un pays est ici jugée comme un tout et n'est pas modulée en fonction de la nature de la crise dans laquelle le pays analysé risque de se retrouver impliqué.

Néanmoins, une fois effectuée, au moyen du filtrage de l'indicateur national, l'étude d'environnement, il sera possible d'examiner si l'Etat considéré dispose des équipements nécessaires pour répondre aux défis auxquels il doit faire face.

La troisième famille, **les indicateurs d'intérêt national (N)**, a pour but de mesurer le degré d'implication d'un pays donné dans telle ou telle crise. Une analyse des risques de dérapage d'un conflit, avec un jugement sur l'identité des éventuels intervenants, devient alors possible.

Les indicateurs d'intérêt national se composent de deux grandes familles:

- Indicateurs d'intérêt national: éléments de fond
- Indicateurs d'intérêt national: éléments conjoncturels

La distinction des indicateurs d'intérêt national entre d'un côté des critères de fond et de l'autre des indicateurs plus conjoncturels est apparue indispensable.

Les éléments de fond permettent de mesurer sur les moyens et long termes le degré d'implication d'un pays dans une crise ou le niveau de ses intérêts dans tel ou tel Etat.

Ces critères "lourds" sont incontournables et doivent de toute façon constituer la première approche du problème. Ils ne se suffisent cependant pas à eux-mêmes. Ce n'est pas parce qu'un pays est concerné par une crise qu'il interviendra automatiquement. A contrario un Etat peut décider d'agir alors que ses intérêts immédiats ne semblent pas directement en cause. Ces décisions d'intervention ou de non action dépendent largement d'éléments

conjoncturels liés en partie à la situation intérieure du pays concerné à un moment donné. Cette seconde famille d'indicateurs d'intérêt national joue d'une certaine manière un rôle de pondération autorisant un deuxième degré dans l'analyse.

Partie intégrante du modèle de détection des crises mais intervenant à un second niveau, la famille des indicateurs d'intérêt national dispose d'un système de notation propre allant de 0 à 10 (0,1,2,3,4,5,6,7,8,9,10).

Pour chacun de ces deux sous-ensembles (critères de fond et éléments conjoncturels) les notes suivantes signifient:

10, 9, 8 points ⇨ intérêt national très élevé

7, 6, 5 points ⇨ intérêt national plutôt élevé

4, 3, 2 points ⇨ intérêt national bas

1, 0 points ⇨ pas d'intérêt national

Dans un premier temps, afin de déterminer le "potentiel danger" que recèle chaque pays, les indicateurs de risques de crise et de puissance doivent se trouver associés dans l'analyse. C'est en effet la conjonction de ces deux familles de données qui permet de savoir si un pays porte en son sein des risques de dérapage. Par exemple, un pays dont la volonté de puissance ne s'appuie pas sur une économie saine et n'est pas relayée par une capacité militaire suffisante ne représentera pas, a priori, une menace de déstabilisation. Quatre types de situations ont été dégagées: dans les deux premiers cas le risque de crise est élevé et la puissance du pays considéré faible ou forte. Dans les deux cas suivants, avec un risque de crise faible, la puissance de l'Etat analysé atteint un haut ou un bas niveau.

Mais l'appréciation portée sur un pays devra tenir compte de son environnement.

Ainsi, un pays dit "faible" ne courra pas les mêmes risques de se voir impliqué dans une crise selon qu'il aura des frontières communes avec un pays "fort" ou avec un autre pays "faible", selon qu'il représentera - ou pas - un intérêt de quelque nature que ce soit pour une ou plusieurs grandes puissances.

C'est ici qu'intervient la troisième famille de données, les indicateurs d'intérêt national. Ces indicateurs revêtent un double aspect. Ils peuvent en effet être utilisés de deux façons, de manière bi ou multilatérale.

Dans le premier cas cela permet d'analyser si les intérêts d'un pays donné sont concernés ou menacés par une crise se déroulant dans un autre Etat. Dans une seconde acception, cela revient à procéder à une étude d'environnement, à établir, à partir d'une crise considérée, un recensement exhaustif des risques de dérapage.

La sélection des indicateurs a occasionné un certain nombre de difficultés. Il a tout d'abord fallu éviter de noyer l'analyse dans des informations trop diverses et nombreuses. Mais il était également indispensable de conserver suffisamment de critères afin de pouvoir prononcer un diagnostic clair sur la santé du pays analysé. Il a ensuite été nécessaire d'établir un juste compromis entre des indicateurs suffisamment précis pour autoriser un jugement exact sur un pays et en même temps assez généraux pour ne pas dénaturer le bilan de cet Etat en le parcellisant.

D'un côté, il convenait de choisir des critères incontestables afin de pouvoir établir des comparaisons rigoureuses entre les pays. De l'autre, il fallait veiller à ce que le critère "brut" ne fausse pas l'étude qu'il était censé illustrer.

Ainsi dans la famille des indicateurs de risques de crise, dans l'ensemble "état général de l'économie", le critère du montant du déficit budgétaire n'a pas été retenu. En effet, pour juger de l'impact économique d'un déficit budgétaire, il faut d'abord apprécier divers éléments tels que le niveau général de l'économie, l'emploi et le financement de ce déficit budgétaire.

Les critères retenus sont donc des indicateurs "lourds", "parlants", communs à un très grand nombre d'Etats. Ils fournissent des indications générales sur la situation économique et sociale d'un pays ainsi que sur sa volonté de puissance. Ces renseignements autorisent un jugement global, concis et laissant peu de place à la contestation puisqu'utilisant des éléments de fond.

La contrepartie de ces avantages apparaît immédiatement et se révèle inhérente à la manière dont le modèle a été construit: l'aspect conjoncturel est largement laissé de côté. Ainsi, l'analyse dans le temps d'un pays donné n'est concevable qu'en raisonnant sur plusieurs années. En dessous de ce seuil, les indicateurs choisis ne permettent pas de dégager des tendances significatives, de souligner des évolutions intéressantes.

Ces remarques préliminaires exposées, l'architecture générale du modèle se présente de la manière suivante:

- Comme cela a été exposé plus haut, le raisonnement se base sur trois familles de données:

  1) Indicateurs de risques de crise (R)

  2) Indicateurs de puissance (P)

  3) Indicateurs d'intérêt national (N)

- Dans un premier temps, c'est la conjonction des indicateurs de risques de crise (R) et de puissance (P) d'un pays qui détermine son "potentiel danger" (D):

R « haut »	+ P « bas »	⇨	Pas menace extérieure (mais possibilité de crise interne): D « bas »
R « haut »	+ P « haut »	⇨	Menace importante: D « haut »
R « bas »	+ P « haut »	⇨	Pas de menace de déstabilisation a priori: D « bas »
R « bas »	+ P « bas »	⇨	Pas de menace extérieure: D « bas » (mais le pays peut être l'objet de diverses convoitises)

- Dans un second temps "le potentiel danger" (D) doit être confronté aux indicateurs d'intérêt national (N). Ce filtrage permet:

  .soit de mesurer le degré d'implication d'un pays défini (P) dans une crise donnée (C)

  D + N ⇨ P ⊂ C: « haut » ou « bas »

  .Soit de moduler le "potentiel danger" (D) en fonction de l'environnement et de la nature de la menace:

  D + N ⇨ inflexion (« haut » ou « bas ») de D en fonction de N.

  Le modèle répond donc aux fonctions suivantes:

  - Classer un ensemble de pays à un instant T du plus dangereux au moins menaçant. En fin d'analyse, ce classement peut être présenté graphiquement.
  - Dégager, sur plusieurs années, les évolutions profondes d'un Etat et déterminer s'il s'engage dans une situation de crise ou au contraire s'en éloigne.
  - Mesurer les risques de dérapage d'une crise et les pays susceptibles de s'y trouver impliqués.
  - Définir la nature de la crise pouvant éclater.

Le modèle se révèle par contre totalement incapable de dire quand les menaces potentielles peuvent se concrétiser. Est-il d'ailleurs réellement possible de prendre en compte dans un modèle une telle analyse ? Il conviendrait en tout cas d'intégrer des facteurs humains (psychologie des dirigeants des pays concernés notamment), difficilement exploitables. Le CAD ne s'est pas engagé dans cette voie.

L'utilisation de données brutes constituant un procédé réducteur, il a paru judicieux d'user d'un système de notation allant de 1 à 4 (1 ; 2 ; 3 ; 4) pour les indicateurs de risques de crise et de puissance et de 0 à 10 pour les indicateurs d'intérêt national.

Avec cette gamme de notes il devient alors possible d'associer des résultats économiques avec, par exemple, une appréciation sur la volonté de puissance d'un pays.

Cela permet aussi d'introduire un jugement de valeur dans le modèle.

Cette raison justifie le parti pris de la non pondération des indicateurs. Pondérer alors qu'il existe déjà un jugement de valeur inhérent au modèle amènerait une double distorsion par rapport à la donnée brute initiale.

La base de données du modèle peut être alimentée à partir de sources d'informations ouvertes (annuaires de l'ONU et Military Balance par exemple). Permettre à chacun un accès aisé à des données relativement sûres et permettant des comparaisons internationales a constitué, dès la sélection des indicateurs, un souci permanent.

Ainsi, dans la famille des indicateurs de risques de crise, au sein de l'ensemble "structure sociale", le taux de couverture médicale (nombre de médecins pour mille habitants), indicateur préalablement choisi, a été remplacé par l'espérance de vie. A l'usage, le critère initialement sélectionné s'est en effet révélé imparfait: calculé différemment selon les pays, il ne permettait pas les comparaisons internationales.

ANNEX 1

PNB PAR HABITANT

SITUATION A:

PNB/hab>8000$ 1

SITUATION B:

>PNB/hab>2000$ 2

SITUATION C:

>PNB/hab>500$ 3

SITUATION D:

PNB/hab<500$ 4

TAUX DE CHÔMAGE

SITUATION A:

De 0 à 5% 1

SITUATION B:

De 5 à 15% 2

SITUATION C:

De 15 à 25% 3

SITUATION D:

Taux de chômage > 25% 4

TAUX D'INFLATION

SITUATION A:

à 5% 1

SITUATION B:

à 10% 2

SITUATION C:

à 25% 3

SITUATION D:

Taux d'inflation > 25% 4

POURCENTAGE DU PNB CONSACRÉ À LA DÉFENSE

SITUATION A:

à 5% 1

SITUATION B:

à 10% 2

SITUATION C:

à 20% 3

SITUATION D:

à 0,6% et > 20% 4

L'ESPÉRANCE DE VIE

SITUATION A:

Espérance de vie ≥ 75 ans 1

SITUATION B:

ans > espérance de vie ≥ 65 ans 2

SITUATION C:

ans > espérance de vie ≥ 50 ans 3

SITUATION D:

Espérance de vie < 50 ans 4

LE DEGRÉ DE DÉMOCRATIE

Situation A:

Multipartisme + liberté des élections + respect des choix et des échéances électorales + liberté d'expression de l'opposition. 1

Situation B:

"Situation A" mais droit d'expression de l'opposition limité et violences de certains partis d'opposition (attentats). 2

Situation C:

Multipartisme naissant (ou finissant) oligarchie, opposition muselée. 3

Situation D:

Parti unique, élimination des opposants politiques, embrigadement des populations en particulier des jeunes, délation organisée. 4

LA DIVERSITÉ ETHNIQUE

Situation A:

Mélange de populations avec capacité d'assimilation par les résidents et d'intégration des nouveaux arrivants. 1

Situation B:

Mélange de populations avec taux important d'immigration et faible capacité d'intégration des nouveaux arrivants. 2

Situation C:

Mélange de peuples refusant un destin commun. Pas de haine ancestrale. 3

Situation D:

Mélange de peuples (ou de tribus) historiquement opposés (massacres, génocides). 4

LA DIVERSITÉ RELIGIEUSE

Situation A:

Cohabitation religieuse sans heurt. 1

Situation B:

Luttes d'influence entre un pouvoir laïc et des religions ou entre une religion d'état et des minorités. Tentatives pour imposer un ordre moral (de la part d'un groupe de pression). 2

Situation C:

Opposition(s) religieuse(s) et/ou non reconnaissance de droits d'une (ou de) minorité(s). Interdiction de pratiquer leur culte. 3

Situation D:

Haines religieuses ancestrales ponctuées de massacres. 4

L'ABSENCE DE TENDANCES HÉGÉMONIQUES

Situation A:

Repli sur le territoire national. 1

Absence de message au monde.

Situation B:

Tentatives d'accroissement de l'influence au niveau régional. 2

Situation C:

Activisme de la diplomatie, hégémonie linguistique, prise de contrôle d'entreprises étrangères. 3

Situation D:

Diffusion d'un modèle culturel ou idéologique, tendances moralisatrices.

Pressions économiques pour contrôler des marchés. 4

L'ABSENCE DE REVENDICATIONS TERRITORIALES

Situation A:

Frontières reconnues avec tous les pays voisins. Aucun litige territorial avec un autre pays. 1

Situation B:

Situation A + possessionS de territoires outre-mer ou extérieurs. 2

Situation C:

Possessions de territoires outre-mer ou extérieurs revendiqués par d'autres pays et/ou opposition interne. Pas de conflit ouvert. 3

SItuation D:

Occupation militaire et administration de territoires sans l'accord de la majorité de la population locale. Conflit ouvert. 4

L'ABSENCE DE FORCES PRÉPOSITIONNÉES

Situation A:

Aucune force militaire à l'étranger. 1

Situation B:

Prépositionnement de forces dans le cadre d'un accord de défense librement consenti et recevant l'aval de la majorité de la population. 2

Situation C:

Prépositionnement de forces en vue d'un engagement dans un conflit armé. 3

SItuation D:

Forces d'occupation sur un territoire extérieur. 4

En additionnant les résultats des trois ensembles (Etat général de l'économie, structure sociale et volonté de puissance) on obtient un chiffre global traduisant, pour un pays donné, les risques de crises. Il est possible de représenter graphiquement cette

menace, en opérant de surcroît des comparaisons de pays à pays. VOIR SCHEMA PAGE SUIVANTE.

II - LES INDICATEURS DE PUISSANCE COMPORTENT LES ENSEMBLES SUIVANTS:

La puissance nucléaire

La capacité spatiale

Le potentiel balistique

La qualité des unités

Le nombre de chars (251)

de pièces d'artillerie (252)

d'avions de combat (253)

d'hélicoptères (254)

de porte-avions, sous-marins (255)

de corvettes, destroyers, frégates (256)

de patrouilleurs (257)

LES EFFECTIFS MILITAIRES

LA PUISSANCE NUCLÉAIRE:

Pays A:

Possédant plus 3 000 têtes nucléaires. 4

Pays B:

000 > B > 50 tetes nucleaires 3

Pays C:

> C ou Pays soupçonnés de détenir des armes nucléaires ou pays travaillant à la réalisation d'armes nucléaires. 2

Pays D:

Pas d'armes nucléaires.

Pas de travaux pour en réaliser. 1

LA CAPACITÉ SPATIALE:

Pays A:

Pays possédant:

des satellites d'observation

des satellites de communication 4

et les lanceurs correspondants

Pays B:

Pays possédant des satellites de communication et les lanceurs correspondants. 3

Pays C:

Pays utilisant les satellites de communication et/ou les lanceurs d'un pays ami. 2

Pays D:

Pays sans satellite. 1

LE POTENTIEL BALISTIQUE:

Pays A:

Pays possédant plus de 1000 missiles balistiques. 4

Pays B:

> B > 100 missiles balistiques. 3

Pays C:

Pays disposant de moins de 100 missiles balistiques. 2

Pays D:

Pays ne disposant pas de missile balistique. 1

LA QUALITÉ DES UNITÉS:

Pays A:

Armée de professionnels. 4

Pays B:

Armée de conscription avec un encadrement (Off. Et S/Off.) de professionnels. 3

Pays C:

Unités de réserve. 2

Pays D:

Unités non organisées. 1

DÉNOMBREMENTS DES ÉQUIPEMENTS MAJEURS:

Nombre de chars.

Nombre de pièces d'artillerie.

Nombre d'avions de combat.

Nombre d'hélicoptères.

Nombre de porte-avions, sous-marins.

Nombre de corvettes, destroyers, frégates.

Nombre de patrouilleurs.

NOMBRE DE CHARS

Pays A:

Pays possédant plus de 3000 chars. 4

Pays B:

> B > 2000 chars. 3

Pays C:

> C > 1000 chars. 2

Pays D:

Pays possédant moins de 1000 chars. 1

NOMBRE DE PIÈCES D'ARTILLERIE

Pays A:

Pays possédant plus de 3000 pièces d'artillerie. 4

Pays B:

> B > 2000 pièces d'artillerie. 3

Pays C:

> C > 1000 pièces d'artillerie. 2

Pays D:

Pays possédant moins de 1000 pièces d'artillerie. 1

NOMBRE D'AVIONS DE COMBAT (TOUTE NATURE CONFONDUE)

Pays A:

Pays possédant plus de 1000 avions. 4

Pays B:

> B > 300 avions. 3

Pays C:

> C > 100 avions. 2

Pays D:

Pays possédant moins de 50 avions. 1

NOMBRE D'HÉLICOPTÈRES

Pays A:

Pays possédant plus de 1000 hélicoptères. 4

Pays B:

> B > 300 hélicoptères. 3

Pays C:

> C > 100 hélicoptères. 2

Pays D:

Pays possédant moins de 100 hélicoptères. 1

NOMBRE DE PORTE-AVIONS ET DE SOUS-MARINS

Pays A:

Pays possédant plus de 30 porte-avions et sous-marins. 4

Pays B:

> B > 20 porte-avions et sous-marins. 3

Pays C:

> C > 10 porte-avions et sous-marins. 2

Pays D:

Pays possédant moins de 10 porte-avions et sous-marins. 1

NOMBRES DE CORVETTES, DESTROYERS, FRÉGATES

Pays A:

Pays possédant plus de 30 corvettes, destroyers, frégates. 4

Pays B:

> B > 20 corvettes, destroyers, frégates. 3

Pays C:

> C > 10 corvettes, destroyers, frégates. 2

Pays D:

Pays possédant moins de 10 corvettes, destroyers, frégates. 1

NOMBRE DE PATROUILLEURS

Pays A:

Pays possédant plus de 60 patrouilleurs. 4

Pays B:

> B > 40 patrouilleurs. 3

Pays C:

> C > 20 patrouilleurs. 2

Pays D:

Pays possédant moins de 40 patrouilleurs. 1

LES EFFECTIFS MILITAIRES:

Pays A:

Dispose de plus d'un million d'hommes 4

Pays B:

million d'hommes > effectifs pays B ≥ 600 000 hommes 3

Pays C:

000 hommes > effectifs pays C ≥ 250 000 hommes 2

Pays D:

Dispose de moins de 250 000 hommes 1

INDICATEURS D'INTÉRÊT NATIONAL (ÉLÉMENTS DE FOND):

Nombre de ressortissants nationaux dans le pays concerné 0: < 1/1000 de la population du pays concerné

: > 1/1000 de la population du pays concerné

Liens historiques

: non

: oui

Nombre d'immigrants du pays étudié

: < 1/100 de la population de notre pays

: > 1/100 de la population de notre pays.

Emplacement stratégique

: non

: oui

Production importante de matières premières ou précieuses

: non

: oui

Investissements nationaux dans le pays analysé

: < 1/100 PNB ,

: > 1/100 PNB

Menace(s) contre notre pays ou les intérêts vitaux de pays alliés

: non

: oui

Indicateurs d'intérêt national (éléments conjoncturels):

Campagne télévisée 1

Campagne de presse (journaux) 1

Pressions écologiques 1

Groupes pratiquant des pressions illégales 1

Pressions d'organisations religieuses idéologiques ou charitables 1

Sondages 1

Volonté de cacher ou d'exporter des problèmes 1 (en général de problèmes économiques) 2

Volonté de conserver ou d'acquérir un rôle mondial 2

LISTE DE DIFFUSION

DIFFUSION INTERNE:

- D
- DT
- DA
- CS
- NUC (Monsieur LASCAR)
- OPE (4 ex)
- OPS (Monsieur LE MINH)
- CHRONO

DIFFUSION EXTERNE:

- DRET/D
- CMMD - Général FRICAUD-CHAGNAUD
- DRM - Colonel IACCONI

- EMA/EG
- EMAT/CEP - Colonel d'ORNANO

ANNEX 2 ENGLISH VERSION

To prevent a conflict or to manage a crisis, the best solution would be to detect and to localize risks before explosion.

The model developed by "Defence Analysis Center" aims at :

- to determine countries which are more capable to provoke a crisis or to be involved in a conflict which may lead to a regional, continental or world-wide disorder,
- to set a classification of these countries according to their potential of risks,
- to discern and to group those countries according to the nature and the configuration of threat they represent.

The model has been built with three categories of data : indicators of risk of crisis, indicators of power and indicators of national interest.

With the first data family, indicators of risk of crisis (R), it's possible to make a global judgment on a country. The question is to examine whether a country contains or not risks of explosion.

This unit of data enables us to see if these eventual factors of danger are to be taken with an aggressive behaviour on the international scene or on the contrary induce a diplomatic discretion.

With this latest supposition, the country would be subjected to several influences and foreign interests.

Indicators of risk of crisis are divided into three categories :

1. General Statement of Economy

2. Social Structure

3. Will of power.

In the first category you have :

—GNP per inhabitant

—Unemployment

—Inflation rate

—GNP ratio for defense.

You can see that we have put in the same group a GNP ratio for too low defenses and a GNP ratio for too high defenses.

Those two rates represent the same danger : a high GNP ratio for defense burdens budget and means that the country takes arms.

A low GNP ratio for defense means that the concerned country does not grant a sufficient part to its defense. It can be dangerous especially if its neighbours are strong.

In the second category, Social Structure, you can find four sub categories :

- the democracy level
- the ethnical diversity
- the religious diversity
- life expectancy

Life expectancy has replaced the medical coverage (which is the numbers of doctors per thousand inhabitants). With a different calculation according to each country, this indicator could not give accurate international comparisons.

Life expectancy has been calculated from "Populations Studies" and "World Population Prospects" of U.N.

The ethnic and religious diversities and the democracy level (which could be called political diversity) are complementary and never interfere.

In the social structure analysis of a country those indicators cannot be separated from life expectancy.

The will of power is divided into three categories : the will of hegemony, territorial claims, occupation forces outside.

Those three indicators make it possible to judge the integration of the analized country in the international system.

The question is to examine diplomatic relations of this state, to check its defense agreements and to determine the legal disagreements it might have with other countries.

Adding up the results of the three categories (the general state of economy, the social structure and the will of power) we have a global number indicating, for a given country, the risks of crisis.

Indicators of power.

To have a global and coherent judgment on the danger (R+P) represented by a country, the notation system used for indicators of risks of crisis is the same as the one for indicators of power. To classify the countries and to make distinction between categories, levels have been set.

They are fully arbitrary and their first and only vocation is to determine a general tendency on the power of a country.

In this case, there was no discrimination. To give an added value to such military equipment or material rather than on the type of equipment would favour at the beginning a particular conflict and thus argue with prejudices.

The power of a country is judged in a global way. It is not modulated by the kind of crisis in which the analysed country risks are implicated.

However, after studying the environment through the national indicator, it will be possible to examine whether that state has the right equipments to cope with dangers.

Here we have to speak about the third family of data, the indicators of national interest. Those indicators have a double aspect.

They can be used in two ways, a bi or multilateral way.

In the first case it makes possible to analyze whether the interests of a country are concerned of threatened in a crisis which takes place in another state. In the second case it allows, from a considered crisis to take an exhaustive census of the risks of explosion.

The distinction of indicators of national interest between weights criteria and domestic criteria proved absolutely necessary.

The weights indicators allow to measure on a medium and long term ranges the degree of involvement of a determined country in a definite crisis or the level of its interests in such or such state.

Those heavy indicators can't be ignored and in any way must constitute the first analysis of the problem.

But they are not sufficient. It is not because a country is concerned with a crisis that it will automatically intervene.

On the other side a country can decide to act even though its immediate interess do not seem directly engaged.

Those decisions of intervention or non intervention are largely dependent on variable elements connected with the interior situation of the concerned country in a given instant. The second family of indicators of national interest plays its part of balancing allowing a further stage in the analysis.

The indicators of national interest has its own system of valuation which goes from 0 to 10.

It is part of the global frame of crisis detection but it plays its part at a second level.

The selection of indicators has provoked many difficulties : first, it was necessary not to swamp analysis with too much an diverse informations. But it was also necessary to keep enough criteria to make a clear diagnosis on the health of the considered country.

Then, it has been necessary to choose indicators both precise to allow an accurate judgement and in the same time general not to distort the balance sheet of this state with parcelling.

So, in the category indicators of risks, in the group General Statement of economy, the criteria of the budget deficit has not been selected.

Indeed, to judge the economic impact of a budget deficit, it is first necessary to analyze several data such as the general state of the economy, the use and the financing of this budget deficit.

Thus, the selected criterions are "heavy", "expressive" indicators.

They are common to various states. They give general information about the economic and social situation of a country an its will of power.

This information allows a global, concise judgment with no contest because they use leader data.

The counterpart of those advantages is obvious and is inherent to the building of the model : the variable aspect is omitted.

To analyze the evolutions of a country, it is necessary to examine this country for a long time (five to ten years to have something significant).

With a shorter period choosen indicators do not give significant tendencies and to emphasize interesting evolutions.

The theoretical framework of the model is :

First, the connection of risks of crisis and the power of the country determine the danger :

R "high" + P "low" ⇒ No threat outside

R "high" + P "high" ⇒ Important threat

R "low" + P "high" ⇒ No threat

R "low" + P "low" ⇒ No threat

Then, the danger must be confronted with the indicators of national interest. This filter enables :

- to measure the degree of how much involved a determined country (Co) in a definite crisis (C) may be

  D PLUS N ⇒ Co included in C : high or low

- to modulate the danger according to the surroundings and the nature of the threat

  D PLUS N ⇒ inflexion (high or low) D according to N

This model has the following functions :

—To classify countries in a precise moment from the more dangerous to the less threatening.

—At the end of the analysis, this classification can be presented graphically.

—To determine, on a long period, significant evolutions of the state and to see if this country goes into or out of the crisis.

—To measure the risks of explosion of a crisis and the countries which may be implicated in this crisis.

—To determine the nature of the crisis which could explode.

— This model cannot determine when threats can come true.

To determine the moment of explosion of a crisis it would be necessary to integrate human factors (leader's psychology of concerned countries) which are hardly to analyze.

We did not try this way.

The notation system uses the numbers 1,2, 3, 4 for indicators of risks of crisis and for power indicators and the numbers 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 for indicators of national interest.

With this scale of numbers it is possible to associate economic results with, for instance, a valuation on the will of power of a country.

It also allows to introduce a judgment of value in the model.

For such reason indicators are not balanced.

To balance while there is already a judgment of value in the model would create a double distortion compared with the initial rough data.

To use the model, original texts of open information can be used (Military Balance and United Nations year Books for instance). It gives everybody an easy access to relatively certain date which allow international comparisons.

SESSION REPORT
INTERNATIONAL STABILITY AND WAYS TO ACHIEVE IT[1]

M. G. Sovereign

(1) COMBAT POTENTIALS AND OPERATIONAL PLANNING: PAST AND PRESENT - PROFESSOR BRIGADIER FRITZ STOECKLI

Professor Stoeckli defined "combat potentials" in the usual way as weighted sums of force units of each side which are then addressed as a ratio and related to casualty rate and rate of advance. Professor Stoeckli gave insights into the historical origin of Soviet weightings or combat potentials going back to WWII. In particular he drew on the Model of Strategic Operations (MSO) developed in the early 1970s as described by Tsygichko. He gave an example based on a T-80B tank equal to one and the total score for a notarized rifle dimension of 678. Although rates of advance of 40km per day are indicated for a 6 to 1 ratio against hastily prepared defenses, with 3 to 1 against well prepared defenses, the rate of advance at the strategic level is only 8 km per day, far less than numbers often heard for modern warfare.

Many questions arose from Professor Stoeckli's presentation concerning the mechanics of the combat potential calculations and their interpretations at various command levels. In general it was agreed that there were differences in how the East and the West calculate and use these scores but complete understanding is still lacking. Uncertainty must be accounted for in their application. Dr. Umit Chandan from the SHARE Technical Center served as discussant and raised several issues as to how the scores interacted with doctrine and qualitative parameters of combat. Dynamic areas such as air power might be particularly difficulty to capture with this methodology.

Professor Stoeckli summarized by saying they are only a tool for the commander's staff, not a decision driver. It is not a predictive tool.

Based on these combat potentials, Stoeckli computes radios for NATO versus the Commonwealth of Independent States (CIS) of 1.3 to 1.5 to 1 based on the 1990 agreements on forces in Europe. These favorable ratios to NATO may by themselves imply a threat to the CIS but this is only if taken out of context.

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[1] Discussants: D. W. Daniel and U. Chandan; Rapporteurs: K. Helling and A. Tolk

(2) STABILITY IN THE POST MODERN AGE: A CONCEPTUAL EXPLORATION - PROFESSOR GREGORY FOSTER

Professor Foster spoke of great change in the perceptive of power in the Post Cold War era. In a well-connected world, the media contributes greatly to these perceptions . A military weak group may become powerful though manipulation of public opinion. Technological and environmental factors become far more important than coercive power.

In this new world stability is an inadequate conceptualization according to Professor Foster . "The end state of politics is justice." The question for NATO is that of the collective regional strategic that may achieve our goals. The West's military posture may be de-stabilizing in the new age, a difficult philosophical question requiring predictive powers.

(3) IS STABILITY ALWAYS DESIRABLE? AND IF NOT WHEN IS IT, AND WHEN ISN'T IT? - DR. HOLGER MEY

This paper took a very different approach than the previous paper. Dr. Mey took a pragmatic approach and pointed out that stability may indeed not produce results that are in the interest of any particular group, for example the West. Even during the nuclear stand off, alliances tend to achieve their political aims beyond stability. "Is it always in our interests to prevent any war at any cost?" The issue of expansion of NATO must go beyond its military stability affects as defined by the RSG.18 Panel 7 report.

Dr. Mey than specifically addressed the issue of offensive air power. He pointed out that RS6 -18 report states that offensive air tends to be destabilizing. It is dangerous to assume this implies that NATO should stop buying dual capable aircraft, particularly since "out of area" use such as in IRAQ may require offensive capability. He than described a number of cases where it would appear that offensive air capability was both stabilizing and supportive of Western aims and should not be renounced. Mobile air defenses may be looked at in the same manner.

A number of questions were generated by the talk and its contrast with the previous talk. In defense of the RSG.18 report it was pointed out that the "status quo" is not the objective assumed. Instability occurs as a function perceptions of both sides in the model. "Out of area" questions perse do not influence the stability in question.

Mr. David Daniel of the UK. Ministry of Defense served as a discussant at this point. He contracted the "idealistic" approach of Foster to the pragmatic" approach of Mey. A more dynamic model or process model may be the next step for RSG.18 definitions which represent a step forward, not a final answer.

(4) INSPECTING THE FOUNDATIONS OF OFFENSIVE DEFENSE THEORY: CAN THEY BEAR THE WEIGHT? - PROFESSOR C. L. GLASOR[2] AND DR. C. KAUFMANN

This paper thoroughly examined the many facets of offensive-defense theory on which most models of stability depend. Professor Kaufmann well analyzed a number of critiques of the theory in terms of the definition and measurement of offense and defense. The important questions of level of application and interpretation were again addressed. In summary Professor Kaufmann believes the foundations are solid. Despite several complications in today's world, there are no fatal flaws.

(5) STABILITY DURING CONFLICT - MR. JOHN KETELLE

Mr.Ketelle addressed the search for a stopping point after a conflict is initiated, as opposed to the other papers which address the tendency for conflicts to start. This work is in its early stages but is promising in its mathematical strength. It suggests:

1. Ways to discover at what point both sides might prefer settlement.
2. If such a way does not currently exist, an efficient way to pursue the war so that such a point will be reached.
3. When the war reaches such a point, a convenient way to properly balance the desires of both sides.

Mr. Kettelle suggested this would be a potential project for and East-West study, since it is unclassified.

Mr. Daniel again was discussant for the papers by Kaufmann and Ketelle. He pointed out that antagonists will make their decisions on their perceptions, not actuality. He reinforced Professor Sovereign's example of the difficulty of even grossly measuring the relative costs of weapons in the US versus USSR, much less their effectiveness. This difficulty in measuring costs is particularly important to Kaufmann's re-casting of offensive-defense theory at the aggregate level by using costs of systems and forces.

Professor Kaufmann answered that before WWI most experts perceived offense as easier than defense, but trench warfare was the actuality. Costs may be difficult to measure but are inherently easier to measure than effectiveness.

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[2] The University of Chicago

SUMMARY

In summary of Session II, Professor Sovereign, from the U.S. Naval Postgraduate School compared NATO's " 3 Part Strategy for Stability" with the 3-step paradigm for military stability suggested by RSG.18. The NATO strategy, as expressed in NATO Review of May 1995, consists of

1. Enlargement of NATO
2. Partnership for peace
3. New NATO - Russia relationship

The RSG.18 Military Stability paradigum calls for the defender to assess the:

a) Intentions of attackers

b) Risks to the attacker (Attackers risk aversion)

c) Probability of defeat of attackers.

These are a strikingly similar in portent which may validate the RSG.18 approach and indicate that is being adopted if only at an intuitive local by policy makers.

The Enlargement of NATO must call for re-calculation of the stability of East-West relations. As noted in the paper by Professor Stoeckli, the balance in Europe probably already favors the West. However to give a security guarantee to nations close to Russia calls for an entirely new calculation based on much longer lines of communication and interoperability obstacles for an enlarged NATO. Even intuitively these difficulties in achieving step 3 of the paradigm lead to the "Partnerships for Peace" approach rather than immediate enlargement.

Improving the relationship of NATO and Russia requires answering the problem stated by Mr. Chris Donnelley in his opening address. A positive contribution by the operational research community to the state-of-mind of the Russian officer community would be to work with them on the stability theory as laid out by RSG.18 and Mr. Kettelle's paper. This could be an opening that would encourage better perceptions on both sides, which we have seen are crucial to stability.

COMBAT POTENTIALS AND OPERATIONAL PLANNING-PAST AND PRESENT

F. Stoeckli

INTRODUCTION

The end of the Cold War led to a substantial reduction in armaments, but the bipolar confrontation has been replaced by a multipolar system. The possibility of new and variable alliances does not simplify the search for a new equilibrium of forces. Stability in a multipolar world and the corresponding criteria for sufficiency are being investigated at different levels, but it appears that quantitative parameters are required at expert level.

The general idea is to provide each party with a sufficiently high defensive potential, while denying an aggressor reasonable chances of success. This problem has been considered in various mathematical approaches such as the model proposed by Huber[1] and used by Huber and Schindler[2], to investigate regional stability. It appears, that similar modelling is also being carried out by the Russian General Staff on the basis of the *Model of Strategic Operations* (MSO), discussed in detail elsewhere [3,4] by V.Tsygichko and the present author.

In the last analysis, all models require a number of parameters reflecting the potentials of the sides involved in a possible conflict. As discussed below, such parameters can be derived either from historical data analysis[5], or from advanced modelling. The latter approach provides a suitable framework for the concepts of combat potentials and correlation of forces, which played an important role in Soviet operational planning after World War II. The correlation of forces can be related numerically to loss rates and rates of advance, two important battlefield parameters at the operational level (Army/Front). In fact, they are considered as major indicators for the success or the failure of the operation.

Combat potentials have already been examined by NATO and Russian experts in joint simulations (JOSIM), as revealed by the Russians themselves in *Voyennaya Mysl'*[6].

Mathematical modelling is certainly a useful tool, but its basis and its limitations must be well understood, in order to assess its real potential. Ideally, a model should be tested by comparing its predictions with the outcome of known operations. As far as we know, this has been the case for MSO, which has been applied successfully to World War II operations.

In our opinion, modern operational planning should take into account historical data analysis and the method based on combat potentials, to provide useful indicators. We shall examine these approaches in turn.

HISTORICAL DATA ANALYSIS

As discussed in detail elsewhere [5,7,8], the analysis of Soviet and German data provides useful information on losses and on rates of advance at the upper operational level (mostly Front and above). This type of approach leads to statistical correlations, where the correlation of forces plays an important role. In the absence of a clear definition of this concept in Soviet military literature, we defined it as an arithmetic mean of the individual correlations in men, tanks, guns and aircrafts, the main components of the battlefield. If needed, a weighting factor could also be introduced, to take into account the relative contributions of the weapons' systems or possible changes in their performances. In the case of a given technical and operational environment, like the Soviet-German front of 1944-45, this definition of the correlation of forces seems appropriate. Table 1 shows the correlations for typical operations.

Table 1: Correlations of forces at Army and Front level for typical operations in 1944-45.

	Correlation Soviet:enemy				
Operation	Men	Tanks	Guns	Air	Overall
Lvov-Sandomir	1.3:1	2.4:1	2.2:1	4.0:1	2.2:1
Carpathians	1.0:1	3.2:1	1.5:1	2.5:1	2.0:1
Petsamo	1.8:1	2.5:1	2.8:1	6.3:1	2.9:1
Visla-Oder	4.0:1	5.7:1	6.7:1	7.9:1	5.8:1
East Prussia	2.1:1	5.5:1	3.1:1	4.0:1	3.6:1
Berlin	2.5:1	4.1:1	4.2:1	2.3:1	3.4:1
Manchuria	1.2:1	4.8:1	4.8:1	1.9:1	3.3:1

As illustrated by Fig. 1, the average daily loss rate (killed and wounded) of the Soviet Army is an inverse function of the correlation of forces, here a Soviet superiority ranging from 2:1 to 6:1 at the operational level. There is evidence, that this relation was used in the planning of the Manchurian operation of August 1945. It may also explain the assumption of daily losses around 1.2-1.5% in the case of an attack by the Warsaw Pact forces against the West, as learnt from material supplied by Colonel G.D.Wardak for the *Voroshilov Lectures*[8].

Fig. 2 shows the average rates of advance of Soviet Armies and Fronts, as a function of the correlation of forces (superiority). The effect of terrain is clearly indicated by the low rates of advance in hilly terrain, as opposed to relatively open terrain. This was the case in the Carpathians and in the Lovov-Sandomir operation, fought with similar correlations of forces (see Table 1) and similar daily loss rates. Owing to the lower rates of advance, the operation in the Carpathians lasted much longer and the Soviets suffered heavier overall casualties.

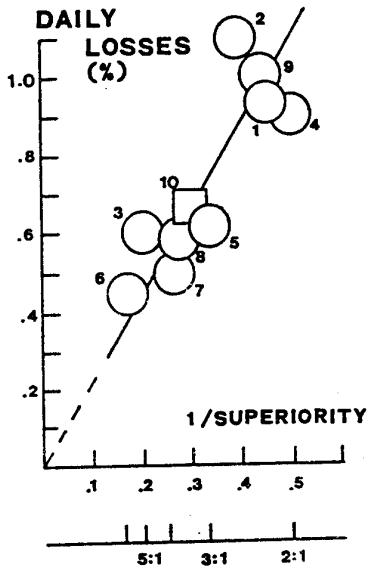

Fig. 1: Average daily loss rates (killed and wounded) at Army and Front level during Soviet offensive operations in 1944-45. For mathematical reasons, the loss rates are shown as a function of the inverse of the correlation of forces.

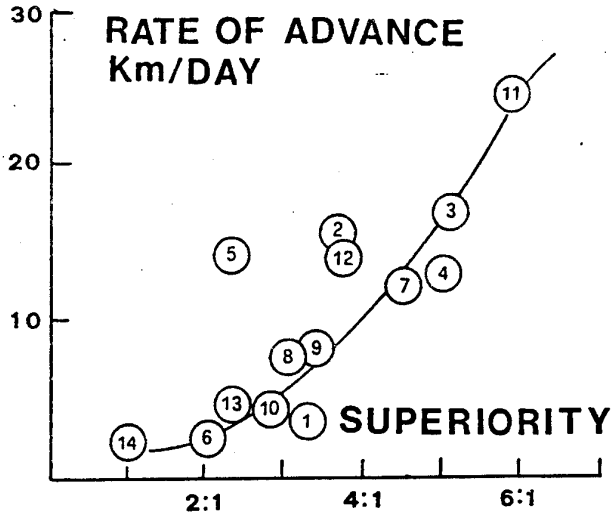

Fig. 2. Average rates of advance of Soviet Armies and Fronts in 1944-45 as a function of the correlation of forces (Soviet superiority).

The transposition of Fig. 2 to modern conditions[10], taking into account hints found in the Soviet literature, leads to a curve similar to that published in 1982 by Tatarchenko in *Voyennaya Mysl'*[11] and declassified by 1990. In fact, it corresponds to Fig. 3 shown in the next section and derived from the Soviet model MSO.

The analysis of data on casualties and on losses in equipment, recently declassified in Russia[12], enabled us to calculate the average contribution-direct or indirect-of German soldiers, tanks, guns and aircrafts to Soviet losses in the course of typical operations (20-30 days). This information, given in Table 3, was obtained from a set of linear equations applied to the data of 12 offensive operations [13].

Table 2: Number of Soviet casualties inflicted by various German means in the course of typical operations in 1944-45.

German means	soldier	tank	artillery gun	aircraft
Soviet casualties	0.1	50	8	60

The comparison of German and Soviet losses also suggests that within his technical and tactical environment the German soldier was almost twice as efficient as his Russian counterpart in eliminating his enemy from the battlefield[14]. This observation may explain the origin of the 'nationality factor' used by the Warsaw Pact planners when comparing the combat capabilities of Eastern and Western divisions.

The Soviet literature also provided statistical data on the casualties acceptable at the tactical level[15]. It depends on the morale of the troops concerned and varied from 10-20 % (low morale) to 70% (very high morale). There is little doubt, that planners used such data, together with the nationality factor, to modulate their predictions.

In spite of changes in the quality of armament and the emergence of new technologies such as antitank guided weapons, historical analysis still provides a useful starting point for the assessment of the modern battlefield. However, operational norms derived from World War II experience must be adapted on the basis of local wars (Falklands, Lebanon, the Gulf) and the improved performances of classical weapons systems. In our opinion, this can be achieved in connection with the approach based on computer modelling, as discussed below.

COMBAT POTENTIALS AND MODELLING

A powerful alternative to historical data analysis is the method based on combat potentials and the corresponding correlation of forces. It has been described in detail elsewhere[3,4] and therefore, we shall only deal with its main features.

This approach has been developed by the Soviets in the early 1970s, in the form of the Model of Strategic Operations (MSO), when it became obvious that planners needed reliable information on the outcome of large-scale operations. The basic assumption is that different types of weapons can be compared with each other, through their contributions to the outcome of the operation. By convention, a weapon system is taken as a reference and its combat potential its equal to 1. In the present-day version of the Soviet model, it is a T-80 B tank.

Under these conditions, the combat potentials of sides A and B are the linear contributions

$$P_A = \sum_{i=1}^{i=I} X_i C_i \text{ and } P_B = \sum_{j=1}^{j=J} Y_j C_J \qquad (1)$$

and the correlation of forces is defined as the ratio

$$\text{correlation of forces} = P_A / P_B \qquad (2)$$

The quantities X_i and Y_j denote the number of weapons of types i and j (tanks, guns, etc.) and C_i and C_j are the corresponding combat potentials. There are I and J different weapons systems on sides A and B, respectively.

On the basis of information such as:

- the technical and tactical characteristics of the weapons' systems,
- the structure and the plans of the forces of sides A and B,
- the geographical characteristics of the TVD, etc.

The model simulates the development of a given operation, both sides being fully prepared for battle at the beginning. The main indicators for success or failure are the losses sustained by both parties and the movement of the front line (FEBA).

The combat potentials are determined by varying successively the number of weapons of each type by approximately 5%, all otherparameters being kept constant, and by assessing the influence on the outcome of the operation. This technique leads to the typical values given in Table 4, also found elsewhere[3].

Table 3: Combat potentials of various weapons systems obtained by MSO.

Weapons system	T-80 B	M1-A	BMP-3	155 mm gun	FA-15	SU-24	ATGW
Combat potential	1.0	1.1	0.83	0.50	6	4	0.5-0.8

This type of data has been used in the past, but its real meaning has not always been fully understood. Therefore, it is necessary to point out some important features of the model,

(1) Numerically, combat potentials depend on the scale of the action used in the model and they become stable only at Front and strategic level.

(2) The most acceptable measure for operational planning is the combat potential of entire divisions, obtained by a sum over all its weapons (for example 678 for a Russian motorized division, which can again be taken as a reference formation and set equal to 1). At Front level, changes up to 30% are possible, without affecting too much the individual combat potentials. This observation supports the assumption made in the definition of the correlation of forces used in the analysis of historical data.

(3) The numerical values of the combat potentials given in Table 3 reflect the relative contribu- tionsof the different weapons to the outcome of the given operation. A SU-24 aircraft contributes as much as 4 T-80 B tanks, but this does not imply a wide interchangeability of the systems systems.

(4) The study based on MSO relates the correlation of forces P_A/P_B to various battlefield parameters such as loss rates and rates of advance. The latter is illustrated in Fig. 3. This enables planners to calculate the "package" of forces required to achieve an operational goal within acceptable or prescribed limits. It should be noted that the predictions of MSO are less optimistic than the rates of advance which the Warsaw Pact planners had foreseen in the Western TVD (40-60 km per day[9]).

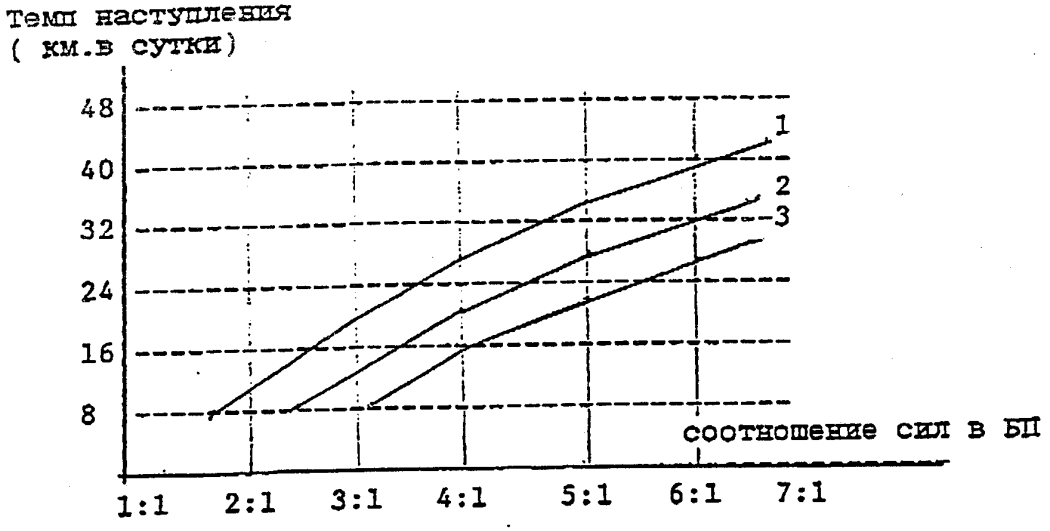

Fig. 3: Rates of advance in a modern European TVD, obtained by MSO, as a function of the correlation of forces between the attacker and the defender. Attacks against hastily prepared (1), partially (2) and well-developed (2) defences.

(5) MSO has also been tested successfully with World War II operations, but the details are still classified. However, it is hoped that examples will be made available in the near future.

REMARKS ON THE USE OF COMBAT POTENTIALS

A set of reliable combat potentials can be used to calculate correlations of forces at TVD level, or within other models. As described earlier[3,8], in the case of the Paris agreement of 1990 on the limitation of armaments in Europe, the comparison of NATO with the Community of Independent States (CIS) leads to a correlation of forces of 105035/70155 or 1.49:1 in favour of NATO (Our calculation is based on the major types of weapons given in Table 4). It is also interesting to note that the correlation of forces based on the individual correlations, as used earlier, leads to 1.44:1.

Table 4: The correlation of forces NATO/CIS for the armaments level of the 1990 agreement

Weapon system	numbers	correlation	combat potentials
Tanks	20000/13300	1.50:1	17157/13300
APCs	30000/20000	1.50:1	27520/16000
artillery	20000/13700	1.46:1	9179/6850
helicopters	2000/1500	1.33:1	5137/3750
aircrafts + air defence	7994/6051	1.32:1	46042/30255
Correlation of forces		1.42:1	105035/70155 1.49:1

The combat potentials obtained by MSO, or by similar models, provide a basis for the correlation of forces used in other models. For example, Huber's model[1], which examines the chances of success of different types of defences against an attack along two main axis. As shown in Table 5, the outcome of the battle depends on the initial correlation of forces, which must be calculated in some way or another. The model also requires information on the local superiority needed to achieve a breakthrough, or to contain the attack. This information is provided either by historical data or by modelling of the tactical level (The KOSMOS simulations quoted by Huber[1]).

Table 5: Minimum correlation of forces attacker/defender required to achieve a successful breakthrough operations against various types of defences. Taken from Huber[1].

Type of defence	static	static + reserve	mobile	mobile + reserve
Minimum correlation	0.5:1	0.85:1	1:1	1.5:1

The comparison of this data with the correlation of forces between NATO and CIS may lead to the wrong conclusion that the West has the minimum potential required to achieve success in a conventional TVD. This conclusion, taken out of its political and economic context, might provide ground for unnecessary discussions. This illustrates the fact that the evaluation of military potentials is only one factor amongst many in a more general assessment of the international situation.

BIBLIOGRAPHY

1. Huber, R.K., In *Military Stability* (Huber, R.K., Editor), Nomis Verlag, Baden-Baden 1990,pp. 165-184.
2. Huber, R.K. and Schindler, O., in *International Stability in a Multipolar World* (Huber,R.K.,Editor), Nomis Verlag, Baden-Baden 1993, pp. 155-179.
3. Tsygichko, V.N., *Voyennyi Vestnik AIP*, March 1988 and June 1989.
4. Tsygichko, V.N. and Stoeckli, H.F., in the Proceedings of the International Symposium on Modelling and Analysis of Stability Problems in Multipolar International Systems (Bundeswehr University Munich, 1995), in the press.
5. Stoeckli, H.F., in *International Stability in a Multipolar World* (Huber, R.K., Editor), Nomis Verlag, Baden-Baden 1993, pp. 207-215.
6. Bogdanov, S.A. and Zarakhov, L.V., *Voyennaya Mysl'*, 8/9 (1992), pp. 42-49.
7. Stoeckli, H.F., *Revue militaire suisse*, 2 (1992), pp. 16-22.
8. Stoeckli, H.F., *Revue militaire suisse*, 10 (1993), pp. 23-29.
9. The Voroshilov Lectures: Materials from the Soviet General Staff Academy (Turbiville, G.H., Editor), National Defence University Press, Washington D.C. 1989.
10. Stoeckli, H.F., *Oesterreichische Militärische Zeitschrift*, 4 (1988), pp. 333-336.
11. Tatarchenko, A.E., *Voyennaya Mysl'*, 5 (1982), pp. 53-59.
12. Krivocheyev, G.F. et al., *Grif Sekretnosti Snyat*, Voyenizdat, Moscow 1993.
13. Stoeckli, H.F., *Revue miltaire suisse*, 4 (1994), pp. 26-29.
14. Stoeckli, H.F., *The Journal of Soviet Military Studies*, 3 (1990), pp. 641-655.
15. Markovski, F.M., *Voyennaya Mysl'*, 11/12 (1991), pp. 51-58.

INSPECTING THE FOUNDATIONS OF OFFENSE-DEFENSE THEORY: CAN THEY BEAR THE WEIGHT?[1]

C. Glaser and C. Kaufmann

INTRODUCTION

Offense-defense theory focuses on the nature of military mission capabilities to explain the causes of war and states' strategies for achieving security and other goals. The key variables are (1) whether offensive missions or defensive missions have the advantage, that is, whether it is "easier" to take territory or to defend it, and (2) whether offense and defense are distinguishable, that is, whether the forces that support offensive missions are different from those that support defensive missions.

The early work on offense-defense theory presents it as an isolated set of arguments, not as part of a broader theory.[2] However, more recent work makes clear that offense-defense theory is better understood as a central element of structural realism.[3] The standard structural-realist analysis is cast in terms of states' power.[4] This is problematic since states should assess their ability to achieve their goals in terms of their military capability, not their power. Combining offense-defense variables with power enables us to construct a theory cast in terms of military capability. Scholars have combined these variables to address key questions of alliance behavior,[5] of military doctrine,[6] arms competition and cooperation,[7] nuclear strategy,[8] conventional arms control,[9] and grand strategy.[10]

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[1] Working draft; please do not quote, cite or circulate without the authors' permission. Prepared for the NATO Symposium on "Military Stability," June 12-14, 1995, Brussels. Initially prepared for presentation at the Annual Meeting of the International Studies Association, Chicago, Illinois, 21-25 February 1995. Presented by C Kaufmann.

[2] Robert Jervis, "Cooperation Under the Security Dilemma," World Politics, Vol. 30, No. 2 (January 1978); George Quester, Offense and Defense in the International System (New York: Wiley, 1977).

[3] Charles L. Glaser, "Realists as Optimists: Cooperation as Self-Help," International Security, Vol. 19, No. 3 (Winter 1994/95), pp. 50-90; Stephen Van Evera, Causes of War, Volume I: The Structure of Power and the Roots of War (forthcoming, Cornell University Press); and Sean Lynn-Jones, diss.

[4] "Power" in this context is best understood as reflecting states' relative resources.

[5] On balancing versus bandwagoning, see Stephen M. Walt, The Origins of Alliances (Ithaca, N.Y.: Cornell University Press, 1987); on the tightness of alliances see Thomas J. Christensen and Jack Snyder, "Chain Gangs and Passed Bucks: Predicting Alliance Patterns in Multipolarity," International Organization, Vol. 44, No. 1 (Spring 1990), pp. 137-168.

[6] Barry R. Posen, The Sources of Military Doctrine (Ithaca, N.Y.: Cornell University Press, 1984).

Critics argue that three major barriers undermine the utility of offense-defense theory. First, they argue that the theory is under- developed. More specifically, critics argue that we lack adequate definitions of offense and defense, and that the offense-defense literature is confused by multiple and inconsistent definitions of the offense-defense balance.[11]

Second, critics argue that, even if it were adequately developed, we would still be unable to operationalize offense-defense theory, which would leave us unable to test the theory or to use it to make predictions. Among the key critical arguments here are that:

(1) offense and defense cannot be distinguished and, therefore, the entire theory becomes useless;[12]

(2) the outcome of conflict is usually so uncertain that states cannot assess the offense-defense balance during peacetime and, therefore, the offense-defense balance cannot explain either the probability of war or states' policies for avoiding war;[13]

(3) the offense-defense balance is not determined by structural constraints, but instead by the ingenuity and determination of individual states, and, therefore, offense-defense theory degenerates into a collection of state-specific explanations.[14]

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7 Charles L. Glaser, "Political Consequences of Military Strategy: Expanding and Refining the Spiral and Deterrence Models," World Politics, Vol. 44, No. 4 (July 1992), pp. 497-538; others.

8 Shai Feldman, Israeli Nuclear Deterrence: A Strategy for the 1980s (New York: Columbia University Press, 1982); Charles L. Glaser, Analyzing Strategic Nuclear Policy (Princeton: Princeton University Press, 1990).

9 Jack Snyder, "Limiting Offensive Conventional Forces: Soviet Proposals and Western Options," International Security, Vol. 12, No. 4 (Spring 1988), pp. 48-77; Steven D. Biddle, "The Determinants of Offensiveness and Defensiveness in Conventional Land Warfare," (Ph.D. dissertation, Harvard, 1992); and Anders Boserup and Robert Neild, The Foundations of Defensive Defence (New York: St. Martins, 1990).

10 Stephen M. Walt, "The Case for Finite Containment: Analyzing U.S. Grand Strategy," International Security, Vol. 14, No. 1 (Summer 189), pp. 5-49.

11 Jack S. Levy, "The Offensive/Defensive Balance of Military Technology: A Theoretical and Historical Analysis," International Studies Quarterly, Vol. 28, No. 2 (June 1984), pp. 220-230.

12 John J. Mearsheimer, Conventional Deterrence (Ithaca, N.Y: Cornell University Press, 1983), pp. 25-27; Mearsheimer, "The False Promise of International Institutions, International Security, Vol. 19, No. 3 (Winter 1994/95), p. 23. others

13 ....

14 Jonathan Shimshoni, "Technology, Military Advantage, and World War I: A Case for Military Entrepreneurship," International Security, Vol. 15, No. 3 (Winter 1990/91), pp. 187-215.

Third, critics argue that, even if it could be operationalized, the utility of offense-defense theory would be greatly reduced by additional problems. The most prominent criticism in this category is that states frequently misperceive the offense-defense balance, which undermines the theory's predictions and its overall utility.

Taken as a whole, these problems lead some critics to conclude that offense-defense theory should be abandoned. They believe that, even if some shortcomings were repaired by additional research, the remaining flaws would continue to cripple the theory.

We disagree with their conclusion, but accept elements of their critique. The critics are on strongest ground in arguing that the theory is under-developed. We therefore devote the first sections of this paper to exploring how offense and the offense-defense balance should be defined and understood. The critics are on far weaker ground in claiming that offense-defense theory cannot be operationalized and would not be useful anyway. We show that their key arguments reflect a flawed understanding of offense-defense theory. At the same time, we admit that some of the points raised by critics require further development of the theory, which leaves the theory less streamlined than some proponents would like.

We conclude the article with our own criticism of some of the predictions that are commonly said to follow from offense-defense theory and correct these flawed deductions. Standard predictions of offense-defense theory are that when offense has the advantage arms races are more intense, and wars are more frequent and less costly than under defense dominance. We argue, however, that extreme offense dominance does not lead to arms races that are more intense, or to more frequent and less costly wars. Rather, we expect these results when the balance between offense and defense is roughly equal.

DEFINING OFFENSE AND DEFENSE

Any theory of the effects of the "offense-defense balance" requires a definition of "offense."[15] Although it may seem that the meaning of "offense" is obvious, in fact it is not trivial. At least three major definitional problems require discussion: First, the term "offense" is used to refer to at least three distinct activities: taking territory, attacking an enemy's forces (counterforce attacks) and attacking an enemy's society (countervalue attacks). Second, offense is used both to refer to activities (using military forces to take territory) and to states' intentions or motivations (aims of territorial aggrandizement). Third, there is no clear standard of offensive success.

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[15] Because we are focusing on constructing offense-defense theory we are not going to include legal or normative concerns in our definition.

TERRITORY, NOT COUNTERFORCE OR COUNTERVALUE

Since the ultimate concern of offense-defense theory in particular and international security studies in general is the security of states, offense and defense should be defined in terms of states' primary international security interests, namely control over territory.[16] Thus, offense is best defined as the attempt by one state to take control by military force of territory which it did not previously control. Defense can then be defined as simply the opposite of offense— the attempt to frustrate offenders' attempts to gain control of additional territory.[17]

Confusion arises because some authors also include a second activity in the definition of offense— inflicting damage on a target state or society; defense then includes preventing attempts to inflict damage.[18] Including these activities may seem at first glance to make sense because states are concerned not only to retain territory but to avoid damage. However, this confuses the goal of the activity. Neither attackers nor defenders are usually interested in inflicting damage for its own sake; rather, both are primarily interested in controlling territory, and may threaten, or actually inflict, damage in pursuit of that goal. Punishment is a means of affecting territorial control, not an end in itself; this is the logic of both compellence and deterrence.

Worse, accepting punishment as offense would make it impossible to define a single offense-defense balance, because punishment capabilities (offense in the second sense) often conflict with the ability to take territory (offense in the first sense). Thus the same change in the world would move the offense-defense balance in opposite directions simultaneously. Indeed, many believe that punishment capabilities generally favor defense in the territorial sense because defenders are usually willing to pay higher costs to retain control of territory than attackers are to take it.[19] This is why nuclear strategists often argue that "offensive" strategic nuclear forces favor defense while strategic "defenses" favor offense.

A third activity sometimes included in definitions of offense is destruction of enemy forces.[20] The difficulty once again is a confusion of ends and means; destruction of enemy forces may be pursued either to take territory or to hold it. Most apparent exceptions turn out to be about territory when examined. In February 1991 the U.S. rejected Saddam Hussein's offer to evacuate Kuwait not in order to destroy weapons for its own sake, but in order to reduce Iraq's ability to threaten other states' territory in the future.

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16 Clausewitz

17 1) We need not specify whether the target territory was previously control by the defender, by a third party, or by no one. 2) Mil. vs other instruments; could expand; don't want to right now.

18 Tarr; Wright

19 Kecskemeti; Jervis

20 Levy, Jervis, Van Evera,

As with punishment, accepting counterforce as offense would make it difficult to define the offense-defense balance, because an increase in counterforce capabilities (offense in the third sense) could either increase or reduce the ability to take territory (offense in the first sense).

MISSIONS, NOT MOTIVATIONS

States often threaten to take territory as a means of defending the territorial status quo. Examples include French and Russian strategies before World War I, Samuel Huntington's proposal for "conventional retaliation" in Central Europe, and Soviet explanations of their strategy for the Central Front throughout most of the Cold War.[21]

The answer depends on our theoretical purpose. Since the goal of offense-defense theory (and structural theories in general) is to help us predict states' behavior by based on what they can do, irrespective of what they want to do, the definition of offense should be based on actions, not motivations.[22] Offense should thus be defined as the use of military force to take territory. Thus the answer to the question is that taking territory, whether for deterrence or for aggrandizement, is offense.

TAKE AND HOLD, NOT ONLY TAKE

Since a central assumption of offense-defense theory is that unattractive military adventures will not be undertaken, the third major component of a definition of offense must be a standard of success. Some authors have defined offense simply as taking territory and left it at that,[23] while others require that the attacker hold the territory gained against any counterattacks.[24] This is necessary, because seizing a piece of ground only to lose it again soon thereafter would not seem worthwhile to most attackers in most circumstances.[25]

This standard raises two difficulties. First, it is apparent that successful offense will usually have to include at least some defense to hold the territory taken (and that successful

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21 Samuel P. Huntington, "Conventional Deterrence and Conventional Retaliation in Europe,"International Security, Vol. 8, No. 3 (Winter 1983-84), pp. 32-56.

22 Some argue that external constraints are less important determinants of behavior than internally-generated goals. E.g., Colin Gray says that "the important thing to know about a weapon is who owns it." FIND THIS QUOTE.

23 Jervis

24 Levy citing Wright citing Fuller; Biddle

25 This is not to say that losing territory, even if retaken later, is likely to attractive to defenders compared with not losing it in the first place. Offense-defense theory, however, is concerned mainly with decisions whether or not to attack.

defense may sometimes require counter-offense to retake territory initially lost). Second, we must specify how long the attacker must hold the territory taken before an offensive is considered to have succeeded.

If successful offense requires defense and defense can require offense, how can they be distinguished? Offense can be distinguished in two ways. First, the requirement for defense as part of an offensive is contingent on the success of the offense in taking territory; there is no need to hold territory that was never taken. Second, the activities are sequential—the attacker takes territory first and then transitions to the defense to hold it.[26] Therefore, even if the two missions require the same forces, the attacker and defender will employ them quite differently.;

Defense can be distinguished by the opposite features,[27] although an additional issue arises which did not for offense. This concerns the scope of the counter-offensive. As long as it is limited to recovering territory that originally belonged to the defender it is part of an overall defense, but if and when the original defender invades territory that initially belonged to the attacker, this is best considered the beginning of a new offensive, not part of the original defense.[28]

Any answer to the question of how long the attacker must hold must be somewhat arbitrary. In keeping with the traditional primarily military focus of offense-defense theory, we prefer to consider an offensive a success if the territorial change is maintained until the end of continuous military efforts to take back the territory, i.e. until the end of the current war. Although alternative time horizons could be considered, the end of the current war has the virtue of being easy to measure.[29]

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26 The difficulty of the holding operation depends on the effectiveness of the initial offensive. The more of the defender's forces which are destroyed by the initial offensive, the weaker any possible counterattack and therefore the easier it is to hold the territory seized. At the extreme where the offensive completely disarms the defender no counterattack is possible, although even in this case the attacker would probably be concerned about possible regeneration of defender capabilities and/or counterattacks by allies of the defender.

27 First, the need for counter-offense is contingent on earlier failure; there is no need to retake territory that was never lost. Second, any counter-offense follows the loss of territory.

28 Soviet counteroffensives 1941-44 vs. invasion of Eastern Europe and Germany 1944-45.

29 One could make a case for a longer time horizon, e.g. until the defender loses interest in retaking the territory, on the grounds that the attacker must spend effort, even in peacetime, to hold the territory as long as revanchist campaign is imaginable. For instance, our definition would count Napoleon's victories over Prussia and Austria as offensive successes, although one could argue that he was never secure in the fruits of these campaigns. The problem with such a longer time horizon, of course, is that it would be extremely difficult to measure, and in some cases might never expire.

DEFINING THE OFFENSE-DEFENSE BALANCE

The offense-defense literature includes many different definitions of the offense-defense balance.[30] Among the most commonly used and important definitions are that offense has the advantage: (1) when "it is easier to destroy the other's army and take its territory than it is to defend one's own"[31]; (2) when the defender has to outspend the attacker to offset an investment in offensive forces[32]; (3) when the resources required to capture territory are less than the value of the territory itself[33]; (4) when there is an incentive to strike first rather than absorb the other's first strike[34]; (5) when a large portion of states' territory is likely to change hands as a result of war;[35] (6) when weapons possess certain characteristics, for example, long range and especially mobility.[36]

A number of problems arise from these multiple definitions. Simply because they are cast in terms of different variables, it is not obvious that the definitions are focusing on the same features. For example, what is the relationship between the cost of various types of forces and the costs (measured in casualties and destroyed equipment) of actually fighting a war? Using such different definitions leads to discourse that is less precise than it should be, which reduces the analytic leverage offered by offense-defense concepts. More important, as we explain in some detail below, the confusion is not limited to appearances. Different definitions do in fact identify different features of the military and/or diplomatic environment. For example, it is not always true that when offense costs less than defense that there are first strike advantages. The multiple definitions currently in use therefore conflate significantly different phenomena. Finally, certain definitions are not fully specified and thereby cannot be effectively applied. For example, what does it mean to say that it is easier to take territory than to hold it? That the forces required for offense are less expensive, that the costs of fighting on the offense are lower, etc.

We begin this section by explaining the need to distinguish two different offense-defense balances, which we will call the "directional" offense-defense balance and the "compound" offense-defense balance. We explain that two separate definitions of the balance

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30 The variety of definitions is reviewed in Levy, "The Offense/Defense Balance of Military Technology," pp. 222-230.

31 Jervis, "Cooperation Under the Security Dilemma," p. 178.

32 Jervis, "Cooperation Under the Security Dilemma," p. 178; see also Quester, Offense and Defense in the International System, for a similar definition, cast in terms of force ratios, not investment; and Robert Gilpin, War and Change in World Politics (Cambridge: Cambridge University Press, 1981), p. 62.

33 Gilpin, War and Change in World Politics, p. 63.

34 Jervis, "Cooperation Under the Security Dilemma," p. 178;

35 Stephen W. Van Evera, "Causes of War," Ph.D. dissertation, University of California, Berkeley, 1984, p. 78.

36 Levy, "The Offense/Defense Balance of Military Technology," pp. 225-227, reviews works that use this definition.

are needed because each helps answer a different set of theoretical and policy questions. We then define each of the balances and show why the definitions we use are appropriate to the questions.

WHY WE NEED TWO OFFENSE-DEFENSE BALANCES

The literature on offense-defense theory has failed to make clear that the theory is actually used to address two different sets of theoretical and policy questions. Loosely stated, the two questions are (1) How effective can defenders' defensive strategies be against attackers' offensive strategies? In other words, can a state secure itself against attack using a defensive military strategy? More broadly, is conquest easy or difficult? (2) How effective can a defenders' defensive strategy be compared to an offensive strategy for the same state? In other words, is a security-seeking state better off with a defensive military strategy or an offensive one? More broadly, can military strategies and force postures be constructed which would ensure security for both states of a dyad (or all states in a system)?

Although the logics of these two types of question are related, they are sufficiently different that they require different definitions of the offense-defense balance—different balances—to answer them. What we will term the "directional" offense-defense balance is most useful for analyzing the first type of question, while what we call the "compound" offense-defense balance is more useful for addressing the second type of question.

As we justify in more thoroughly below, we define the directional balance for a particular attacker within a dyad as the cost ratio between the forces the attacker would need to overcome a given defending force and the cost of that defending force. A dyad thus has two directional balances, one for one state as the attacker, one for the other.[37] We define the compound balance for a dyad as the product of the two directional balances.

THE DIRECTIONAL BALANCE: THE COST (INVESTMENT) RATIO OF OFFENSE TO DEFENSE

To develop a definition of the offense-defense balance, we focus on the role it needs to play. We can best understand this role by placing the offense-defense theory in context, recognizing that it is a central component of a large family of theories that posit that states' policies are heavily influenced by their ability to perform military missions. Structural realism, which focuses on the policies states will pursue to maintain their security, and deterrence theory, which focuses on states' calculations of the expected costs and benefits of attempting to expand, are related members of this family.

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[37] In the symmetric case where neither side has any geographical, technological, or other nonquantitative advantage over the other, the two directional balances will be the same. More on this below.

The role of the offense-defense balance in these theories is to "convert" states' power, specifically their relative resources, into military mission capability. When we analyze whether a state can protect itself against potential adversaries, we need to know not only the relative size (wealth) of the state and its adversaries, but also how effectively these resources can be used to produce offensive and defensive military capabilities. For example, if offensive missions are much more expensive to perform than defensive missions, then states of roughly equal size will have very good prospects for maintaining a high level of security against each other. However, comparing only their resources suggests a quite different and misleading answer—that these states will have to be extremely vigilant simple to ensure their survival.

Consequently, we propose that the offense-defense balance be defined as the ratio of the cost to the attacker of forces necessary for a successful offensive to the cost of the forces the defender has deployed to prevent such an offensive.[38] Put slightly differently, if the defender invests X in military assets, how large an investment Y must the attacker make to acquire the forces necessary for a successful offensive capability; the offense-defense balance is the ratio Y/X. Larger ratios indicate a balance more in favor of defense.[39]

Given this definition, the attacker's power (which is the ratio of the attacker's resources to the defender's resources) divided by the offense-defense balance indicates the attacker's prospects for successful offense. When this quotient is larger than 1, an offensive is likely to succeed; when it less than 1, it is likely to fail.

It is because the combination of power with the offense-defense balance provides a far better estimate of the attacker's prospects than does power alone that we say that the offense-defense balance "converts" power into military capability. The offense-defense balance can sometimes overcome disparities is the resources of states. When defense has a large advantage, even states which are much smaller than their adversaries may still be able to afford effective defense. Conversely, power imbalances can sometimes overwhelm the offense-defense balance. Even if defense has a large advantage, an attacker which is much

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38 We could also define the balance in terms of the cost to the defender of successfully defending against the attacker's forces. As discussed below, these definitions could lead to different balances, because the attacker and defender could place different value on achieving their objectives and, therefore, require different levels of confidence in success and different costs of fighting if war occurs.

39 Although in principle investment is a straightforward concept, in practice it raises some complicated issues. We want to measure the resources that the countries would have to devote to opposing missions. Difficulty arises because countries may not place the same relative value on different resources or because what they pay for resources may not reflect the value they place on them. An obvious example of this difficulty occurs when two countries pay different amounts to field soldiers of comparable quality, as can happen when one country has a draft system and the other has a volunteer army. However, although these systems allow countries to pay different amounts for soldiers, we want to say that adding an equal number of soldiers represents an equal investment, because the two countries have added equal amounts of resources. This problem can be reduced by establishing a common value for a resource, for example, the value of a soldier, and then calculating the ratio of countries' investments in military resources in terms this valuation.

wealthier than the defender might still be able to outspend the defender by a wide enough margin to deploy an effective offensive capability.

THE COMPOUND BALANCE: THE PRODUCT OF DIRECTION BALANCES

Although quite useful, the directional balance is not sufficient to answer the core question posed by the security dilemma—whether security-seeking states should choose a defensive strategy for protecting its territory, or whether it must resort to offense.[40] This in turn helps to determine whether states can diagnose each others' intentions from their force postures, which in turn affects the likelihood of growing insecurity and hostily among security-seeking states, arms races, and war. The compound balance—which we define as the product of the directional balances—is more useful for analyzing states' preferences for offense or defense, and can also indicate the magnitude of such preferences.

A state's preference for offense or defense depends on the relative cost of defending its territory with a defensive strategy compared to the cost of doing so with an offensive strategy. Directional offense-defense balances, however, can supply only one of these answers at a time. Within a dyad, the directional balance with the state as defender tells us how much the state must invest to succeed on the defense, but nothing about the cost of an offensive approach. The other directional balance—with the state as the attacker—tells us the cost of an offensive strategy but not that of a defensive. The state's strategy preference is determined by the product of the two directional balances, i.e. by the compound balance. If the product is greater than one, the state can defend at lower cost than it can attack; if less than one, it can attack at lower cost than it can defend. The larger the value of the compound balance, the stronger the preference for defense; the smaller, the stronger the preference for offense.[41]

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40 This claim is based entirely on the military implications ofthis choice; neither of the balances is sufficient if in addition the defender factors in the signalling that accompanies this decision.

41 Our discussion implicitly assumes that the if one state adopts an offensive strategy that its adversary will adopt a defensive strategy. If this is not so--if one side's offense might meet not a defensive strategy but another offensive one--then the offense-defense balance may tell us little about likely outcomes. In general, we should expect that offensive strategies will do better against an opposing offense (which is not optimized for defense) than against an opposing defense (which, by definition, is), but we have no way of estimating how much better.

Our assumption is reasonable whenever the compound balance exceeds 1 and the adversary is a security seeker. When the compound balance is less than 1, our assumption is not reasonable since both sides could choose offense on efficiency grounds. This exception, however poses no problem for the theory since it probably should not change the first state's best choice.

The most problematic case is when the adversary could choose offense for reasons that do not depend on either the compound balance or the first state's strategy choice (e.g., because of revisionist territorial goals). In this case the security-seeking state may be able to do better on offense than the directional balance would suggest, and so might be better off choosing offense even if the compound balance is > 1 (especially if it is not much > 1).

To see this, consider the following examples. First, consider a dyad for which the directional offense-defense balance is 3:1 in each direction (i.e., it is a symmetric case.) Assume that the attacker spends X on offense. To have an adequate defense, the defender needs to spend only X/3. However, if the defender chooses to fight on the offense, then the 3:1 ratio works against it; the defender must spend 3X to succeed on the offensive. The compound balance is 3*3 = 9, and this is the strength of the state's preference for defense; successful offense would cost 9 times as much as successful defense.

Second, consider an asymmetric case, in which different access to technology, different geography, etc., create directional balances which are unequal. In such cases, finding that directional balance with a state as defender favors, say, offense is insufficient to determine that the state's best security strategy is offense. We must also know the value of the directional balance in the other direction (i.e., with the state on offense) and the product of the two directional balances, or in other words the compound balance. For instance, suppose that the directional balance with the state on defense is 1:1.5 (favoring offense) and the one with it on offense is 6:1 (favoring defense). If the opponent spends X, an adequate defense will cost 3X/2, while an adequate offense will cost 6X. The compound balance is 2/3 * 6 = 4. Since this value is greater than 1, the state should prefer defense.

Of course, since both directional balances are unfavorable for this state it cannot be secure unless it outspends the opponent, and if the state does not have sufficient wealth it may not be able to ensure its security. However, no matter how adequate or inadequate the state's resources, it will always be better off choosing defense, since offensive strategies would require 4 times as much investment to reach the same level of capability.

This discussion makes clear that the common supposition that the directional offense-defense balance determines whether states should prefer offense or defense is a misunderstanding. In fact we can determine states' strategy preferences from the directional balances alone only in the special case of symmetry, when both directional balances are the same.

A second, related misunderstanding is that the directional balance indicates the strength of states' strategy preferences. This is not true even in the special case of symmetry, since the strength of states' preference is given not by the value of a directional balance but by the product of both directional balances. Thus, focusing on directional balance rather than on the compound balance can lead analysts to underestimate the intensity of states' strategy preferences. For instance, whenever both directional balances favor defense, the defender's preference for defense will be stronger than focusing on either directional balance would

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This last case poses a significant problem for the theory, since it means that in some cases we may not be able to say what is the best military strategy for a security seeking state or whether it can attain an adequate security posture. We do not have a solution for this, and we are unaware of any discussions of the security dilemma and the defender's decision between offense and defense that have addressed this issue.

suggest. In other words, focusing on the directional balance would lead us to systematically think that state's strategy preferences are more fragile than they actually are.

Focusing on the compound balance provides important insights. First, whether or not the directional balances in a dyad are symmetric, both countries always face the same compound balance. Therefore, if both are pure security seekers, they will always have the same preference for offense versus defense. At first glance this may seem surprising, since we might expect that asymmetric cases would produce divergent preferences for offense and defense. However, there is an intuitive explanation. Whenever we say that a certain side can do better on defense than on offense (because the compound balance is greater than 1), we must also be saying that the other side would do worse on offense (against the first side's defense) than on defense (against the first side's offense). So, both will prefer defense to offense.

Second, whenever the compound balance for a dyad is greater than 1 there must exist some combination of force postures which will allow both states to achieve security with a defensive military strategy as well as providing an equal margin of security for each—i.e., the margin by which each side's deployed forces exceed their requirement for defense against attack by the other will be the same.[42]

In a symmetric case this is easy to see. If both directional balances are 3:1 and the sides deploy equal forces, each will have 3 times its defensive requirement. In asymmetric cases equal security is still attainable, but it requires unequal spending; the disadvantaged country would have to outspend the advantaged country by the square root of the ratio of the directional balances.[43]

For instance, if the directional balances are 1:1 and 4:1 respectively, resulting in a compound balance of 4, the disadvantaged side would have to spend twice as much as the advantaged. The result would be that each side would have twice the forces it needs for defense (and half those required for attack).[44] Thus in any asymmetric case a there will exist a certain unequal spending ratio which can create a mutual security situation identical to some symmetric case.

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42 Similarly, with the compound balance less than 1 there will also exist force postures which provide equal security, or rather equal insecurity, since each side will be short of their defensive requirment by the same margin.

43 In general, for directional balances X_A and X_B ($X_A > X_B$), security will be equal if the disadvantaged state spends $(X_A/X_B)^{(1/2)}$ times what the advantaged state spends. Both states will be as secure as in the symmetric case with the same compound balance [$X_A * X_B$; the directional balances in that symmetric case would be $(X_A * X_B)^{(1/2)}$].

44 The disadvantaged side needs a 1:1 ratio to defend, but has 2:1; it needs 4:1 to attack, but has only 2:1. The advantaged side needs 1:4 to defend, but has 1:2; it needs 1:1 to attack, but has only 1:2.

The practical implications of the possibility of unequal spending that provides equal security hinge on two considerations: does the disadvantaged country have the ability to outspend its adversary at the necessary rate; and, possibly related, does the advantaged country see sufficient value in increasing its adversary's security to limit its own military capability? Unequal spending resulting in equal security is most likely when the disadvantaged country is the more powerful/wealthy.

KEY COMPONENTS OF THE OFFENSE-DEFENSE BALANCE

We now focus more closely on the directional offense-defense balance. In the following discussion, we use the term "offense-defense balance" to refer to the directional offense-defense balance. While the above definition of the offense-defense balance effectively captures the broad meaning of the directional offense-defense concept, a viable definition of the balance also requires additional components which may not be readily apparent. The most important of these are (1) attackers' territorial objectives and (2) the value that they place on achieving their objectives. This section explains the functions of these components in the definition and why a meaningful offense-defense balance cannot be defined without them.

Objective dependence. The offense-defense balance depends on the attacker's military objective, that is, on how much territory the attacker is trying to take. More ambitious offensive missions, that is, those that are designed to take more territory, are usually (always?) "harder" than less ambitious ones. Facing a given defensive force, the offensive force required for a more ambitious mission will have to be larger and/or more technologically advanced than the offensive force required to perform the less ambitious mission. Consequently, the cost of offense to defense increases with the ambition of the offensive mission, which shifts the offense-defense balance toward defense advantage. The basic point is that when states have more than one territorial goal, they may face different offense-defense balances and this can influence their behavior.

Two important examples illustrate the mission dependence of the offense-defense balance. The first compares the conventional forces required for gaining limited amounts of territory and larger/unlimited amounts of territory. Limited aims are easier to achieve. An attacker that achieves strategic surprise can often avoid the bulk of the defender's forces, take a limited amount of territory, and shift to the defensive.[45] Defeating this limited aims strategy would require the defender to keep its forces at a high level of readiness, which increases their cost, and shifts the offense-defense balance toward offense advantage. In contrast, achieving unlimited aims require the attacker to mobilize larger forces, which makes strategic surprise harder, and leaves the attacker little option but to engage and defeat the bulk of the defender's army. As a result, forces that are inadequate for defeating a limited aims strategy could defeat

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[45] On limited aims strategies see Mearsheimer, Conventional Deterrence, pp. 53-56.

more ambitious strategies. Therefore, compared to a limited aims strategy, the offense-defense balance for the more ambitious strategies is more favorable to the defense.[46]

The second example compares the nuclear forces required for successfully challenging the defender's vital interests and its lesser interests. The attacker may not need to outspend the defender when challenging lesser interests. Threatening limited nuclear attacks with countervalue forces may be sufficient, even if the defender possesses nuclear retaliatory capabilities sufficient to destroy the attacker's country. Success will depend on the attacker's ability to convince the defender that it cares more than the defender about the territory in question and, therefore, is willing to run greater risks to prevail. Consequently, the attacker may be able to succeed if both countries build assured destruction capabilities, with a cost ratio of attacker to defender of approximately 1.

In contrast, the attacker would require much more capable and expensive nuclear force to succeed in getting the defender to surrender control of its country. The attacker is extremely unlikely to succeed via greater resolve, since it is the country defending its homeland that is likely to have greater resolve. Consequently, the attacker requires forces that can greatly reduce the costs it would suffer in a nuclear war, thereby making the risk of war unequal for the two countries. Achieving this effective damage-limitation capability would cost the attacker far more than it would cost the defender to preserve its assured destruction capability. Thus, the cost ratio of offense to defense would be very large, reflecting the tremendous advantage of defense in this mission.

Value dependence. It follows from our definition that the offense-defense balance depends on the value that the attacker places on achieving a given goal. The offense-defense balance shifts toward defense as the value the attacker places on expansion decreases.

The attacker's assessment of whether an offensive is successful depends on the costs it is willing to incur, which depends in turn on the value it places on expansion. A country that places a lower value on expansion will require a strategy and forces than can achieve its goal at a lower cost of fighting, which raises the attacker's force requirements. Consequently, the cost to the attacker of forces for a successful offensive increases, which shifts the offense-defense balance toward defense. For example, if an attacker fighting on a modern battlefield wants to win a conventional war at relatively low cost (of fighting), it must be able to win quickly, which means it must be able to launch a successful blitzkrieg.[47] This in turn requires larger peacetime forces than winning a war of attrition;[48] the result is a shift in the offense-defense balance toward defense.

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46 Biddle, "The Determinants of Offensiveness and Defensiveness in Conventional Land Warfare," develops an extensive model that provides support for this conclusion; conclusions are summarized on p. 341.

47 Mearsheimer, Conventional Deterrence.

48 The size of forces required to fight throughout the war may/will(?) actually be larger for an attrition war, but the initial peacetime force would be smaller.

For similar reasons, an attacker that places a lower value on expansion will, all else being equal, require forces that promise a higher probability of achieving a successful offensive. Because the value of expansion is lower, a higher probability of success is required to make the expected value of war exceed the costs of fighting. The attacker's requirement for higher confidence in the success of its offensive increases its force requirements and the cost of these forces, which shifts the offense-defense balance toward defense.

In short, to actually calculate the offense-defense balance we need to specify not only the attacker's goal, but also the value the attacker places on achieving this goal, which enables us to estimate the cost of fighting and probability of success that the attacker requires for its offensive to be successful.[49] Thus a more precise interpretation of the quotient described above is that a quotient greater than 1 means that, given a potential attacker's values, the costs of fighting, and the probability of success, he prefers to attack, while if it is less than 1 he does not.[50]

Recognizing the role that the value of territory plays in the offense-defense balance sheds light on some of the alternative definitions of the balance. Whereas our cost-ratio definition initially appears to have little in common with one that defines offense advantage by comparing the resources required to take territory to the value of territory, we now see greater similarity in the two definitions. In addition, this perspective helps us to be more precise in distinguishing the causes of offense advantage from the consequences of offense advantage. It is commonly stated that a result of offense advantage is that the costs of taking territory are low. It is more accurate to say that when the cost of taking territory is low, offense will have the advantage.[51]

Dyad and direction dependence. A consequence of the importance of including states' territorial objectives and values for territory is that the offense-defense balance depends on the specific dyad of states involved, and even on the direction within a dyad. For instance, if one state of a dyad demands a higher confidence level for a potential offensive than does the

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[49] The need to specify a probability of success raises the possibility that the balance may not be well defined, even when we consider only two states. The attacker may require a confidence level for defeating the defender's forces that is incompatible with the defender's requirement for defeating the attacker's forces. They are compatible only when both the defender and attacker require the forces that provide confidence of succeeding 50% of the time. In all other cases, the balance is not uniquely defined.

[50] Assuming that the states invest equal resources.

[51] Because the offense-defense balance varies with objectives, it is still more accurate to recast this claim in terms of specific objectives: when the costs of achieving a specific territorial objective is low, the offense has the advantage with respect to that objective. As we discuss in the final section, the costs of the wars that actually occur will reflect states' understandings of the costs of pursuing alternative objectives.

other, the ratio of forces it would require to meet its requirements for offense would be higher than the other state's.[52]

TAKING THE STATE BACK OUT

Recognizing that we cannot define the offense-defense balance without information about specific attackers' territorial objectives and the value they place on those objectives matters raises an important challenge to offense-defense theory. This raises the question of whether it is meaningful to discuss a system-wide offense-defense balance and, closely related, whether offense-defense theory can be pushed back toward a more purely structural theory. If impossible, the theory loses some of its explanatory power, leaving us able to address only the behavior of specific dyads, and then only when we know the value those states place on expansion. In fact, however, the situation is not so bleak. First, even without information about states' values we can often make predictions particular dyads, or even international systems, by comparing them to other dyads or systems whose behavior is known. Second, we can "take the state back out" by making some reasonable assumptions about what most states are like most of the time.

Even if the value that states place on expansion is unknown, offense-defense theory can tell us a good deal about the impact of changes in the factors that influence the offense-defense balance. We can determine the direction of the change in the offense-defense balance without knowing the value states place on expansion; closely related, the offense-defense balance will shift in the same direction for all states. For example, changes in technology that make offensive military operations more costly will shift the offense-defense balance toward defense for all states. Thus, we can determine the direction of change for the entire system, without knowing the value that individual states place on expansion. This type of insight can be quite useful when we know how a dyad of interest, or the system as a whole, behaved before the change; in these cases, we can predict how behavior will compare to this baseline.

Second, we can make assumptions about what most states are like most of the time, and estimate dyadic balances as well as the system-wide balance based on these.[53] This approach is more valuable the more extreme the imbalance between offense and defense, because this makes results less sensitive to how or how far actual states' values vary from our assumptions. For instance, if our estimate of the offense-defense balance given our best estimate of state's values is that it favors defense, we can do sensitivity analysis by making conservative assumptions about values, that is, by assuming that states place greater value on expansion than we think most states actually do, thus skewing our estimate of the system-wide

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52 Dyad and direction dependence can result from a variety of other factors. Nearly all of the factors listed below which can affect the offense-defense, such as technology, geography, etc., can affect states unequally.

53 All structural theories have to make this type of assumption, so this should not be seen counting against this approach. Even Waltz's highly parsimonious structural realism ...

balance toward offense. If under these assumptions the balance still favors defense, then we would expect most systems, even those containing unusually aggressive states, to exhibit the behavior of a highly defensive world.[54]

A common assumption is that attackers will rarely be willing to accept very high costs to achieve even ambitious expansionary objectives. Although operationalizing "very high" requires making subjective and contentious choices, standards that are frequently used in analyzing security policy provide reasonable guidelines.

In the realm of modern conventional war, a typical standard is that while virtually all states will judge the costs of fighting an attrition war to be too high, determined expansionists might be willing to accept the costs of a successful blitzkrieg.[55] Consequently, for this case, imposing the condition that the successful offensive be possible at acceptable costs translates into requiring that the attacker be able to perform a successful blitzkrieg.[56]

In the nuclear realm, we focus on the costs of damage inflicted against the attacker's society. The Cold War generated a spectrum of beliefs about the costs a country would be willing to accept in a nuclear war. At one end of the spectrum, some believe that the threat posed by a single nuclear weapon is sufficient to deter even determined aggressors. Most analysts employ a standard closer to the other end of the spectrum, assuming that an assured destruction capability is required to deter determined aggressors. Most would consider this a conservative standard, i.e., that no leader would consider this level of damage acceptable.[57] Thus, successful offensive capability at acceptable cost translates into the ability to eliminate the defender's assured destruction capability, but not necessarily to destroy its entire force. Given this standard, the offense-defense balance compares the cost of eliminating the defender's assured destruction capability to the cost of the defender's forces. If we chose a

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54 Conversely, if we think that the offense-defense balance for states with medial values for expansion is close to even, then we cannot estimate system behavior without information about states' values.

55 Mearsheimer, Conventional Deterrence, applies this standard to large-scale offensive campaigns which aim to take a large part or all of the defender's territory; willingness to accept costs for limited gains would presumably be lower.

56 We should note that during the Cold War debate over the conventional balance in Europe there was not a complete consensus on this criterion. For example, see Huntington, "Conventional Deterrence and Conventional Retaliation in Europe"; and Eliot A. Cohen, "Toward Better Net Assessment: Rethinking the European Conventional Balance," International Security, Vol. 13, No. 1 (Summer 1988), pp. 50-89.

57 Consensus was not complete; at the extreme end of the spectrum, during the Cold War some analysts argued that even highly credible threats to employ assured destruction capabilities might not pose sufficient costs to deter Soviet leaders. cites to good surveys; arguments at the high cost extreme included official US doctrine, which by the late 1970s held that the US needed to be able to destroy Soviet forces and leadership, as well as Soviet society; and Colin Gray's argument that threatening to destroy the Soviet Union was insufficient because Soviet leaders might be willing to trade their country for control of Western Europe.

lower level of damage as our standard, the attacker's forces would have to be more effective, thereby shifting the offense-defense balance further toward defense advantage.[58]

In short, while recognizing the important role played by states' values, we conclude that offense-defense theory remains quite useful. Even without making assumptions about the value states place on expansion, offense-defense theory can be used to assess how changes in the factors that influence the offense-defense balance will influence dyadic and system-wide behavior. Moreover, employing best-guess assumptions can enable us to calculate the offense-defense balance, although our confidence in the result depends in our confidence in the assumption about states. Finally, employing conservative assumptions about states' values can help us bound the offense-defense balance, although this approach is most useful if we find that despite these assumptions the balance still favors defense.[59]

KEY SUPPORTING CONCEPTS

In addition to key dimensions/components discussed above, we need to address two conceptual issues that influence how we assess the offense-defense balance.

Peacetime. The offense-defense balance should be calculated in terms of the countries' peacetime force requirements. This is because the questions in which we are primarily interested focus on judgements made during peacetime about the adequacy of forces deployed in peacetime. Consider, for example, these questions: how secure can my state be? and, how intensely do I need to arms race?

An additional reason for focusing on peacetime investments is to accurately capture the relationship between investments made during peacetime and those that will be made during the war. As we discuss in a following section, several variables that affect the offense-defense balance—e.g., cumulativity of resources, balancing vs bandwagoning, and nationalism—work by influencing increasing or reducing resources that a state can mobilize once a war starts. Recognizing the implications of these factors for wartime capabilities, an attacker (or defender) that benefits more from these factors will need to spend less during peacetime to meet its military requirements. When these factors favor defenders, the offense-defense balance shifts toward defense, and vice versa. This is how the definition should work: wartime factors that favor defense should lead to greater security and less arms racing during

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58 This paragraph glosses over the issues of the credibility of escalation to nuclear weapons in response to conventional attack; etc, etc.

59 Or if we made the optimistic assumption that states' values for expansion are very low but still found that the balance favored offense.

peacetime and this shift is captured in the shift in the offense-defense balance toward defense.[60]

Optimality. The offense-defense balance should be assessed assuming optimality—that is, within reasonable limits of analysis, both countries make the best possible decisions for attack or defense, taking into account their own and their opponents' options for strategy and force posture. In other words, the offense-defense balance compares the best offense that one state can buy to the best defense that its adversary can buy.

Offense-defense theory assumes optimality because it is a theory of rational state behavior. Closely related, offense-defense theory is primarily a structural theory, which attempts to predict state behavior by focusing on the constraints and opportunities presented by the international environment. From this perspective, the offense-defense balance is best understood as a constraint. For a given offensive objective, attackers must design strategies and force postures in light of the limits imposed by the offense-defense balance. To assess the offense-defense balance, we examine the output of this process, comparing the cost of the forces required to perform the military missions specified by the attacker's and defender's strategies.

If we did not assume optimal analysis, we would be unable to determine the constraints that states face. Without assuming optimality we would be unable to answer the question how secure states can be.

Of course, state behavior is not always optimal. But defining the balance under optimality allows us to determine how much of state behavior reflects true constraints imposed by the offense-defense balance and how much results from flawed policies.

Understanding the offense-defense balance as a constraint within which states design strategies makes clear that we should measure the offense-defense balance by comparing offensive and defensive missions, not specific weapons and technologies in isolation. The point deserves highlighting because the latter position is a common source of confusion.[61] As we discuss below, the offense-defense balance is influenced by technology, as well as geography and other factors. However, we cannot assess the offense-defense balance by focusing directly on technology in isolation. Instead, we must compare the cost of military mission capabilities required for prosecuting the best available offensive and defensive

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[60] Including these anticipated wartime investments in our calculation of the offense-defense balance would shift the balance in exactly the wrong direction, since this would imply that defense must spend more to offset offense, shifting the offense-defense balance toward offense

[61] For example, Mearsheimer, Conventional Deterrence, pp. 25 and 27 argues that offense-defense theory "focuses on the types of weapons possessed by each side" and he concludes that "it is too simplistic to categorize weapons as either offensive or defensive in nature. We must concern ourselves not simply with weapons--and this distinction is crucial--but with their use and their probable effects on the course of the war." We agree totally--Mearsheimer is simply recreating offense-defense theory to replace his strawman.

strategies. Saying that a weapon system favors offense or defense should therefore be understood as a kind of shorthand. The more complete statement would make explicit that the weapon system influences the military strategy that states' prefer and/or the cost of performing the required missions and, therefore, shifts the offense-defense balance.

FACTORS THAT INFLUENCE THE OFFENSE-DEFENSE BALANCE

Several factors are commonly cited as influencing the offense-defense balance, of which the most important are technology, geography, force size, cumulativity of resources, the nature of political and social organization, and the nature of international alliance behavior, and first strike advantages.

Whether to include certain of these factors, especially the nature of international diplomatic behavior and the political and social order of states, in a theory of the offense-defense balance is controversial, as some critics worry that including them risks expanding the offense-defense concept to the point that it becomes meaningless. We explain why the more inclusive definition is appropriate.

TECHNOLOGY

The most frequently cited factor influencing the offense-defense balance is technology. However, discussions of the effects of technology on the balance have tended to oversimplify in several ways: First, analysts have tended to focus on specifically military technologies, neglecting other equally important technology areas. Second, analysts have not always clarified why certain technology areas have the effects that they do. Finally, interactions between different technology areas have been underexamined.

Six major areas of technology are relevant: mobility, firepower, protection, logistics, communication, and detection. Analysts usually argue that improvements in mobility favor the offense, while improvements in firepower favor defense. This is true to some extent, although the effects of improvements in both areas depend in part on whether the specific innovation is usable only or primarily by forces operating within friendly-controlled territory (in which case it will favor defense), or whether it is equally usable by forces which are advancing to into enemy-controlled territory (in which case its impact will favor the offense). The offense-defense impact of advances in the other four areas also depend entirely on the how well they can be used by advancing forces versus by non-advancing ones.[62]

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62 Actually it is not accurate to say that innovations which are equally useful to advancing and non-advancing forces favor offense in an absolute sense; that would be true only if the innovation was actuallymore usable by advancing forces, an extremely rare condition since almost all tasks are easier to carry out while stationary than

Mobility favors offense for two reasons. First, only offense inherently requires mobility, in order to advance into territory controlled by the defender; a force which cannot move cannot attack. At best, mobility may enable attackers to avoid the defender's main positions altogether, proceeding directly to their flank or rear. Defenders, by contrast, have no inherent need for mobility— if they can hold their initial positions they need not move at all. Defense requires mobility only to the extent that offense is successful; if the attacker can take or bypass the defender's initial positions, the defender will need mobility to redeploy force to new positions and/or for counterattacks.[63]

Mobility also multiplies the attacker's advantage of the initiative. There is always a time lag between the initiation of an offensive action by the attacker and the beginning of effective response by the defender because of the time needed to 1) detect the offensive action, 2) assess the threat that it poses, 3) decide on a response, and 4) disseminate instructions to units to begin implementing the response. Increased mobility means that the attacker can accomplish more with an initiative lag of any given duration. Nearly all the major innovations in mobility—chariots, horse cavalry, tanks, motor trucks, and aircraft—are generally considered to have favored the offense, while major counter-mobility innovations—moats, barbed wire, tank traps, land mines—have favored defense.

Firepower favors the defense because the attackers are more vulnerable to defenders to fire. Since attackers must move, often in plain sight of defenders, they are usually easy to detect and to hit, while defenders, who may be well dug-in and camouflaged, are much harder to detect and to hit. The most famous examples are the effects of machine guns on the battles of World War I, and of infantry anti-tank weapons on mechanized warfare during World War II and since then.[64]

The effects on the balance of technological innovations in the other four areas, and to a certain extent in mobility and firepower, depends on how they interact with force behavior;

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while moving. It would be more accurate to say that technologies which are equally, or nearly equally, usable by advancing forces favor offense compared with technologies which are only usable by non-advancing forces.

A closely related, although not identical, distinction is the effect of a technology on moving compared with non-moving forces. However, the impact of both distinctions on the feasibility of offensive and defensive missions, however, are so similar that we often characterized the offense-defense implications of a given technology based on either distinction.

63 This is just another way of saying that the more the offense-defense balance favors the offense, the more both sides will need offensive capabilities.

64 In addition, the need to achieve local force superiority means that attackers must usually concentrate their forces while defenders are more dispersed, with the result that attackers are also more vulnerable than defenders to area effect weapons such as artillery and tactical nuclear weapons. Another reason why tactical nuclear weapons and the most powerful conventional munitions favor defense is that they destroy transportation infrastructure, thus reducing mobility.

It should be noted that the reasons why strategic nuclear weapons favor defense are unrelated to these, being based on equal (and total) vulnerability of societies, not unequal vulnerability of forces.

if their full benefit can be realized only by stationary/non-advancing forces or only against moving/advancing ones, they will favor defense, while if their benefits are equally available to both advancing and non-advancing forces, they will favor offense (at least compared with technologies of unequal usefulness). Railroads, which can transport troops and supplies only with friendly-controlled territory, favor defense compared with motor trucks, which can easily participate in an advance. The main reason why early tanks strengthened the offense is that they provided troops with protection which, unlike trenches and bomb shelters, they could take with them as they advanced. Military communications based on land-line telephones favor defense compared with systems based on portable radios. Early radar, which could detect incoming enemy aircraft but not stationary ground targets, favored defense compared with modern downward looking systems such as JSTARS, which can detect individual vehicles on the ground even in dug-in defensive positions.

GEOGRAPHY

SIZE

The offense-defense balance can depend on the size of the forces deployed. At least two examples of this phenomenon are readily available. First, many analysts argue that the prospects for success in conventional offensives depend not only on force to force ratios but also on force to space ratios, i.e. the size of forces in relation to the length of the front. The basic reason is that the defender's ability to compel the attacker to make expensive frontal assaults in order to break through depends on being able to man all viable axes of advance thickly enough that the attacker cannot outflank the defender's main positions by advancing through an empty sector or by quickly overwhelming a weakly held area. Thus, the offense-defense balance generally shifts in favor of the defense as force size increases.[65]

Second, nuclear offense, which is usually evaluated in terms of the ability to reduce an opponent's retaliatory capability below a specified "assured destruction" level, becomes more difficult as force size increases. The larger force sizes, the larger the force ratio an attacker requires to have a chance of success. Thus, nuclear offense-defense balances shift in favor of the defense as force size increases.

NATURE OF INTERNATIONAL ALLIANCE BEHAVIOR

Two aspects of alliance behavior affect the offense-defense balance: (1) whether states balance or bandwagon; and, (2) the "tightness" of alliances. Balancing behavior—states

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65 Liddell Hart; Mearsheimer; Biddle; Steve Biddle points out that at extremely low force-to-space ratios, lower densities strengthen defense, down to the point at which offense is impossible when there are no forces at all.

joining together to oppose stronger or more threatening states[66]—shifts the offense-defense balance toward defense. A defender needs to invest less in defense because it knows that, if it is attacked, other states will come its aid. Conversely, prospective attackers must invest more, because they know that their targets are likely to receive aid from other states. Consequently, balancing increases the ratio of investment required by the attacker to investment by the defender, reflecting a shift toward defense advantage.

Bandwagoning behavior—states joining together to conquer weaker states or coalitions—has the opposite effect.[67] In a bandwagoning world, as a country invests in military assets, it attracts other countries to its side; bandwagoning acts like a force multiplier. Thus, when states bandwagon, an attacker needs to invest less in offense, reflecting a shift in the offense-defense balance toward offense.[68]

If a defender is uncertain about whether others will balance or bandwagon, then including alliance behavior has an indeterminate effect on the offense-defense balance. Facing this uncertainty, a risk-averse defender should often conclude that playing it safe requires assuming that states will bandwagon against it instead of hoping that allies will come to its aid, which would increase its costs.[69] However, a risk-averse attacker will assume the opposite, i.e., that states will balance, which would increase its costs. The net effect could be that including alliance behavior leaves the offense-defense balance unchanged.

When a defender expects others to balance, the effect of alliance behavior on the offense-defense balance depends on the effectiveness of balancing behavior (tightness of alliances). If states are inclined to pass-the-buck (alliances are loose), that is, let defenders bear the costs of opposing the attacker, then considering alliance behavior is likely to have little effect on the offense-defense balance. On the other had, if alliances are tight, then the shift in the offense-defense balance toward defense is much greater.

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66 Kenneth N. Waltz, Theory of International Politics (Reading, Mass.: Addison-Wesley, 1979); Stephen M. Walt, The Origins of Alliances (Ithaca: Cornell University Press, 1987).

67 On when/why states bandwagon see Randall L. Schweller, "Bandwagoning for Profit: Bringing the Revisionist State Back In," International Security, Vol. 19, No. 1 (Summer 1994), pp. 72-107.

68 This conclusion may overstate the effect of bandwagoning, since all states that recognize this multiplier effect will be inclined to invest more in the hope of attracting allies. If so, bandwagoning would not reduce the investment required by attackers and, therefore, would not shift the balance toward offense.

However, a more refined argument does suggest that bandwagoning favors the offense. If states are attracted to the state that spends more on offense, then bandwagoning behavior favors offense. Bandwagoning should work this way, at least when greedy states bandwagon to share in the spoils of successful attack, and when security-seeking states bandwagon because offensive strategies are the best route to security.

69 This hedging policy could be self-defeating, since by investing extra the defender could provoke other states into balancing against it. Hedging will not have this effective, however, if offense and defense are distinguishable and the defender buys extra defense.

The tightness of alliances, in turn, depends on several factors, including some of the technological and geographical factors which affect the offense-defense balance itself.[70] Alliances will be tighter when the balance favors the offense; this tightness in turns shifts the overall balance toward defense. Due to these countervailing influences, we would not expect that tighter alliances are correlated with a more defensive overall offense-defense balance.

CUMULATIVITY OF RESOURCES

Cumulativity can be defined as the net military resource shift in favor of a state which captures territory from another state. We should distinguish two categories of cumulativity, 1) intrawar and 2) postwar, based on the distinction between resource changes which can affect the outcome of the same war versus those which cannot. These two types affect the offense-defense balance in different ways. Intrawar cumulativity shifts the balance directly by reducing attackers' required pre-war investment ratio, while postwar cumulativity shifts the balance indirectly by increasing the value which states place on territory.

Intrawar cumulativity is the net military resource gain to attackers which can be utilized in time to affect the outcome of the same war. It shifts the balance in favor of offense by enabling attackers pay part of the cost of achieving expansionist objectives with resources from the conquered territory allows itself, thus reducing the requirement for military investment before the war.[71]

Cumulative resources include the resource loss to the dispossessed defender plus the resources extracted by the attacker, less the cost to the attacker of extracting them.[72] The resource loss to the defender is normally the whole productive capacity of the territory.[73]

The resources gained by the attacker would include natural resources as well as whatever productive effort can be obtained from the occupied population, less the cost of extracting the resources, including the costs of controlling the population and of repairing sabotage done either by the defender's forces before retreating or by popular resisters.[74] If

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70 Christensen and Snyder, "Chain Gangs and Passed Bucks."

71 Hitler in 1939 and the Japanese in 1941 both realized that their domestic resources were insufficient to carry out their planned conquest, but expected to "bootstrap" their expansions with captured resources.

72 The military costs of initially conquering the territory are<u>not</u> included in the measure of cumulativity, because the costs of conquering <u>all</u> of the attackers' territorial objectives are already included in the definition of the offense defense balance. To count them again here would mean double-counting some of the attacker's costs.

73 Unless the defender can remove a significant fraction of the territory's industry (as did the Russians in World War II) and/or the population before it is overrun.

74 Captured resources need not be military in nature if they substitute for domestic resources which the attacker can then shift to military production. German strategic plans counted on grain from Eastern Europe to release German workers for war industries.

resistance is fierce the sum of the second and third terms may be negative, but territory almost always has some cumulative value because of the loss to defenders.

Intrawar cumulativity has a larger effect on the balance the earlier in the war that territory can be conquered—because the attacker then has more time to extract and convert the resources—and the more quickly that territorial gains can yield military resources. Thus, cumulativity can be increased by large first strike advantages, and is affected by the intensity of combat (which determines the need for replacements) and by the production times of key military equipment.

Postwar cumulativity depends on a different logic. Instead of reducing the prewar investment ratio required to take territory, it increases attackers' assessments of the value of taking it and thus may make them willing to attempt riskier ventures based on smaller prewar investment ratios.[75]

The two categories are completely independent; it is entirely possible that intrawar cumulativity could make no difference at all in a particular case while expectations of postwar cumulativity still provided a strong motivation to attack. Accordingly, the two types should be defined and measured somewhat differently, even though many of the same variables (e.g., popular resistance) affect both.

First, for postwar cumulativity it may not be appropriate to count the entire loss to the defender as a gain to the attacker, as postwar relations may not be zero-sum if both have other enemies and recovering the lost territory is not expected to be the loser's primary foreign policy goal. Second, the definition of military resources provided by territory must be expanded to include any strategic position or depth that it provides for future defense. Third, non-military resources must be included, as increasing cumulativity increases attack motives for greedy states as well as for security seekers.

Finally, because the offense-defense balance itself is a ratio, both types of cumulativity are best understood not as absolute values but as ratios.[76] For example, intrawar cumulativity is best measured as the net resource shift in favor of the occupier as a proportion of the resource value of the territory to the original owner (the defender).

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75 See the distinction between cost ratios and state values above, p. x.

76 Using attackers' absolute gains would yield meaningless results, as cumulativity would then appear greater for larger territories for smaller ones (e.g., Russia vs. Poland) even if the effect on the ratio of attackers' to defenders' costs for successful invasions of those countries were the same.

POLITICAL AND SOCIAL ORDER OF STATES

FIRST MOVE ADVANTAGES

A first-move advantage (or, as it is sometimes called, a first-strike advantage) is any situation where the sides' military prospects in a potential conflict differ depending on which side acts first.[77] We prefer the term "first-move advantage" to "first-strike advantage" because the important action need not involve actual combat; possible first moves include raising standing forces to a higher level of alert, calling up reserves, moving forces to positions from which they can defend (or attack) more effectively, and/or actually firing on opposing forces or territory.[78]

The magnitude of a first move advantage can be defined in several ways, such as the differences, depending on who moves first, in the attacker's probability of winning, or in the losses the attacker can expect to suffer, or in the peacetime investment that the attacker would have to have made to overcome a defending force of a certain size. We prefer the last formulation for consistency with our definition of the offense-defense balance. Thus a situation where the attacker needs 1:1 to win if he goes first but 4:1 if the defender does includes a larger first move advantage than a situation where going first only makes the differences between a 2:1 and a 3:1 investment requirement.[79]

Most formulations of offense-defense theory have treated first-move advantages as one factor, often a very powerful one, which influences the offense-defense balance.[80] The larger first move advantages, so the argument goes, the greater the dominance of the offense and the probability of risk of war.

We believe, however, that treating first move advantages as part of the offense-defense balance would create conceptual confusion, for three reasons. First, whenever there is a first move advantage, the attacker—the side attempting to take territory from the other—will not always be the side which moves first.[81] The onus of the first move does lie with the attacker: if no one does anything no territory will change hands. However, whenever there is a first move advantage there will be an incentive for the defender to move first, even if the defender has no ambition, or even any possibility, of taking any territory from the attacker. First-move advantages are always symmetric; both sides have an incentive to move first, if

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77 Cites to literature from the late 50s and early 60s on the war causing effects of FSAs.

78 Van Evera, 52-54, uses the term the same way we do.

79 We can measure the magnitude of a first move advantage as the attacker's required investment ratio if he moves second divided by his required investment ratio if he moves first. In the two cases above these would be 4/1 = 4 and 3/2 = 1.5, respectively.

80 To be more precise, the directional balance.

81 If there is no FMA, the defender has no reason to move first.

only to avoid the consequences of letting the other side move first.[82] The result is that a first move advantage will not always help the attacker because its existence makes it uncertain which side will move first.

Second, whenever there is a first move advantage, a directional balance which attempts to incorporate this will not be well defined.[83] By definition, if there is a first move advantage, the investment ratio which the attacker requires for success is different if he goes first than if the defender moves first. Thus, incorporating a first move advantage into the offense-defense balance would in fact yield two balances and no obvious way to choose between them.[84]

Third, contrary to most of the offense-defense literature, the effects on the probability of war of first move advantages and of shifting the offense-defense balance towards offense are not the same. As we explain in a following section, shifting the offense-defense balance towards offense in fact does not always make war more likely. The crisis stability literature, however, is correct that increasing first move advantages always does increase the risk of war. This occurs because the larger the shift in the attacker's required investment ratio which can be caused by moving first, the higher the probability that it can make the difference between the attacker's actual forces being adequate or inadequate.

For these reasons our definition of the directional balance above includes an assumption that first move advantages are zero. We choose this assumption not because it is empirically reasonable, but because we can more easily make statements about the separate effects of the offense-defense balance and of first-move advantages than we can about some difficult to define combination of the two.

CAN WE OPERATIONALIZE OFFENSE-DEFENSE THEORY? WOULD IT BE USEFUL IF WE COULD?

While previous sections addressed criticisms that focused on the underdevelopment of offense-defense theory, this section addresses criticisms that even if the theory were fully developed and properly specified it would still be impossible to operationalize, leaving it with little policy or explanatory value.

The key criticisms are: 1) The offense-defense balance cannot be measured; 2) Offensive and defensive weapons cannot be distinguished, so the theory collapses; 3) The

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[82] E.g., if one side can destroy the other's unalerted air force on the ground, the other has an incentive to alert its planes simply to avoid this, even if it has no prospect of destroying the first side's air force.

[83] Much of the existing offense-defense literature has ignored this problem, apparently assuming that attackers always go first.

[84] Nor would any sort of average be meaninful unless we could predict the probability that each side would move first.

offense-defense balance does not depend on technology, but instead the ingenuity of individual states; 4) State behavior depends on (mis)perceptions of the offense-defense balance, not the actual balance, so the theory lacks predictive value.

"THE OFFENSE-DEFENSE BALANCE CANNOT BE MEASURED"

"Uncertainty about outcomes of war prevents measurement." A common criticism of offense-defense theory is that the offense-defense balance is impossibly difficult to measure, and so the theory cannot predict or explain anything.[85]

According to this line of argument, the offense-defense balance, like the outcome of war, is extremely difficult for countries to know before a war starts. Thus, countries will design their strategy and assess their security based on indicators that are easier to measure. Under these conditions, the obvious alternative is to focus on the distribution of resources that countries can use to produce military capability, that is, to focus on the balance of power. In short, according to this line of argument, even if offense-defense theory is logically and deductively sound, offense-defense theory has little explanatory power. States act as predicted by the standard structural-realist arguments, which are cast in terms of power, not offense-defense variables and military missions.

Whether states can assess the offense-defense balance is an empirical question, which is beyond the scope of this article. Nevertheless, we present three arguments that greatly reduce the force of this criticism by placing it in a broader perspective. First, we suspect that this argument reflects a misunderstanding of what is required to assess the offense-defense balance. Assessing the offense-defense balance is no harder (or easier) than performing "net assessments"—analyzing the ability of a country's forces to perform military missions against other's forces. Performing net assessments requires working through essentially the same steps as assessing the offense-defense balance: determining which missions the state should be able to perform, developing a model of how the forces will interact in combat, and exploring the predictions of the model under different scenarios.[86] Consequently, analysts who believe that net assessments can provide useful insights into the adequacy of military capabilities should also believe that states can estimate the offense-defense balance. Critics who believe the former but not the latter misunderstand what assessing the offense-defense balance requires. [[fn: o-d balance is investment ratio, not force ratio]]

Second, many analysts believe that net assessment is a feasible task. During the Cold War, net assessments of a possible Soviet offensive in Central Europe were a medium-sized

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85 Levy. p. 222, comments that the "inherent difficult of determining the offensive\defensive balance...may result in some profound misperceptions." (He is focusing in this para on the importance of misperceptions, not the difficulty of determining, however.)

86 Of course, the ability to assess the outcome of a particular campaign is only informative about the offense-defense balance for that dyad, not for other dyads or for the system as a whole.

industry. Barry Posen estimated that the Soviets would need x, implying an offense-defense balance of x; likewise, Epstein, Mearsheimer, etc....[87] Basil Liddell Hart reported that allied attacks in the Second World War rarely succeeded unless the attacking troops had a superiority in strength of more than five to one together with the domination of the air.[88] Assessment of U.S.-Soviet nuclear exchanges, with roughly equal forces, showed that neither country could get close to having a first-strike/damage-limitation capability, implying that the defense had a large advantage.

Third, if critics were correct that the offense-defense balance cannot be measured, it would be not only offense-defense theory but all structural theories of war and peace which would be in trouble. The predictions of balance of power theory in particular are heavily dependent on assumptions about the offense-defense balance, even when these assumptions are not made explicit.[89] This may help explain why balance of power theories which do not explicitly incorporate the O/D balance have tended to fit the data poorly.[90]

"Indistinguishability of offense and defense prevents measurement." A common critique of offense-defense theory holds that offense and defense cannot be distinguished, which leaves the offense-defense balance unknowable/meaningless, which cripples the theory. For example, John Mearsheimer argues criticizes an argument because it "would look for a world where defensive military technologies dominate. However, "it is very difficult to distinguish between offensive and defensive weapons."[91]

The major flaw in this line of argument is that it conflates two logically separable concepts—(1) the offense-defense balance and (2) the distinguishability of offense and defense.[92] Whether or not particular weapons are distinguishable has no effect on our ability to calculate the offense-defense balance.

Consider a hypothetical case in which only one type of weapon exists. The attacker and the defender rely on this type of weapon for offense and defense respectively, which in effect leaves offense and defense indistinguishable. However, assessing the offense-defense balance might be quite easy. Assume that the only weapons system that was a available was a nuclear missile based in hardened silos. The indistinguishability would not complicate our calculation of the offense-defense balance, that is, of the relative cost of offensive (damage-

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87 Most of these efforts assessed not the entire campaign, but only its first (albeit most important) phase, the breakthrough battle. Thus estimates of the offense defense balance based on these assessments could be low, since success in the breakthrough battle does not guarantee final victory.

88 Deterrent or Defence, cited in Anders Boserp, ...

89 Glaser, "Realists as Optimists."

90 Schroeder; other critics

91 Mearsheimer, "The False Promise of International Institutions," p. 23.

92 Jervis, "Cooperation Under the Security Dilemma."

limitation) capabilities and defensive (retaliatory) capabilities. Nuclear weapons are not special in this regard. Assume instead that countries' conventional forces included only tanks, and no other weapon types. Once again, indistinguishability would not be a barrier to measuring the offense-defense balance. While no one has done net assessments of such an unrealistic situation, it would be perfectly feasible; if we can do net assessments for more complex force postures we can do it for simpler ones, and whenever we can do that we can measure the offense-defense balance.[93]

"OFFENSE AND DEFENSE CANNOT BE DISTINGUISHED, SO THE THEORY HAS NO POLICY USEFULNESS"

Probably the most important policy implication of offense-defense theory is that arms control can shift the offense-defense balance toward defense, thus increasing all states' security simultaneously.[94] The ability to design such agreements depends, however, on the ability to distinguish offensive and defensive weapons, since they work by limiting or banning offensive weapons while leaving defensive ones unrestricted. Weapons are characterized as offensive or defensive based on whether they are more useful in the execution of offensive missions or defensive ones. For instance, proponents often cite tanks and mobile bridging equipment as offensive on the grounds that conventional mechanized offensives would be extremely difficult without them. Similarly, nuclear arms control analysts have argued that highly accurate missiles and strategic defenses favor offense because they threaten states' retaliatory capabilities.[95]

A second policy implication of offense-defense theory, which also depends on the ability to distinguish offensive and defensive forces, is that states can signal non-aggressive intentions by unilaterally or cooperatively structuring their forces for defense.[96]

Critics of offense-defense theory argue, however, that offensive and defensive weapons are generally indistinguishable, and so neither of these policy options can actually be executed. They argue that virtually all weapons can be used for both offense and defense and

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93 Biddle, "The Determinants of Offensiveness and Defensiveness in Conventional Land Warfare," concludes that defense has the advantage, although he argues that distinguishing offensive and defensive weapons is hard; pp. 17-19, 341-3.

94 Of course, the offense-defense balance which is created by an arms control agreement is an artificial one, not the same as the structural offense-defense balance. This artificial balance constrains state behavior, but only as long as states abide by the agreement. Thus it is a "soft" constraint, compared with the "hard" constraint imposed by the structural balance.

95 Cite Nuclear arms control literature; conventional arms control literature; defensive defense literature; Liddell Hart on the 1932 ...

96 Defensive defense literature.

therefore cannot be identified as either "offensive" or "defensive."[97] The conclusion is that qualitative arms control cannot shift the offense-defense balance, nor can states signal intentions by forgoing certain weapon types.

This claim is wrong, because it is based on a wrongheaded understanding of distinguishability. What is important in distinguishing the offensive or defensive implications of a particular weapon or instrument is not whether it can be used by both attackers and defenders, but the effect that it has on the offense-defense balance. It is the effect of a weapon on the balance which determines whether limiting or banning it will increase states' security; if the presence or absence of the weapon affects the offense-defense balance, then states can shift the offense-defense balance by including it or banning it. What does not matter to the policy questions is whether both sides or only one side can find a use for a particular weapon; thus the critics' definition is unhelpful and, if taken seriously, misleading.

Thus distinguishability should be defined by comparative net assessment, i.e. whether the offense-defense balance when both sides can deploy the weapon is different from what it would be if neither had it. If including the weapon shifts the balance towards offense, it is offensive; if including it shifts the balance towards defense, it is defensive. Only if the ability to perform offensive missions (and defensive missions) is unaffected by the addition of the weapon is it truly indistinguishable as either offensive or defensive.[98]

Since the offense-defense effect of a weapon is determined by comparative net assessment, it is only defined with respect to the previously available choices.[99] This means that the same innovation— or arms control agreement— may have different implications depending on what other weapons and technologies are available. If the first nuclear weapons deployed had been on highly accurate missiles, this would shifted the balance toward defense compared to the previous non-nuclear world.[100] However, since the first nuclear weapons

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97 Some critics go further arguing that even if a particular instrument were usable only for defense--e.g., fortifications--it would still increase the offensive capabilities of a state which possessed it by allowing the state to economize on forces needed for defense in sectors where it was not attacking, conserving forces for the main offensives.

98 The offense-defense impact of a weapon is actually composed two parts, a direction and magnitude. Direction is usually easier to assess than magnitude, because net assessments are often approximate. However, direction alone is sufficient for distinguishability.

The question is not whether a particular weapon or innovation is useful only (or mainly) for offense or defense, but the effect that it has on the probability of success of offensive and defensive missions. If the existence of a weapon makes offensive missions harder to carry out than they would be if the weapon did not exist (or before it was invented), then that weapon can be said to favor defense. (note: symmetry assumption)

99 ...add a tanks/CFE example

100 Building an assured destruction capability would have been possible (making this world more defense dominant than the non-nuclear world), although more expensive than if missiles were inaccurate (making this world less defense dominant than the actual early nuclear world).

deployed were very inaccurate, the subsequent deployment of more accurate missiles had the effect of shifting the balance somewhat back toward offense.[101]

Framed this way, even many of the authorities who argue that no weapon can be characterized as either "offensive" or "defensive" effectively admit elsewhere that they can distinguish between innovations which strengthen the offense and those that strengthen defense. For example, Mearsheimer argues that characterizing weapons as offensive or defensive is impossible, but goes on to perform a comparative net assessment of the European Central Front with and without PGMs and concludes that PGMs shift the balance in favor of the defense.[102]

"THE OFFENSE-DEFENSE BALANCE DOES NOT DEPEND ON TECHNOLOGY, BUT INSTEAD THE INGENUITY OF INDIVIDUAL STATES."

Some analysts argue that the offense-defense balance has no practical meaning because they can design strategy to shift it in whatever direction they choose. For example, Jonathan Shimshoni argues that "while technology is important (and advantages surely exist), the first does not mechanically determine the second. Advantages, rather, are driven by the interaction of technology with doctrine and warplans. Most importantly, all three factors and the manner of their interaction are endogenous, motivated and manipulated by decision-makers."[103] Shimshoni argues that "military entrepreneurship," i.e., smart strategic and doctrinal choices, can enable a state to carry out missions which would otherwise be beyond its capability.

Shimshoni's argument depends on assuming that one side is smarter than the other, in effect relaxing the optimality assumption of offense-defense theory. If one side has a large enough advantage in skill, in principle it can accomplish anything; neither the offense-defense balance, nor the ratio of resources, nor any other external constraint will necessarily prevent this. Shimshoni's error is that he concludes from this that the offense-defense balance is not exogenous but instead is manipulable by state behavior. He thinks that when military entrepreneurs succeed in improving capabilities that they have overcome the structural

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101 At the conventional level, the introduction of rapid-firing magazine rifles in the middle of the 19th century is considered by most analysts to have shifted the balance in favor of defense by making it prohibitively difficult for troops to advance in battle. The invention of the machine intensified this trend, shifting the balance further toward defense. However, if these inventions had occurred in the other order, the second-- magazine rifles-- would in that context have favored offense, because they would not have added much defensive firepower to that already provided by machineguns, while their portability would have at least allowed them to be carried by advancing troops, which the machine guns of that time could not.

102 Mearsheimer, Conventional Deterrence, chp. 7. Also cite Colin Gray, Fuller

103 Shimshoni, "Technology, Military Advantage, and World War," p. 189.

constraints, when in fact they have only overcome a less intelligent opponent. This simply confuses the offense-defense balance, as a constraint which states face, with the balance of deployed capabilities. This mistakes the nature of the offense-defense theory (and all other structural theories), which are ceteris paribus arguments. Whenever a state faces an equally smart opponent, the opportunities of both are constrained by the offense-defense balance. Shimshoni's objection thus does not touch the logic of offense-defense theory.

"STATE BEHAVIOR DEPENDS ON (MIS)PERCEPTIONS OF THE OFFENSE-DEFENSE BALANCE, NOT THE ACTUAL BALANCE, SO THE THEORY LACKS PREDICTIVE VALUE."

A common criticism is that perceptions of the offense-defense balance, not the balance itself, determine states' decisions for war and arms racing; therefore, the "objective" offense-defense balance cannot be used to predict states' behavior. In this spirit, Jack Levy argues that "If the offensive/defensive balance is not defined in terms of the perceptions of decisionmakers (and in most conceptualizations it is not so defined), then the hypothesis is technically misspecified."[104]

In effect, this line of criticism challenges our argument defining the offense-defense balance under the assumption that states make optimal choices. Misperceptions of the objective balance can lead to suboptimal behavior by causing states to choose military strategies and forces that do not provide the best prospects for success. Misperceptions can also lead to suboptimal behavior when states misjudge the mission capabilities of the deployed forces, since these misperceptions can fuel flawed decisions about arms racing and war.

The key problem with the misperceptions critique is that it misunderstands the purpose of offense-defense theory, which is to understand how well states can do at meeting their objectives, given structural/exogenous constraints.[105] Of course, states may not make optimal choices. Predicting behavior when states suffer misperceptions requires combining offense-defense theory with a theory of the causes of misperception.[106]

Moreover, the need to combine offense-defense theory with a theory of misperceptions to get a theory of state behavior does not reduce the importance of offense-defense theory. In fact, an offense-defense theory based in optimal behavior remains essential for at least three reasons. First, offense-defense theory built on the assumption of optimal choices provides a necessary baseline for determining whether misperceptions of the balance

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104 Levy, p. 222.

105 These judgements also depend on other assumptions of the theory, for example, that states can be viewed as are unitary actors matter.

106 SVE, Causes of War, adopts this approach.

have occurred and for estimating the magnitude of these misperceptions. Second, although a theory of state behavior cannot be built entirely from offense-defense theory, it is equally the case that such a theory of state behavior cannot be built without offense-defense theory, since we need to predict how states will act given their understanding (perception) of the offense-defense balance. Third, and closely related, offense-defense theory is necessary for determining the impact of misperceptions, since we do this by comparing the predicted behavior under correct perceptions of the offense-defense balance to the behavior that occurs under misperceptions.

CORRECTING FLAWED CLAIMS AND DEDUCTIONS ABOUT WAR

REVISED HYPOTHESES

Although our central purpose in this paper has been to explore, clarify and strengthen the foundations of offense-defense theory, in this section we shift our focus to the deductions that are generated by offense-defense theory. We argue that some common claims and deductions are flawed and explain how to correct them.

The offense-defense balance is often used to explain the frequency, intensity,[107] decisiveness,[108] length, and cost of war, as well as the intensity of peacetime arms races.

The standard predictions for war are that when the advantage of the offense is greater, wars will be more frequent, more decisive, and more intense, but shorter and cheaper. As defense dominance increases, wars will be less frequent and less decisive, but longer and more costly. Such discussions rarely explicitly consider the condition of offense-defense parity, but the general flavor is usually that this should yield outcomes midway between those occurring under offense-dominance and those occurring under defense-dominance. Offense-dominance is also thought to increase the intensity of arms races, while defense-dominance is supposed to dampen them.

In fact, only one of these predictions is a correct deduction from the theory; decisiveness of war should indeed vary directly with offensive advantage. The frequency of war, however, need not be related to the offense-defense balance, as there are important influences cutting each way. Length and cost should be greatest at offense-defense parity and minimized at either extreme. Finally, motives for arms racing are also strongest at offense-defense parity, and grow weaker as the offense-defense balance moves away from parity.

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107 "Intensity" means how fiercely opponents prosecute the war; this is hard to measure directly, but cost (in casualties, money spent, or physical destruction) per unit of time may be a good proxy for it. Thus, as we have defined them, intensity times length equals total cost.

108 "Decisiveness" can be operationalized as the amount of territory, as a proportion of the belligerents' total territory, that will change hands in the war.

The hypotheses that war should be more frequent when offense has the advantage neglects two factors: the objectives for which wars are fought and the risks of war to attackers. Hypotheses on the frequency of war implicitly assume that attackers face a single offense-defense balance. They focus on the balance for large, unlimited wars, while overlooking that attackers actually face a range of balances, which vary with the attacker's objectives. As we explained in an earlier section, the offense-defense balance for limited aims wars tends to be less defense-dominant than for large wars for a variety of reasons: offense benefits more from first-strike advantages; the defender's advantage in value/resolve may be smaller when the attacker is pursuing limited aims; and, the attacker faces increasingly difficulty logistical problems the further it advances, while the defender's logistical problems do not become greater and might even diminish. Consequently, even when the offense-defense balance for large wars strongly favors defense, the balance for limited aims wars could be much more favorable to the attacker. Therefore, we might expect a much smaller variation in the frequency of war with variation in the offense-defense balance for large war than is predicted by the standard hypothesis.

Nevertheless, this argument is not itself sufficient to overturn the hypothesis that the frequency of war increases with offense advantage. It is at least arguable that the offense-defense balance for limited aims wars shifts toward defense when the offense-defense balance for large wars shifts toward defense. If so, then we would expect the original hypothesis to hold, although probably less strongly than before we included the impact of different attacker objectives.

However, including the risk of different types of war further reduces the correlation between frequency of war and the offense-defense balance. When offense has the advantage, states are less likely to pursue limited aims than they are under defense advantage, because the probability of escalation, and therefore the risk of war, are much greater. Given these risks, states will opt for war only when the benefits of war are larger. This means that over wide ranges of the offense-defense balance we might see little change in the frequency of war, but much larger changes in the kind of war.

Like the preceding argument, our objections to the hypothesis that offense dominance leads to shorter and less costly wars than does defense dominance are built on the need to distinguish between the types of wars that states will choose to fight. We agree with the standard argument that offense dominance should lead to short wars, and therefore less costly wars, because attackers can efficiently destroy defender forces. But we also believe that wars will be short under defense dominance. Attackers will attempt offensives only in pursuit of limited aims, relying on big first-strike advantage or major resource advantages. In these cases, however, attackers will stop once they have achieved their limited aims, if not before, because the value of the initiative will end quickly. Moreover, the war will be short because defenders will rarely launch counter-attacks to reverse limited aims, because defenders will lack first- strike advantages and therefore have little prospect of military success. In addition to being short, war will be cheap for another reason: during the war, even if it drags on, there are likely to be long periods of sitzkrieg.

Contrary to the standard arguments, we find that the war should be longest and most intense (i.e., high cost per time) when the offense and defense are roughly equal. It is under these offense-defense conditions that force-to-force ratios matter the most. Consequently, both the attacker and defender are more likely to see reasons for continuing and escalating the war. When offense and defense are roughly equal, taking a little more territory, gaining another ally, or escalating the conflict may be sufficient to change the outcome of the war. In addition to being long, we also expect wars to be intense: both sides are pressed to fight at high intensity throughout the war because the outcome of particular battle and campaigns are more sensitive to force ratios and therefore to the resources that each side commits to them.[109]

Similar considerations lead us to hypotheses about arms races that diverge from those commonly offered by offense-defense theory. The standard hypothesis is that the intensity of arms races increase with increases in offense advantage: When defense has the advantage, arms races will not occur or, at worst, will be mild; when offense has the advantage, arms races will be intense. However, force ratios are relatively unimportant at both extremes. The standard argument about defense advantage is correct: when defense has a large advantage, attackers need overwhelming advantages, which are unavailable, as well as unnecessary for security-seekers, so arms races are mild. The standard argument about offense dominance overlooks that force ratios are relatively unimportant in this case as well. Since the attacker can prevail with a significantly smaller force than the defender, two countries with roughly equal size forces have little incentive to get a jump in building arms, since a jump would rarely provide a defender with such a large advantage in force size that it would enable the defender to defeat the attacker. Under offense dominance countries will have strong incentives to attack, but only mild incentives to arms race.[110]

In contrast, we expect intense arms races when the offense-defense balance is near parity. This is the case in which military mission capabilities are most sensitive to small differences in force size. Therefore, countries with equal size forces will have to worry about falling behind in a race, which will produce intense racing. Arms races may not lead to war, however, because attackers will have to gain large advantages to have high confidence in their ability to prevail.

THE ACTUAL DISTRIBUTION OF OFFENSE-DEFENSE BALANCES

These revised hypotheses are especially interesting when we consider the offense-defense balances that states usually face. Analysts often assert that defense always has at least some degree of advantage over offense, but have not used offense-defense theory to support

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109 Note that this is not true when the offense has an absolute advantage: the larger the absolute advantage of offense the less it matters how much resources are devote and the more it matters which side attacks first.

110 We would however expect intense arms racing if a qualitative arms control agreement that allows defense while banning offense breaks down. This race might not last for long, because under offense dominance the country that gains the lead will face strong window pressures.

their claim. If correct, this conclusion has powerful implications for the theory. When we think about how the world will behave when it gets as relatively offense advantaged as it ever gets, we should not think about how the world would act when offense is enormously cheaper than defense, but rather how it would behave when offense is roughly as costly as defense or much more expensive than defense.

We first use offense-defense theory to explain that this claim about actual offense-defense balances is correct. We conclude by summarizing the implications for the predictions of offense-defense theory.

To demonstrate that absolute offense dominance — i.e., a situation in which a country that has far fewer resources than its adversary can win simply by choosing to attack— rarely occurs in the real world, we need to ask what behavior we would observe in that condition and check whether we ever observe it. The key here is the optimal strategy that states should adopt in war. Whenever offense is more efficient than defense, any state involved in a war should choose to fight on the offense instead of waiting to let their opponent attack them.[111] This is true regardless of whether the states preferred to have a war and regardless of the relative resources of the two states, and regardless of which side attacked first.[112] Thus, whenever offense has a large absolute advantage most wars should begin with mutual simultaneous (or nearly simultaneous) full-scale offensives by both sides.[113] This should occur even if the sides are very unequal in power.

In fact, history records almost no such instances. The only one among major powers in the last two centuries was the simultaneous French, German and Russian offensives at the start of World War I. This incident occurred because all three powers thought that offense had the advantage. Even this was based on misperceptions — although all three major powers thought offense had the advantage, it did not.

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111 A possible exception are limited aims wars in which the defender fights on the defensive to minimize the risk of losing large amounts of territory.

112 Once convinced that war is inevitable both sides should prefer to attack first even if they did not prefer war. Even the side which does not attack first, however, should prefer to fight on the offensive as soon as possible, unless the other side's first strike has devastated its forces, making a coherent response impossible. We are agnostic about whether these offenses would be launched into the teeth of one another or launched on different fronts.

113 The only way to get defensive strategies in this situation would be if states mistakenly over estimated the power of the defense. While this could happen in particular instances, it is very unlikely that there could be a systematic tendency of states to under estimate the offense. In fact, research on this question suggest the opposite: Posen, Snyder and Van Evera.

STABILITY IN THE POSTMODERN AGE: A CONCEPTUAL EXPLORATION

G. D. Foster

ABSTRACT

This paper seeks to establish a preliminary conceptual framework for understanding the nature, importance, and dynamics of military stability in a "post-modern" international environment.

Drawing principally, in its initial form, from Kurt Lewin's ideas on force field analysis, the systems theoretic notions of ultrastability and homeostasis, and the conceptual explorations of Donald Schön (Beyond the Stable State), the paper will treat the following:

- The relationship of stability to such related phenomena as order, security, change, conflict, turbulence, inertia, stagnation, entropy, chaos, and turbulence.
- The nature of the factors—military, political, psychological, sociocultural, economic, technological, moral, and intellectual—that appear to constitute the "force field" for analysis.
- The question of whether there does or doesn't exist a "family" (or hierarchy) of stabilities (global, regional, systemic, regime) that affect and are affected by military stability.
- The extent to which the still inchoate features of the postmodern world—post-state, post-sovereign, post-realist, post-secular, post-scientific—materially alter the terms of reference for understanding and managing military stability.

STABILITY DURING CONFLICT

J. Ketelle

ABSTRACT

Most stability work has centered on military postures that will avoid actual conflict. This paper explores how a military conflict (war) can be stably managed, controlled, and brought to an efficient conclusion. In the initiation stage, it looks at the trade-offs of early intervention with its prospects of likely but light casualties, versus the alternative. It looks at the "optimal" size, composition, and deployment of the intervening forces. It looks at the alternatives of massive first battles versus "sample battles". In the termination stage, it looks for ways for both sides to get convinced that they should look for an alternative to continuing the war. It explores an apparatus (both organizational and physical) for conducting armistice negotiations. It proposes a coherent structure for all this, and looks for ways the military analysis community can improve that structure.

IS "STABILITY" ALWAYS DESIRABLE? AND IF NOT, WHEN IS IT AND WHEN ISN'T IT?[1]

H. H. Mey

ABSTRACT

Stability can be defined in many ways, and applied to many, very different, geopolitical situations. For many of these, stability is clearly an appropriate objective for policy makers – but for some it is not. The purpose of this paper is to consider some of the ways in which common definitions of stability might not necessarily serve the larger public interest, and thereby to help identify the range of situations in which stability should and should not be a primary criterion for force design.

For example, for stability to be in any given state's interest requires a "starting point", i.e. a *status quo* that is commonly perceived as worthwhile to be maintained. In the real world, however, the existing world order as well as specific situations in many regions of the world are scarcely perceived as acceptable by everybody. Hence, stability as an objective is only acceptable at a certain time and for a certain party, i.e. efforts to maintain the *status quo* must be perceived as in one's own interest. Moreover, some stability definitions would discourage the design of air and ground forces for enforcing punitive sanctions on international wrong-doers; for reversing the effect of quick, *fait accompli* land-grabs; or for transporting (and protecting) humanitarian aid over long distances or into areas of ongoing conflict. Yet such actions can clearly be in the larger public interest. In fact, the public interest demands some combination of "offensive" and "defensive" military power – and for "stability" to be an appropriate objective for policy, we must be clear about when, where, and how it actually serves those larger interests.

In this paper it will be shown that in particular the new security environment requires the availability of offensive air power to Western policy-makers — despite the fact that this very capability might be perceived as threatening to their interest by others.

INTRODUCTION

The term "stability" enjoys broad political and public support. Stability can be related to many things: the economic and domestic situation, international relations, etc. It

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[1] Preliminary Draft. Subject to revisions! Do not quote without permission of the author!

can aim either at maintaining the *status quo* or at keeping an evolutionary process of change controllable, predictable, within limits or predetermined boundary conditions, peaceful, on track, in other words: "stable." The latter can be differentiated even further by distinguishing between stabilizing either the boundary conditions that allow for evolutionary change or the process itself which, however, requires as a precondition a comparatively stable environment. Like in physics, a political *situation* (condition or order) can be called stable, if it either resists forces of change or if it goes back into the original situation (condition) if those forces disappear or are being countered. A political *process* can be called stable if forces directed at influencing the process have only a marginal effect upon its main course.

This author basically accepts RSG.18's definition of military stability, i.e. that for perfect military stability, each party must possess a defensive capability sufficient to deter any hostile party from an attack, or to repel an aggressor if attacked. The question, however, is whether such a stability is desireable. Nations that subscribe to the concept of military stability *within a region* might have interests outside that region. To protect those interests, especially over long distances, might require military capabilities that could interfere with stability considerations for the respective stability zone. Furthermore, for reasons of *political stability* states might wish to have strategically offensive capabilities at their disposal, capabilities that are, by definition, not compatible with military stability in that region. Hence, while military stability in many cases is desireable, in others it might not.

STABILITY AFTER WORLD WAR II

As the term "balance of power" before World War I, the term stability, especially in the era of nuclear confrontation, was mainly directed at defining the conditions that prevented the outbreak of war. Consequently, in international relations, stability was predominantly understood in its military dimensions. The international order after 1945 was shaped by a bilateral political and military confrontation overshadowed by the capability on both sides to destroy the other side even after suffering a first strike. Under the impression of the existence of *mutual* destruction capabilities policy-makers on both sides increasingly perceived cooperation as a prerequisite for stability. Nuclear crises, and the requirement for crisis management, became the substitute for war, at least in the sense of direct military conflict — while, under the cover of nuclear paralysis, small wars, and in particular proxy wars, remained part of the nuclear reality.

At the same time, both sides attempted to maximize their political room for maneuver by seeking military flexibility under the condition of restraint imposed by the military, and in particular strategic nuclear, capabilities of the other side. Over time, the strategic and military realities have been increasingly codified by arms control agreements, a process that was attempted to increase predictability, some would say stability, but was in itself part of the strategic competition. In other words, both arms build-ups and arms control measures were intended to increase or, at least, to protect one's own options and broaden the room for maneuver while narrowing or denying the other side's options.

Military competition must be understood politically. It represented the preferred field for the Soviet Union to engage the West, since arms competition was probably the only field of political competition in which the Soviet Union enjoyed a competitive advantage *vis-à-vis* the West — less in a technological sense, but rather in the way how the state was able to organize the economy and the society as to maximize wartime readiness in peacetime.

Strategic competition, understood as a dynamic process of option and option-denial, was remarkably stable and risky at the same time. Although the East-West confrontation was rather *status quo* oriented — this was at least a predominant perception — evolutionary change was never excluded. In the second half of the 1960s it became clear, at least to some Western observers, that the West had to sustain the arms competition with the East in order to allow the systemic failures of Communism (or whatever the appropriate label for the regime in the former Soviet Union) to do their work of self-destruction in those countries.

Maintaining stability was, therefore, from a Western perspective much more process-oriented than many observers recognized. This applies to both maintaining the boundary conditions stable, i.e. to prevent the cold war turning into a shooting war, as well as keeping a cooperative process alive that was intended to allow for evolutionary change. It goes beyond the scope of this paper to elaborate on the debate about whether East-West cooperation, or détente, has helped to further or to delay the process of change in the Soviet Union and Eastern Europe.

Although catastrophic failure of this process, i.e. nuclear arms competition and political cooperation, could never be excluded, the revolutionary changes of 1989/90 support the thesis that the overall situation was by far more stable than critics of nuclear deterrence had been willing to admit. Both elements, the structure of the international order as well as nuclear deterrence, did play an essential role in allowing revolutionary changes without war.

STABILITY MAY FURTHER INSTABILITY

Stability, as many other formulas like national interest or national security (see Arnold Wolfers for an elaboration on those categories), may not only mean different things to different people, it may not have any precise meaning at all. It could be used even in a deceptive way. But this is not even the main problem with the term stability. In the name of stability policy-makers tend to become *status quo* oriented although the domestic situation in a particular country, the overall situation in a region, boarder disputes or minority problems, etc. do not suggest that the *status quo* can, or should, be maintained forever. Politicians lose sight of realities and tend to escapism, all in the name of maintaining stability.

There are many examples where the *status quo* was simply not sustainable, like in the former Yugoslavia, while the current situation is probably not preferable to the former *status quo*. Fearing the consequences of change, one tends to stick to a *status quo* that needs to be changed and that is not sustainable over time. However, any attempt to change the *status quo* smoothly and evolutionary often leads to a complete break-down of the political order. In this

situation, political analysts can do what they probably like most, i.e. to identify a classical dilemma.

No solutions to this problem exist. Maintaining, in the name of stability, a *status quo* that is probably not worth to be maintained can, in the long run, be as destabilizing as the attempt to change it. Hence, any request for stability must be related to establishing a situation that is worthwhile to be stabilized. On the other hand, a *status quo* that is really worthwhile to be maintained sometimes requires only little, if any, external stabilization effort. The key problem here is, that different parties will have a different view on *whether* the *status quo* is worthwhile to be maintained, *how* it should be changed if this is perceived to be necessary — peaceful change only or change even at the risk of war—, and at what costs?

Consequently, there are situations in which stability should be no objective in itself. Whether stability should be pursued as a political objective simply depends on what the *status quo* really is, whether stability is *status quo* oriented or process oriented, in whose interest it is to maintain the *status quo* or keeping the process on track, to what extend maintaining the *status quo* allows for, or even is a prerequisite to, peaceful change, and, above all, it depends on whom you talk with.

Even if stability is being narrowly defined in terms of "war prevention," it is questionable whether it is *always* in our interest to prevent *any* war at *any* costs? There are probably circumstances under which war might be the lesser evil. Clausewitz once — *said cum grano salis* — that the defender is the one to be blamed for a war, since the attacker prefers to invade without firing a single shot. In other words: There are circumstances that can evolve, that might require the recourse to arms since not to go to war might have more negative and dangerous consequences than going to war. But what consequences to whom?

The *status quo* (what *status quo?*) at a specific time will only be worth maintaining to some people. Others prefer to maintain the *status quo* right after some "minor" adoptions and changes. Saddam Hussein probably preferred to maintain the *status quo,* at least for some time, right *after* he had conquered Kuwait. Can a stable military balance in Europe, if there were such a thing, really prevent *fait accompli* land-grabs elsewhere in the world and if not, what to do about it? Just in case somebody suggested that tactical or short-range air lift is all right, i.e. stabilizing, and strategic or long-range air lift is not, how could the United States and its allies then, i.e. without strategic air lift, have liberated Kuwait and reversed a *fait accompli* invasion? It becomes clear that the real issue at stake is whether the build-up of a regional or an international collective security regime can be realized in the long run. Furthermore, one has to answer the question whether it works not only against medium-size regional aggressors but also against a nuclear superpower like Russia and China. For the time being, it looks as if the West, for reasons of maintaining world-wide political stability might wish to have a military posture that will be offensive and destabilizing in the perception of potential wrong-doers in the world.

But even if we try not to complicate things and take a more narrowly focused look at the situation in Europe, it does not seem clear what stability really means. This can be illustrated by referring to the idea of extending NATO membership to the Visegrad states. Proponents argue that this would provide stability to (parts of) Eastern Europe but it is not directed against Russia because Russia is a partner and does not provide a threat to Eastern or Western Europe — which, in turn, raises the question of why NATO membership, then, would be so important. And it must be even in Russia's own interest — according to the Western proponents of NATO expansion of membership — to have a stable Eastern Europe.

Expanding NATO beyond any doubt means to change the *status quo*. However, proponents of inviting the Visegrad states to join NATO would argue that NATO expansion is precisely aimed at both maintaining the *status quo*, i.e. filling the security vacuum and keeping the Western orientation of those countries on track, as well as furthering democratic and economic developments in those countries. Hence, by changing the *status quo* one wants to maintain it. One intends to provide security for countries that one feels that are under no, at least immediate, threat. On the other hand, one refers to the possibility of negative developments in Russia and, hence, an urgent need of extending NATO membership to Eastern Europe while arguing to Russians that NATO extension is not directed against them. What if, just for the sake of the argument, Russia does not share the Western view that it is in Russia's interest to accept this change of *status quo* and that Russia should even applaud to this step? What if Russia's national feelings are being hurt by Western stept directed at taking advantage of a temporary weakness of Russia? What does this mean for stability ten years from now? Proponents of NATO expansion argue that NATO, too, will change and that the "new" NATO will be something that Russia can also live with even with some former Warsaw Pact countries as members of NATO. This seems to be the naval gunnery problem: moving target and moving platform. Both, NATO expansion and changes within NATO, change the *status quo* that this process is intended to preserve in the first place. Does the West want a stable Russia or a stable Eastern Europe or both? What if stabilizing Eastern Europe by accepting these countries as NATO members means to destabilize Russia, since it might strengthen anti-Western forces within Russia? What if for the sake of keeping Russia stable we promote, indirectly, Russia's consolidation process that might lead to a revitalization of imperialism and expansionism? There is obviously no easy answer to the question in whose interest stability is, at what time, and under what conditions.

If stability means to maintain the existing "world order" and to allow for peaceful change — most probably a definition and objective that most Western politicians could live with — one must preserve the military option to reverse the results of militarily imposed changes of the "world order" or threats against "world peace." All these terms are sufficiently inprecisely defined to allow for sufficient flexibility for the West to act if it perceives that certain developments are a threat to its interest. Would it not be more honest, and less contradicting, to accept that stability is only a valid objective for the West when it serves Western interest?

The new security environment provides, aside from new opportunities for cooperation and stability, new challenges that have to be met. In Europe the "Charta of Paris" represents the commonly and cooperatively agreed peace order in Europe. Military power is, thus, required only to stabilize this peace order, but as, among other conflict areas, the situation in former Yugoslavia demonstrates overall stability and regional wars are by no means mutually exclusive. Attempts to define criteria for military stability in Europe will certainly be challenged by reality. Stability concepts will only apply to Europe, not the Near and Middle East, not even to the United States, not to many other areas in the world, and even for Europe it will not cover many relevant conflict areas. But this doesn't mean that recommendations for "stable" force postures are of no use (although they are probably of less relevance today than during the days of military East-West confrontation).

Recommendations for stable defense, worthwhile as they are academically, should aim, however, at a force posture that can cope with the real world. In other words: They have to take into account that many factors other than military stability considerations in a narrowly defined sense, will shape both the definition of foreign policy objectives as well as force planning processes. Military force is an instrument of foreign policy and has to serve the national interest. If a force is designed to meet the political requirements other than stability considerations what does this say about the forces and what does it say about the recommendations?

The author of this paper agrees basically with the general conclusions of the "Final Report" on "Stable Defence" [Panel 7 on The Defense Applications of Operational Research, RSG.18 on Stable Defence, Technical Report AC/243 (Panel 7) TR/5]. However, the following paragraph of the "Executive Summary", para xxii, on page x, causes problems. It reads:

> xxii. Offensive air capabilities tend to be destabilizing unless compensated by air defenses capable of protecting offensive air systems against air strikes, thus removing a pre-emption bonus, and capable of neutralizing them when they attack land force assets and communication lines of the defender only. Thus, in order to favour the defending side air defenses should be either stationary or have mobility limitations designed into them so that they may not provide protection for ground forces advancing rapidly on enemy territory.

What conclusions can be drawn from this advice? The quick and perhaps superficial reader, overreading the qualification given, might get the impression as if offensive air capabilities were something destabilizing and, thus, something one should not have. This would be so clearly against Western interest that it is worth to elaborate on the increasing need for offensive air power. Before doing so, a little side note on limiting mobility of air defenses.

Imposing limits on the mobility of air defense systems would affect MEADS, the planned HAWK successor system. NATO states have identified an interest to support stability even beyond the treaty area — if vital interests are at stake. Peace supporting and peace enforcing operations might require the employment of forces "out of area." Given the

proliferation of both modern weaponry as well as weapons of mass destruction and delivery vehicles it is clear that those forces are under potential threat of aircraft and missiles. Hence, there is a clear requirement for having a ground-based extended air defense system that can protect crisis reaction forces "out of region" and "out of area." The recommendations of the report seems to contradict those requirements and, therefore, need to be discussed further. Europe has either to forego with the option to ever send crisis reaction forces abroad and come to help of countries that are under threat or have been invaded or it has to be explained how NATO' scrisis reaction forces can be protected against air threat without sytems that are, at the same time, well-suited to protect "destabilizing" invasion forces as well.

Taking a close look at the future requirements for offensive air power one cannot help but conclude that in order to meet the requirements one needs air power that will not necessarily be perceived to be stabilizing in the eyes of others. It should be noted, that the terms offensive and defensive have to be put in perspective. Both activities can be applied to the tactical, operational, and strategical (and some would even add grand strategical) level. For instance, an airplane's mission can be simultaneously tactically defensive, operationally offensive, and strategically defensive. Any other permutation is possible. Hence, on the basis of RSG.18's definition of military stability when the term offensive is being used here it usually refers to the tactical or operational level. The capabilities on the strategic level, and whether they are desireable or not, are usually being discussed in the context of stability.

The following paragraphs are a summary of a chapter of a study that the Institute for Strategic Analyses (ISA) in Bonn has done for the German Air Force on the future of offensive air power. The chapter elaborates on criteria for the right mix of offensive and defensive air power.

In the ISA study on "Offensive Air Power" six criteria have been identified that have an influence upon the adequate balance of offensive and defensive air capabilities for a power that is defensive in its strategic orientation. Those six factors are (i) the dimension of the opposing air threat; (ii) the nature of the conflict; (iii) the densities of forces; (iv) the degree of time urgency; (v) the adaptability of the opponent; (vi) the structure and composition of the coalition. It should be noted, again, that both offense and defense, as discussed in the following paragraphs, refer to the tactical and operational level of war if not stated otherwise.

The dimension of the opposing air threat is a major consideration for determining the relative need for offensive or defensive air power. If the opponent has little or no offensive air power, there is probably no need for defensive air power. Offensive air capability on the side of the opponent requires own defensive air power to ensure that one's own ground, sea, and air activities are not significantly threatened. Taking cost-effectiveness criteria into consideration it becomes clear that a most effective way to counter an offensive air threat is going against the enemy's air bases and planes on the ground with offensive counter air operations. A mix of offensive and defensive capabilities is, therefore, required. The exclusive reliance on defensive air power cannot be recommended.

Another factor influencing offensive/defensive considerations is the nature of the conflict. While many contingencies may require defensive air capability on the side of the West, many of the new challenges do require the employment of offensive air power. The enforcement of sanctions, threatening air strikes in support of crisis management, etc. — diplomacy would be extremely restricted if it could not be backed-up with the option for offensive threats. This applies to the operational level of war, since the strategic objective may still be defensive (protecting allies, reversing an invasion, maintaining the world order, etc.). There are situations, however, in which the West might even wish to have strategically offensive capabilities available, if circumstances require to prevent worse things from happening.

Under the condition of low force densities, the defender becomes all the more dependent on using the depth of territory and counter attacks. The availability of long-range fire power, thus, becomes very important. The air force can provide quickly concentratable combat capability, while it might take ground forces much more time to counterconcentrate in a threatened area. Hence, with low force-to-space ratios, as a result of unilateral disarmament or arms control agreements, offensive air power gains importance.

The degree of urgency with which a war has to come to an end also determines the requirements for offensive air power. Sometimes an invader, like Saddam Hussein after he had successfully occupied Kuwait, had no rush to engage in hostilities with the Coalition under the lead of the United States. The Coalition, on the other hand, was under the impression that it could not wait until Ramadan or the beginning of severe weather conditions because of the difficulty to keep a coalition together over extended periods of time. Hence, the more time urgent a conflict has to come to an end, the more offensive power one must have available. Only the availability of offensive power allows to take the initiative and only offensive actions can force the opponent to leave an invaded country. Without an offensive operation to liberate Kuwait, the Iraqi forces were probably still there and hostilities might last for much more time. In many cases, air power could be the appropriate, and a decisive, instrument to initiate offensive operations. Furthermore, in probably no cases liberating an ally can be done effectively without it.

The adaptability of the opponent is another criteria that influences the appropriate mix of offensive and defensive air power. The longer the war lasts the more opportunities exist for the opponent to develop countermeasures to exploit one's own vulnerabilities. The longer the observation and innovation time that allows to adopt to circumstances the higher the risks and costs imposed by the opponent upon oneself. This is a reason why there is an interest in quick results in which to achieve offensive air power will probably play a decisive role.

Finally, the makeup of coalitions is likely to influence the need for offensive air power. Defensive warfare will in most cases increase the duration of conflict while an offensively oriented warfare increases chances for quicker results. The longer the conflict, the harder it becomes to hold a coalition together that probably consists of countries which interests are not fully congruent. In case of a mainly defensively oriented warfare on the side

of the coalition, the opponent himself will probably try to extent the duration of the conflict. He would base his reasoning on the assumption that time works against the coalition. And indeed, political difficulties to keep a coalition together are likely to increase over time. Hence, offensive air power might contribute significantly to bring conflict to an early end.

In sum, offensive air power will play an important role in many future contingencies. There is little reason to believe that constraining tactically or operationally offensive air capabilities will lead to a more stable world. But even if a world in which offensive air power is available to both sides were less stable, it is not likely that Government would forego with this instrument and, thereby, narrowing its room for maneuver in a crisis. It is clear that strategically offensive air power is, by definition, militarily destabilizing. However, military instability may be in the Western larger interest, since the availablitity, and use, of strategically offensive military power could be perceived as vital for maintaining, or promoting, political stability.

Is stability always desirable? From a Western perspective: probably yes, if certain conditions are being met. Stability must allow for peaceful change. Hence, it must be clear that stability is meant to stabilize boundary conditions and the process of change itself. A *status quo* orientation, hence, should only focus on principle elements of the world order and not necessarily on the situation of today.

To ensure world-wide stability in the sense of maintaining the *status quo* is not affordable even if the West attempted to do so. Hence, a limited-scale surprise attack, a *fait accompli* land-grap, or even an invasion of a smaller country can never be excluded. In a comparatively stable world, some powers must now ensure that the results of this wrong-doing can be reversed. As in the case of the Iraqi invasion, Kuwait has not been liberated with "defensive defense." To come to the help of a victim of aggression means to engage in an offensive operation. It is by no means possible to distinguish this capability from the capability to attack and, depending on the strength of the respective opponents, to obtain a high military payoff by attacking the other. May be that some people seriously suggest that the United States and Iran should have an overall balance of power. This author, however, is convinced that a comfortable superiority on the side of the United States and the West in general is still the best insurance for stability, no matter how defined. Even if other states in this world do not like this situation, it still serves Western interest best. This applies as long as a collective security system does not work world-wide (not just in a region). Our Ministers, at least in Germany, have sworn into office by promizing to further the well-being of their people and to avert damage to them. This cannot be guaranteed without the military instruments required to preserve the fundamentals of the world order — our world order. This might not be fair, balanced, or whatever, but it serves our interest and — as we think — the best interest of other people, too.

SESSION REPORT
INTRANATIONAL STABILITY[1]

G. J. Miller

Most of the sessions at this symposium dealt with issues of military stability among nations. In contrast, this session addressed the topic of "intranational" stability, or military stability within a nation. The demand for military operations designed to promote or restore intranational stability has increased dramatically since the end of the Cold War. Their potential scope has also grown to include such diverse activities as preventive deployment, humanitarian relief, and nation building, as well as traditional peacekeeping tasks, and more intense peace enforcement activities. These operations have come to be known collectively as peace support operations (PSO).

It is generally understood that PSO are different in significant ways from the conventional warfighting situations for which military planners have traditionally prepared. Peacekeeping (defined by the US Army[2] as "operations using military forces and/or civilian personnel, at the request of the parties to a dispute, to help supervise a cease-fire agreement and/or separate the parties") and peace enforcement ("military intervention to forcefully restore peace between belligerents who may be engaged in combat") cover a broad spectrum of mission intensities. These operations are generally governed by an imprecise "mandate" (rather than a mission) that is subject to change. Although engagements can occur, there is no enemy force, and armed forces are frequently not identifiable as such except when they are active. When engagements do occur, the rules of engagement differ from those for traditional warfighting situations. Furthermore, there is usually no clear line of contact between forces (whose movement in traditional warfighting situations is an important goal of both sides).

Because of these differences, and in spite of the importance and prevalence of PSO in the new global political-military environment, the operational analysis community is just beginning to identify ways to assist decision makers in dealing with these complex operations. Determining answers to the following questions would seem to be important early steps in this process:

(1) What decision issues concerning PSO would benefit from improved analysis?

(2) In what ways do PSO differ from conventional warfare? What taxonomies or other structured descriptions of such operations currently exist?

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[1] Discussant: G. Hawkins, Rapporteur: R. Bailey

[2] FM 100-5, Operations, Headquarters, Department of the Army, 14 June 1993.

(3) What are the implications of the differences in (2) on the applicability of existing analysis methods to address the decision issues in (1)? How must these methods be modified? In what areas are completely new approaches and tools needed?

(4) What measures of force capability or effectiveness can be used to describe the ability of a force to conduct PSO? What are reasonable measures of the success of such operations?

(5) What efforts are underway to improve the ability to conduct analysis of PSO?

(6) What analyses of PSO have been conducted that illustrate the use of existing or new methods to address the decision issues in (1)?

The papers included in this session presented a sample of recent efforts to answer some of these questions. The ensuing discussion provided some suggestions for subsequent modeling and analysis efforts.

The four papers that were presented and discussed in the session dealt primarily with qualitative and quantitative analysis of policy issues associated with PSO. (A fifth paper presented in an earlier session of the symposium, "Modeling Force Requirements for Peace Operations" by P.N. Chouinard, was also closely related to the subject of this session.)

(1) THE DANGER OF THE SHOE-HORN - MR. DAVID DAVIS

David Davis opened the session by describing an assessment of the inappropriateness of using traditional combat simulations for modeling PSO. He briefly described alternative modeling and analysis approaches that appear to have some promise for helping decision makers to gain an improved understanding of policy issues concerning operations of these types.

(2) RESOLVING THE WORST ETHNIC CONFLICTS - DR. CHAIM KAUFMANN

In the second paper Chaim Kaufmann argued that the best solution to resolving the worst ethnic conflicts is assisted separation or partitioning, or at least extensive dilution of large minority communities which, in the eyes of the majority, are seen as an ethnic threat to their security. Although not all who participated in the subsequent discussion agreed fully with Kaufmann's conclusions, it was generally agreed that he provided a well-structured argument for his controversial position, and supported it well with historical examples.

(3) TRAINING FOR PEACE SUPPORT OPERATIONS - MR. JOHN MCKINLAY AND LTC JORN OLSEN

In his assessment of training for peace support operations, John McKinlay and Jorn Olsen characterized the requirements for forces needed for such operations and compared the approaches taken by two countries to prepare their forces to participate in PSO. The discussion highlighted the political factors that motivate some countries' participation in these operations.

(4) A DECISION-THEORETIC MODEL FOR THE ASSESSMENT OF PEACE SUPPORT STRATEGIES - DR. REINER HUBER, MR. KLAUS HELLING AND DR. GEORGE MILLER

Finally, Reiner Huber, Klaus Helling and George Miller displayed a parametric set of results obtained by exercising a decision-theoretic model for the assessment of peace support strategies and interpreted these results in the context of the current situation in Bosnia-Herzegovina.

Much of the discussion following each of these papers dealt with the need for an improved capability to conduct quantitative analyses of issues associated with PSO. For example, concerning the applicability of existing models to representing PSO (as raised in the paper by Davis), the discussant argued that there is both bad news and good news; the bad news is even worse than characterized by Davis, while the good news is better. The bad news is that most combat models have serious flaws in their ability to represent such operations because they are based primarily on processes of target acquisition and attrition. In PSO, "target" identification and intention, rather than acquisition, become critical, and different rules of engagement apply. Furthermore, the actions associated with PSO tend to be a large number of small-scale activities that (if the operation is successful) are generally peaceful, rather than the small number of large-scale combat activities generally represented in traditional combat models. On the other hand, the good news lies in the existence of many functional area models of non-combat activities that comprise the bulk of PSO. Many existing models of deployment, transportation, engineer tasks, and some air and naval tasks can probably be adapted to the study of these operations.

However, successful adaptation of existing models to PSO, and the development of new models of such operations, require first that analysts understand in detail the nature of such operations. Aspects of this need were pointed out a number of times in the discussion of the papers: There is a need for a better understanding of the processes comprising PSO in order to model them adequately. There is a need to recognize how the objectives of such operations differ from those of more conventional operations. Discussion of the paper by McKinlay highlighted the need to understand the impact of training in assessing the ability of a force to conduct these types of operations successfully. The use of gaming was recommended as a means to improve our understanding of the complex interactions

associated with PSO, and of the behavior of humans in reacting to these complexities. It was noted in response than some research involving gaming of these operations is currently underway.

The lack of data supporting the quantitative analysis of PSO was also discussed. The need for such data was highlighted in part in the discussion of the paper by Huber and Miller, which resorted to parametric analysis and an assessment of boundary conditions in the absence of data (and the absence of detailed models to generate the data) describing the effectiveness of alternative actions to resolve intranational crises. Two approaches for developing such data were suggested: the collection of field data from ongoing operations, and the generation of "synthetic" data through the simulation of PSO processes. It was noted that efforts are underway to collect field data in Bosnia, and that the activities of both the UN Department of Peacekeeping Operations and the SHAPE Technical Centre to develop lessons learned from past and current PSO should produce data leading to a better understanding of such operations.

Finally, some comments warned of the need to ensure that analyses of PSO have the appropriate focus. It is important, for example, to ensure that policy analyses consider all options available to policy makers, and that these analyses consider the wider implications of the policies being assessed. (These include, for example, the longer-term implications on regional stability of the policy alternatives recommended in Kaufmann's paper.) Perhaps more importantly, the policy-level analysis that was the focus of this session needs to be supplemented with modeling and analysis at the tactical level so as to be able to assess the requirements for and capabilities of specific force structures for conducting PSO.

The overall tone of this session was optimistic: The need to address PSO with quantitative analysis has been acknowledged by the operational analysis community, and work has begun to meet that need. However, it is clear that much work remains. As this work continues, we can hope that subsequent symposia will report that significant progress has been made toward an improved understanding of this important class of military operations.

THE DANGER OF THE SHOE-HORN

D. F. Davis

ABSTRACT

The modelling of peace operations has been a matter of recent research at many universities and national governments. these modelling efforts have been largely attempts to use existing models, simulations, scenarios, and study methods. The use of existing methodology can be explained by both inertia and a desire to minimize expenditures in what might be a passing, risky adventure. This paper will attempt to identify the requirements for a peace operations model, review the existing work, present the sub-optimizations of the 'shoe-horn' methods, and present an alternative approach based on decision theoretic work. A demonstration of the decision theoretic approach will be given using bayesian networks and a model of the US involvement decision for a peace operations on the Golan.

The Danger of the Shoe-Horn

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The Program on Peacekeeping Policy has been in existance since October, 1994. It replaced the Project on Command and Control for Multi-National Peace Support Operations, that began in July, 1992. POPP is directed by Ambassador Walter E. Stadtler and has just added MG (Ret) Indar Jit Rikhye as a Senior Research Associate.

This paper is a continuation of a process that began at the Conferance on Modeling and Simulation at the US Army War College (January, 1995), and continued at the Workshop on Modeling and Simulation, The International Low Intensity Conflict Seminar in Stockholm (March, 1995).

Outline of Talk

- Why should it matter?
- The Nature of Combat Simulations Now
- The Nature of Peace Support Operations
- A Discussion of the differences
- A Scenario for Peace Operations
- A Policy Tool - *Seldon's Game*

This discussion will focus on the military processes.

This discussion will focus on methodology.

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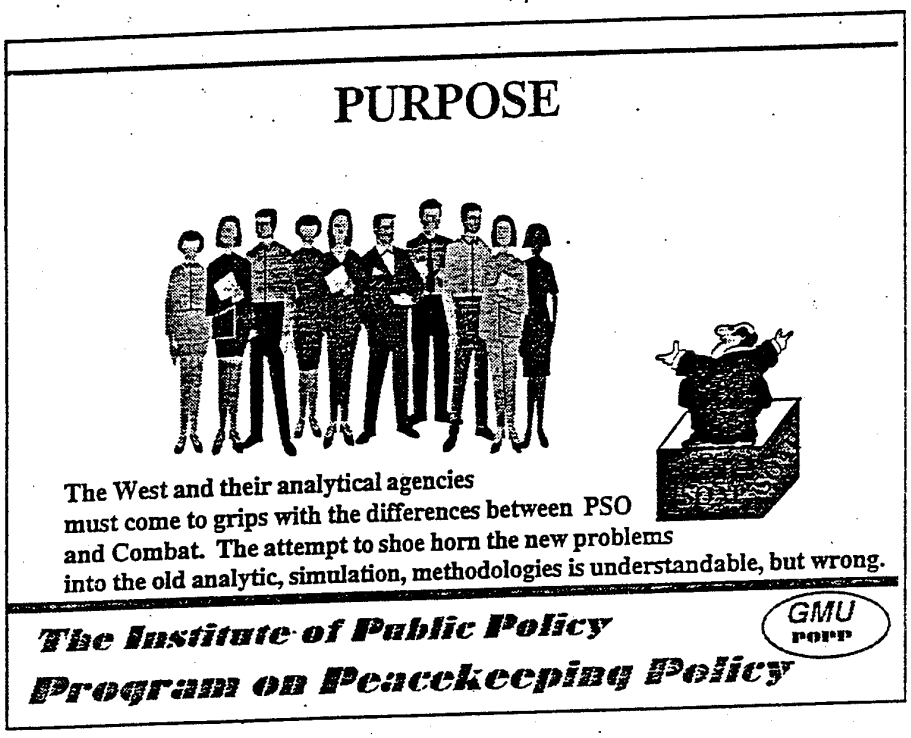
I will approach this presentation by describing the nature of simulated combat processes and the nature of simulatable peace support processes. The similarities of movement and acquisition will be contrasted with the great differences in adjudication processes.

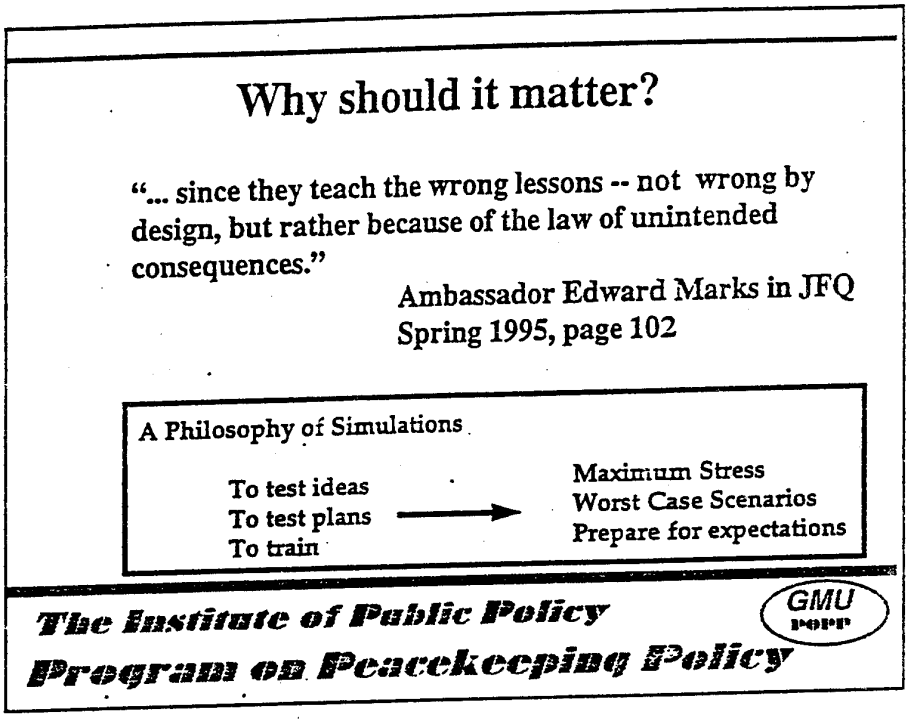
Finally, I will propose another approach using decision theoretic tools.



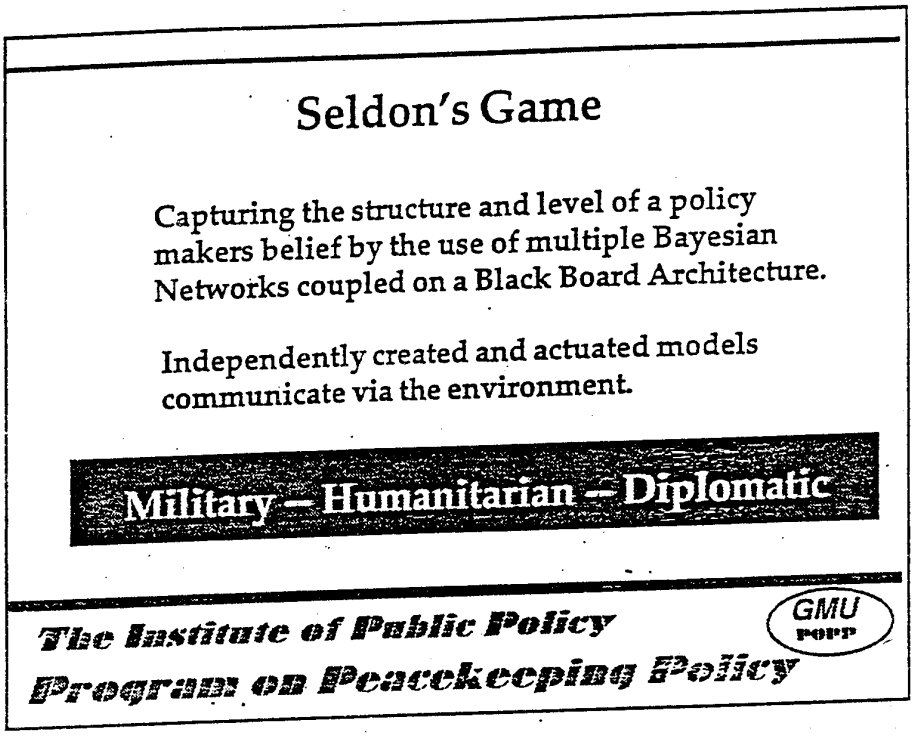
In fact, the drive to use existing simulations is very understandable. They exist, therefore don't cost as much to convert as a new simulation might cost. The analysts are familiar with them and are already quite adept in customizing these tools for many different uses.

The Problem: The functions, processes, and information requirements of Peace Support Operations are different in kind from those of combat operations. This difference in functions and requirements is so extreme as to make any use of the typical worst case scenario approach supported by traditional models, dangerous.

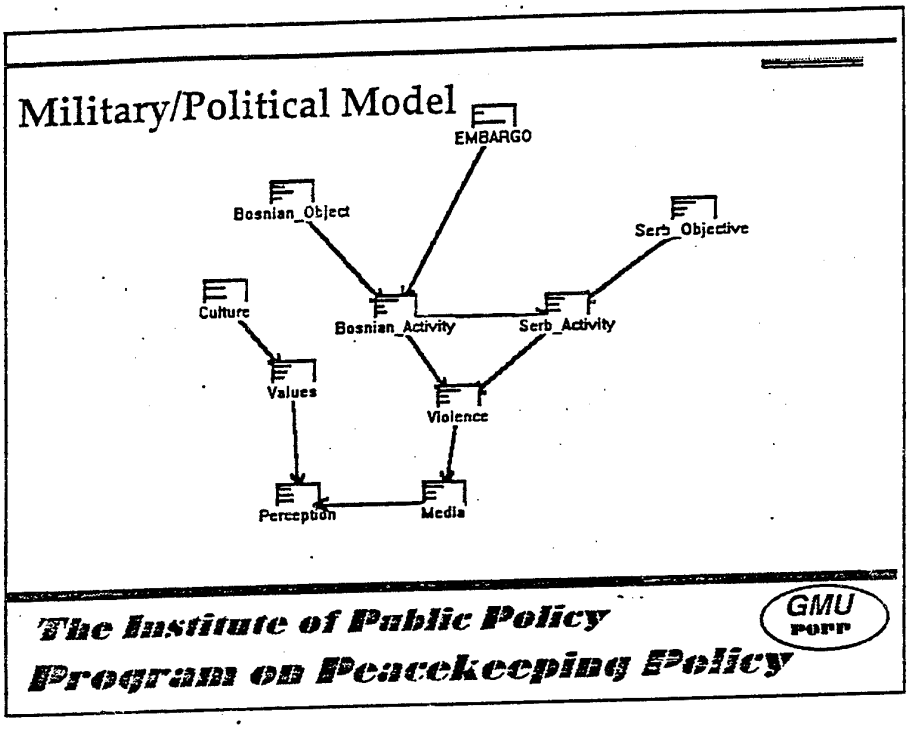
This is not to say, under any interpretation, that the existing suite of models and simulations are no longer of any use. Indeed, much of what is falsly called peacekeeping, such as the operations in Somalia and Yugoslavia, can be modeled using the combat perspective of the existing suite. This inappropriate use of the term 'Peacekeeping' is also at fault.



Simulations are used for multiple purposes, but always because they are expected to save some resource; either time, money, or personnel. These models are used to test new ideas and weapon systems, to rehearse war plans, and to train staffs and soldiers. These uses have caused the standard scenarios to be built so as to include all stresses and expectations. Thus the 'enemy' is always '10 foot tall' with advanced systems, all participants are engaged, and the 'worst case scenario' is used.



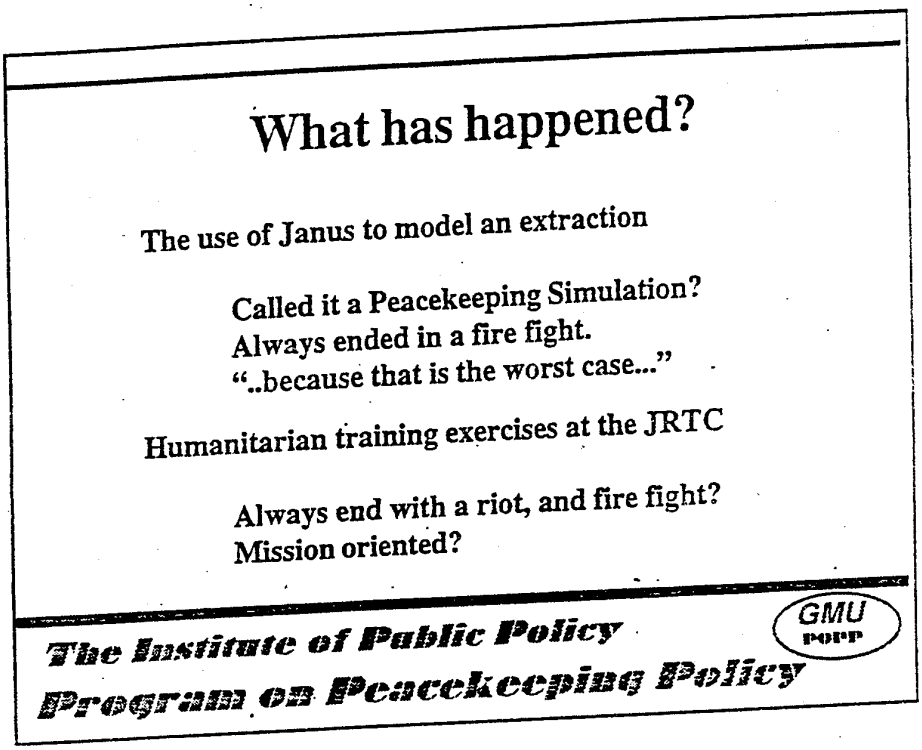
Since these three aspects of peace operations tend to act independently, but in the same environment, it is proposed that multiple Bayesian models be built that will communicate via a blackboard architecture. The blackboard will represent the common environment within which the elements operate.



A simple model of the question of the embargo in Bosnia-Herzegovina. Somewhat out of date in June of 1995. The model attempts to represent the belief that the existance of the embargo and the Bosnians perception of their goal attainment influence their activity. The perception of the Bosnian Serbs goal attainment influences their activity, along with the activity of the non-serbian Bosnians. The joint activiy impact on violence, and for this model, the violence impacts on the media attention. The type of culture of the rest of the world impacts on their values, and the values and media drive the perception.

This model may be played backwards by instantiating the perception and/or media nodes for propagated results.

It is of interest, that no joint instantiation of variables minimizes violence as well as joint perceptions of goal attainment for both parties to the conflict. This is a central tenant of conflict analysis.



These worst case scenarios actually get in the way of understanding or training for peacekeeping. Most, if not all, peacekeeping operations require every effort to avoid the stressful, violent, scenarios. The paradigm shift that needs to be acknowledged is this: In peacekeeping, the scenarios need to present realistic situations based on mostly human reactions. In training, the peacekeepers being trained must see the result of successful engagements and negotiations, and not be trained that all exercises must end in a fight.

This may appear 'blue sky' to some, however it is an element of unasailable knowledge in many armies that you "Train as you fight, and you fight as you train."

The Nature of Combat Simulations Now

- Combat Simulations, either Analytic or Training are designed to represent the processes of a combat action.
  - Movement
  - Acquisition
  - Attrition

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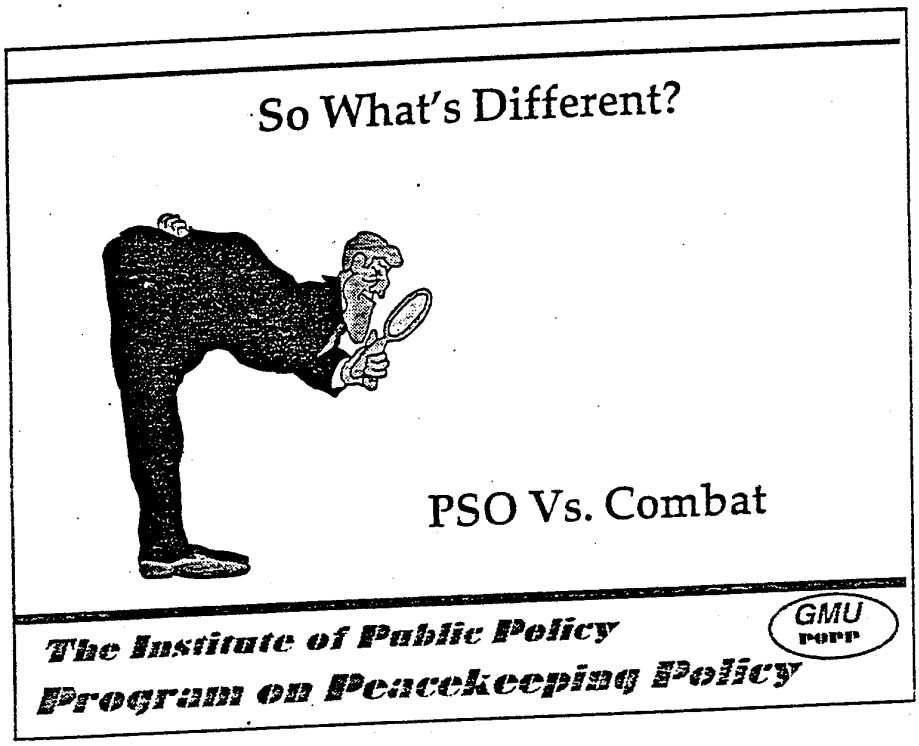
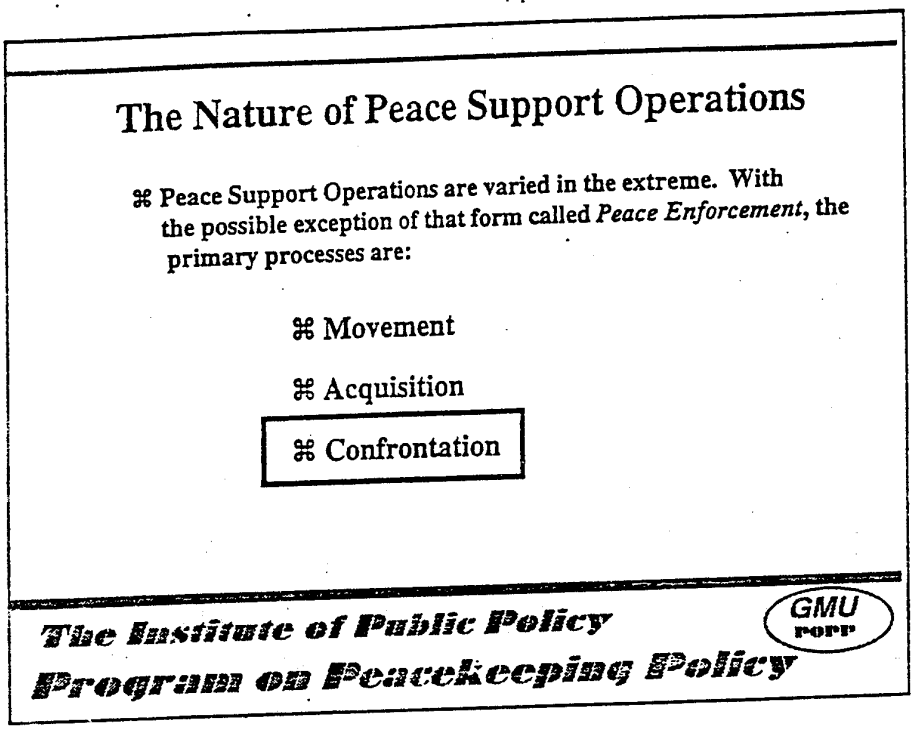
Combat modeling represents the Movement of units and things, the ability of those units of resolution to detect each other, and a resolution methodology. The resolution methodology used in combat is attrition. Combat models are built to represent combat, and combat is attrition - fires driven.

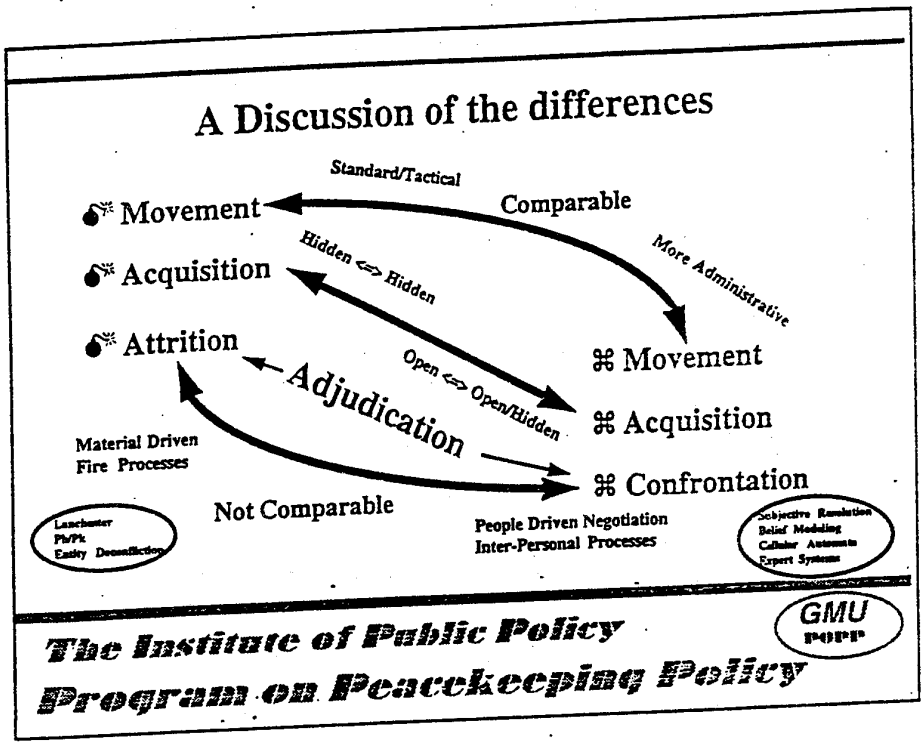


How then can we present a similar structure for Peace Support Operations?

The way to do this is by reviewing the basic definitions currently in place from the varied organizations involved in Peace Support Operations. The next several slides represent a collection of these definitions. As the reader will see, there is no consensus.



So, now after all those definitions, I am ready to present my parallel set of processes to the three processes of combat: Movement Acquisition Attrition. Peace Operations require: Movement, Acquisition, and Confrontation. The management of the confrontation where violence and attrition represent failure, is the significant difference.



Of the three aspects, movement seems to be the most comparable between the combat and peace operations. The simulation must keep track of the position of units, things, people. Units, things, and people all move in accordance with physical laws. Once a vector is known, the movement of a unit can be simulated with ease. Of less similarity is the detection or acquisition processes. These processes are on going in both paradigms, yet the degree to which stealth and avoidance is used differ greatly. Whereas in combat both sides of a sensor-target pair may wish to reduce their signature. In a peace operation, one or the other or both may wish to maximize their signature. The final process of adjudication is the real issue. The three processes interact with movement, detection, and adjudication causing reciprocal actions. Movement will affect detection which would influence adjudication. Firing actions in combat are the result of deceptions which may result in movements. This interaction remains in peace operations, but the adjudication is driven by confrontations which should not result in a firing event.

Confrontation

Confrontations include negotiations and other encounters, that under a peacekeeping mission succeed with no violence. If all confrontations end in a fire fight, the lessons learned are biased!

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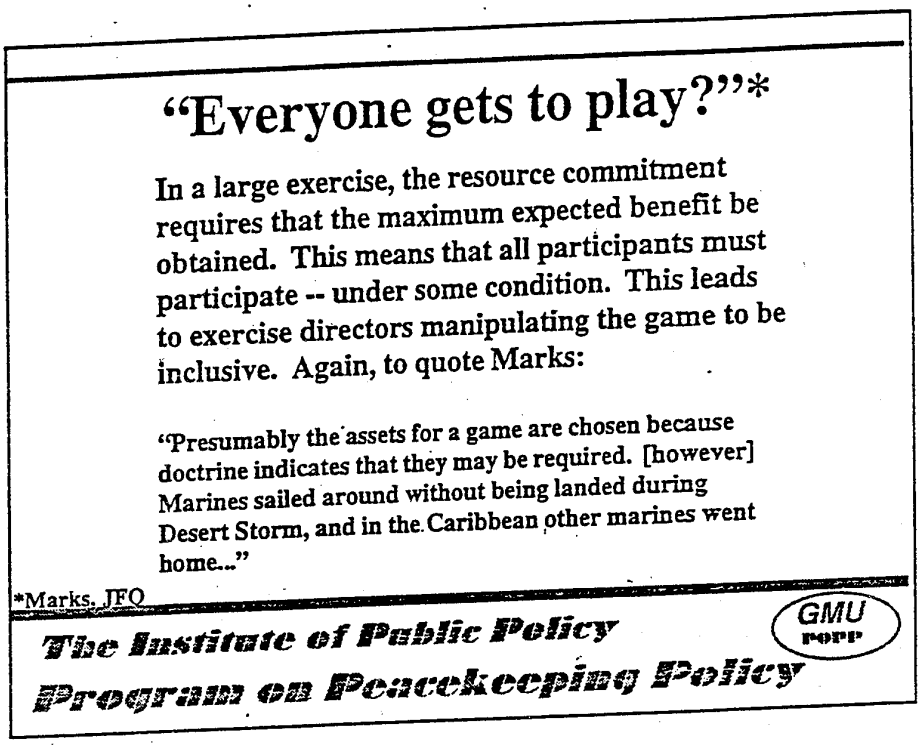

Of a parrellel nature to the comments in the slide, it should be noted that many of the processes that are important to peacekeeping (Inter human interactions, perceptions, infantry movements, ...) are exactly those processes that modern combat modeling has downplayed as secondary, or ignored since they were in the 'too hard' box.

Definitions: US Army*

→ Peace Operations: this is a comprehensive term encompassing observers and monitors, traditional peacekeeping, preventive deployment, security assistance to a civil authority, protection and delivery of humanitarian relief, guaranteeing rights of passage, imposing sanctions, peace enforcement, and any other military, para-military, or non-military action taken in support of diplomatic peacemaking operations.

→ Preventive Diplomacy: These are diplomatic actions, taken in advance of a predictable crises, aimed at removing the sources of conflict before violence erupts, or to limit the spread of violence when it occurs.

→ Peacemaking: this is a process of arranging an end to disputes, and resolving issues that let to conflict, primarily through diplomacy, mediation, negotiation, or other forms of peaceful settlement that may include military peace operations.

* US Army Field Manual 100-23, Draft Version 5, 2 November 1993.

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Peacemaking is one of those terms that is often in contention. To some, peacemaking is the application of diplomatic force -- to others, peacemaking is the application of physical force to cause a peace.

Definitions: US Army, continued

→ Peacekeeping(PK): These are non-combat military operations (exclusive of self-defense), that are undertaken by outside forces with the consent of all major belligerent parties, designed to monitor and facilitate implementation of an existing truce agreement in support of diplomatic efforts to reach a political settlement to the dispute.

→ Peace Enforcement (PE): This is a form of combat, armed intervention, or the physical threat of armed intervention, that is pursuant to international license authorizing the coercive use of military power to compel compliance with international sanctions or resolutions -- the primary purpose of which is the maintenance or restoration of peace under conditions broadly defined by the international community.

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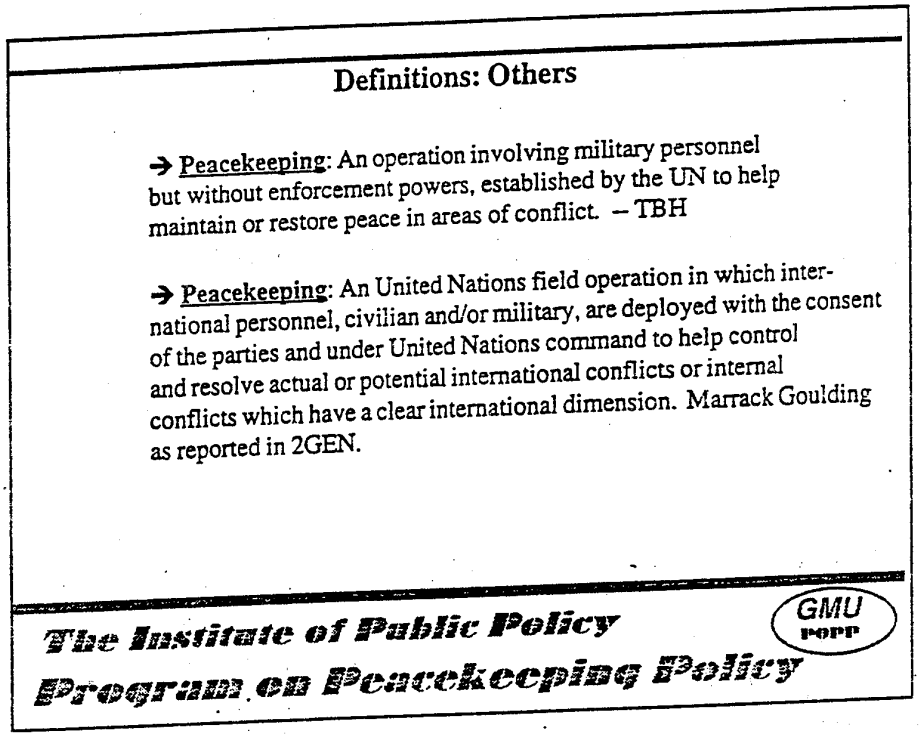
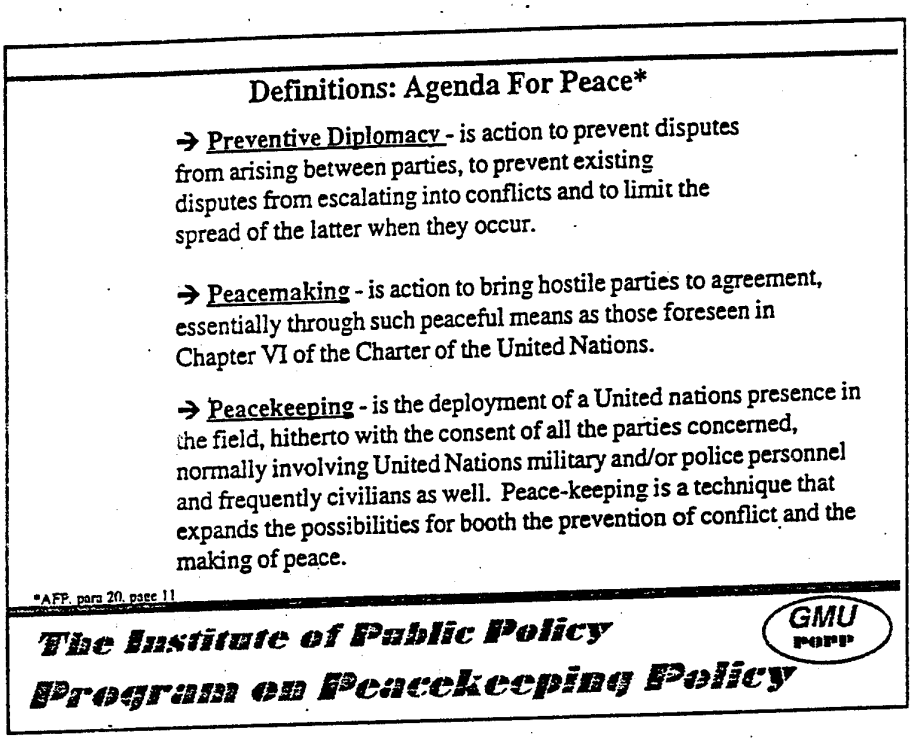
The US Army, not to be out-defined by anyone, has enter into the game. Peacekeeping is ok, Peace Enforcement is marginal, but be careful of the competing definitions of Peace Making, Building, and others.

Definitions: US Army, continued

→ Peace Building: These are post conflict actions to identify and support structures which would strengthen and solidify peace in order to avoid a relapse into conflict. It includes mechanisms to advance a sense of confidence and well-being, and support economic reconstruction, and may require military as well as civilian involvement.



These two just wrap up the list. TBH refers to the The Blue Helmets, and 2Gen refers to the Watson Institute's Second Generation Peace Keeping.



The Secretary Generals Agenda For Peace was an attempt to capture the essence behind all this new stuff. Note the amazing change in the definition of peacekeeping -- the innocuous word: hitherto.

Definitions: Peacekeeper's Handbook, continued

→ Mediation: Effort by a "third party" to assist in the settlement of a conflict between two other parties.

→ Conciliation: An act of pacification through the reconciling of two opposing positions held by the parties to a dispute.

→ Negotiation: Discussions between parties to a conflict directed toward the arrangement of a settlement.

→ International Control of Violence: The prevention, containment, moderation and termination of hostilities between or within states through the medium of third party intervention organized and directed internationally, using multinational military, police and civilian personnel to restore and maintain peace.

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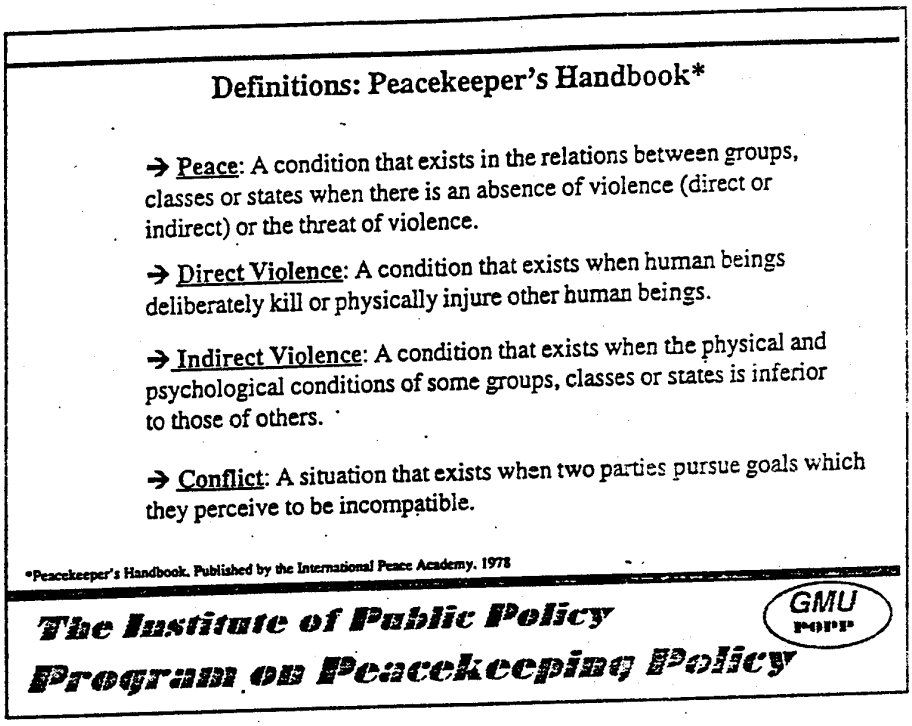
In peacekeeping, as opposed to peace enforcement, the language if full of the terms drawn from conflict resolution.



The IPA takes a very theoretical approach to peacekeeping. As they will say, peacekeeping is a conflict resolution technique using formed military units.

Definitions: Peacekeeper's Handbook, continued

→ Peacekeeping: Synonym for UN sanctioned international control of violence.

→ Peacemaking: An effort to settle a conflict through mediation, negotiation or other forms of peaceful settlement.

→ Peacebuilding: social change that actively seeks to eliminate the likelihood of direct and / or indirect violence.

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A Scenario for Peace Operations

A Peacekeeping scenario is one that explicates the processes and activities of peacekeeping, and not combat. Combat processes are well enough understood, and should be modeled separate from the peace operation.

Operation: Interpositional Observation between two recent combatants. Similar to FYROM, or potentially the GOLAN.

- ☮ The PK observation post notices a possibly embargoed activity and moves to investigate. How?
- ☮ The patrol approaches and confronts the suspects. Why?
- ☮ What are the desired outcomes and how does the patrol effect them?

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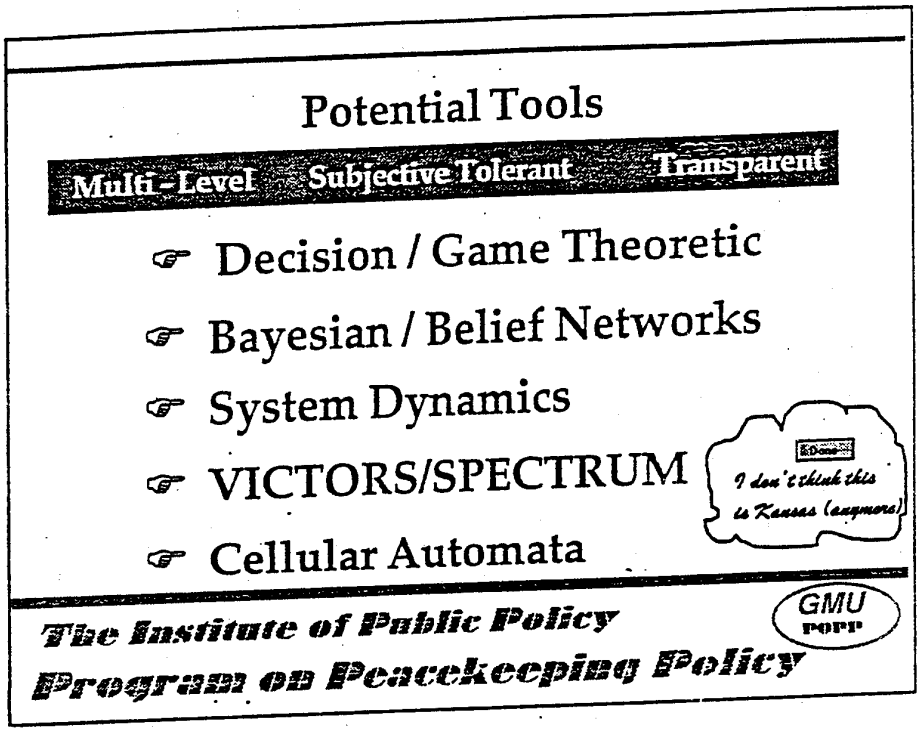
These three questions highlight the differences in combat and peace operations simulation at a tactical level. How the movement occurs, what the patrol uses for detection, and what the end result of the operation is, must be part of the simulation. By using existing simulations and scenario techniques, the analyst is tempted into resolving these situations by ending in a fire fight. The purpose of the fire fight is to ensure that the peace unit is properly prepared for the worst outcome -- defined as the fight. In peace operations, however, this worst outcome is failure. A successful operation under high stress must be modeled to result in no combat, but in the exercise of the peace unit's will.



Multilevel, Subjective Tolerant, Transparent. These are three imperatives of any peace operations simulation.

Multi Level: Peace Ops occur simultaneously at the Strategic and National Levels, The Operational Level of the Force, and the Tactical level of the individual unit. These levels may indeed have the same functions, and should be representable in a single integrated simulation.

Subjective Tolerant: Objective data is rarely available. Therefore these simulations must be able to take as input beliefs, 'I think's, and subjective data in general. This subjective data can be handled with rigor, and should not be ignored.

Transparency: The users of peace modeling must believe what they see. This implies that they should see the processes being modeled.

A Policy Tool

Working from the top down, in the levels of Analysis, the first problem is to decide what the policy should be. A tool that will allow the policy makers and analysts to quickly query the potential futures is needed.

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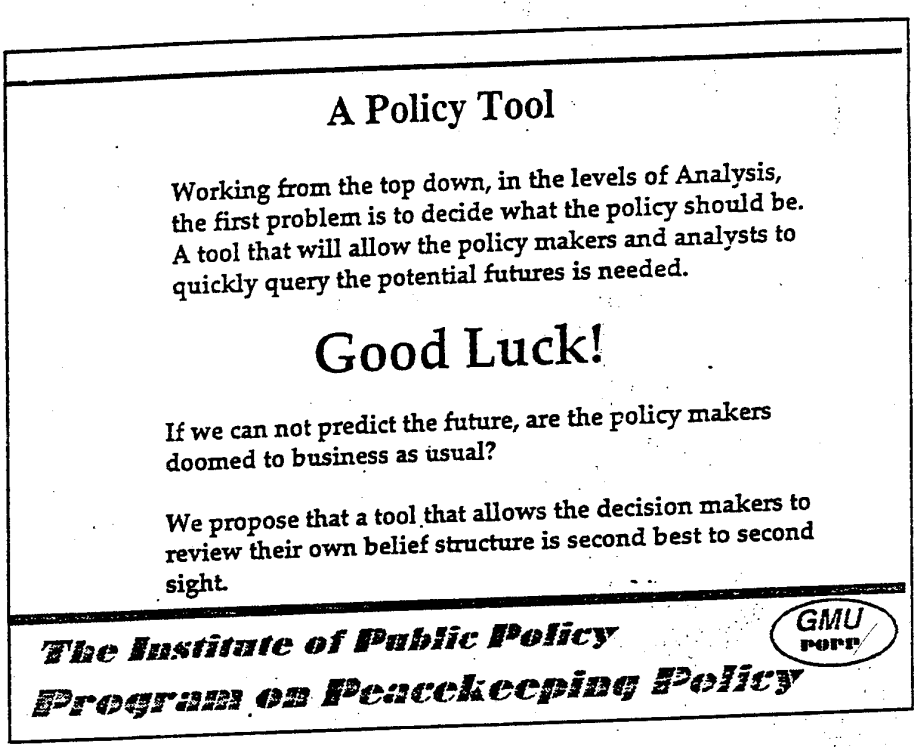
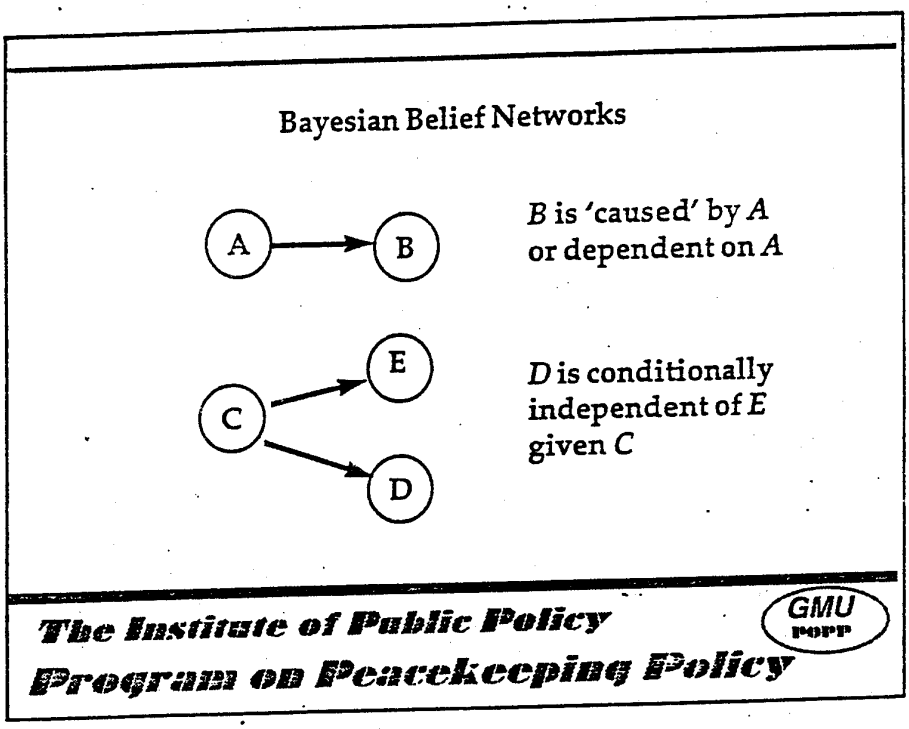
The goal is to predict the future based on actions to be taken

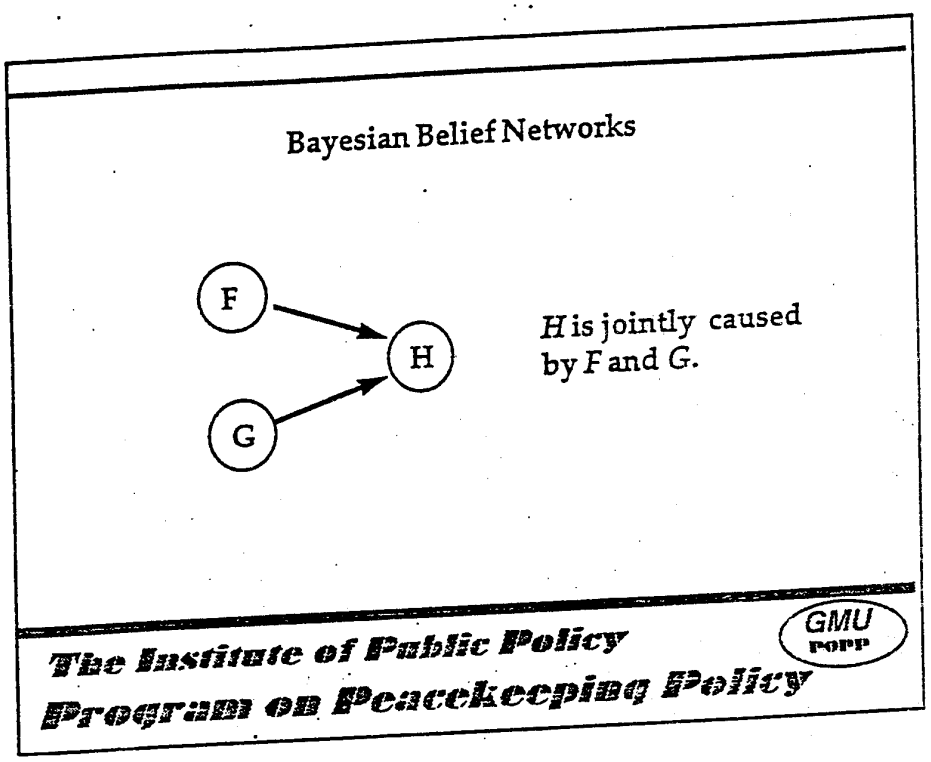


But soothsaying is out of style. So the next best thing is helping the policy maker to understand the process that he or she uses. To understand the consequences of the beliefs of the ones making the decisions. I believe this is actually very close to the origins of computer assisted analysis. The central quote, variously attributed to Dick Hamming or Wilbure Payne, "The purpose of [computing][analysis][simulation] is insight, not numbers." defines this approach.



C is the only cause of D and E. If we did not know C's value, knowledge of D's value would tell us something about C's value and therefor something about E's value. Thus we would not expect E and D to be independent. However, once we know C's value, knowledge of D's value can tell us nothing about C and hence should tell us nothing about E. Accordingly, we would expect D and E to be independent given C.

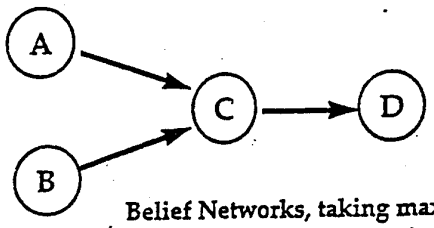
Substitution of variables into explanation by Neapolitan, page 195.



Or, F and G are the parents of H

This system would be completely described by its joint probability distribution.

P(A,B,C,D)



Belief Networks, taking maximum advantage of conditional dependencies and independencies factor this joint.

$P(A,B,C,D)=P(A)P(B)P(C\backslash A,B)P(D\backslash C)$

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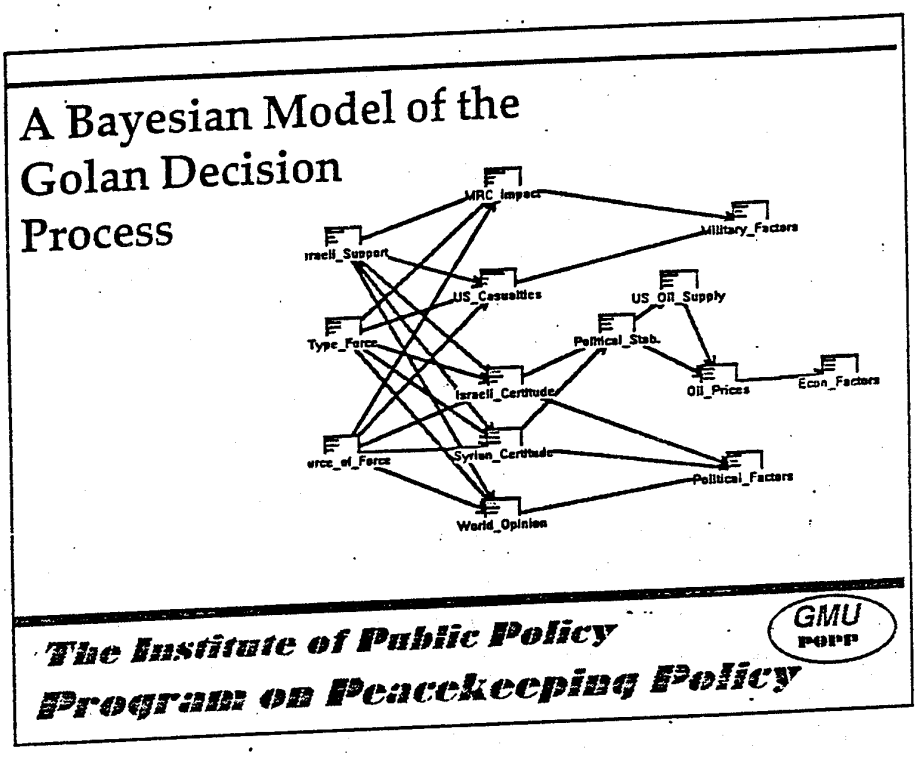
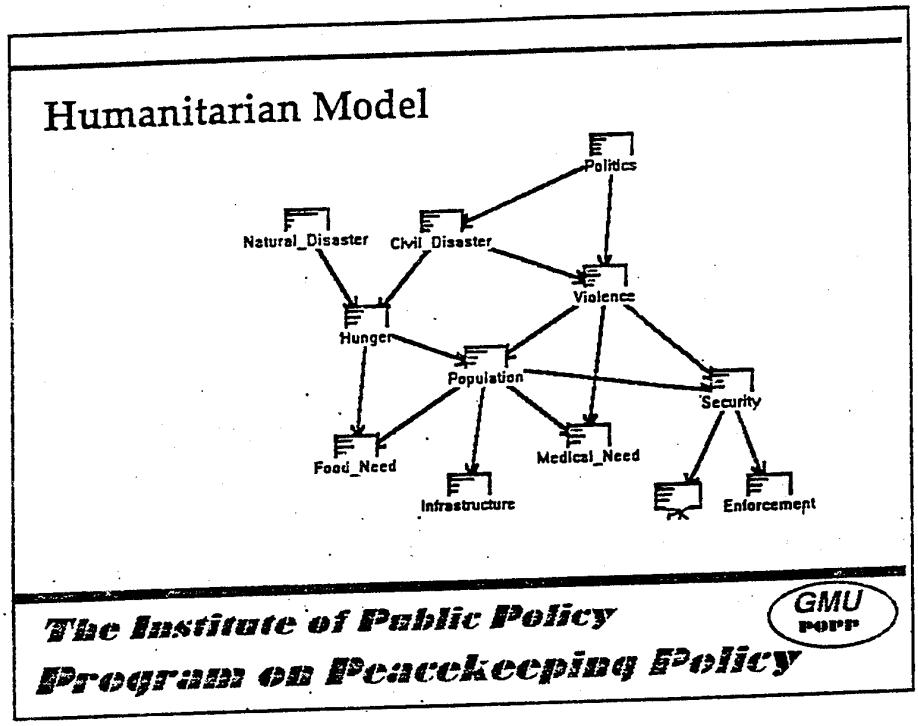
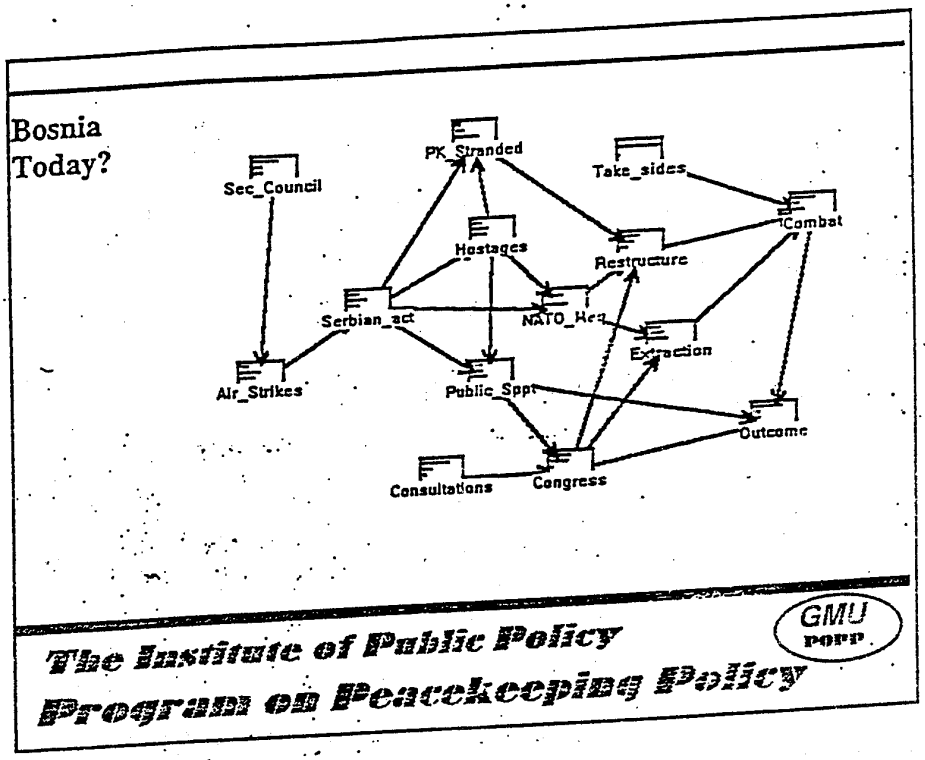
The power of this technique is in the ability to factor the joint probability function in a way that is intuitive to the analyst and the policy maker.



Should the US place troops on the Golan? Maybe yes, maybe no.



A model of humanitarian requirements


Bosnia
Today?
Sec_Council
PK_Stranded
Take_sides
Combat
Hostages
Restructure
Serbian_act
NATO_Hcq
Extraction
Air_Strikes
Public_Sppt
Outcome
Consultations
Congress
GMU
POPP
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RESOLVING THE WORST ETHNIC CONFLICTS POSSIBLE AND IMPOSSIBLE SOLUTIONS TO ETHNIC CIVIL WARS

C. Kaufmann

ABSTRACT

While scholars and policy makers have intensively analysed ways of preventing the deterioration of ethnic rivalries to actual ethnic warfare, we know much less about the conditions under which ethnic wars can be resolved, or how to do it. Neither of the two most promising approaches to ethnic conflict management, identity reconstruction (the Constructivist Model) and power sharing (Consociational Democracy) can help reduce conflict once there has been intense violence because the violence itself creates conditions which ensure their failure.The key barrier to resolution of intense ethnic wars is reduction of inter-ethnic security dilemmas, which are primarily a function of the degree to which population settlement patterns are intermixed. The international community can best save lives and reduce conflict by assisting and protecting population transfers. While not attractive, such transfers can be done safely, and in some cases are the only alternative to allowing the combatant groups to separate themselves through "ethnic cleansing." Transfers may, but need not be, accompanied by partition of sovereignty.

I. INTRODUCTION

Ethnic civil wars are raging in Bosnia, Croatia, Rwanda, Burundi, Angola, Sudan, Turkey, Azerbaijan, Georgia, Tajikistan, Kashmir, Myanmar, and Sri Lanka, and are threatening to break out in dozens of other places throughout the world.[1] Many of these conflicts are so violent, and so much of the violence is directed against unarmed civilians, that they have provoked calls for military intervention to stop them. As yet, however, the international community has done little and achieved less. Preventing ethnic cleansing and genocide has become the core humanitarian problem of our time.[2]

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[1] Ted Robert Gurr, "Peoples Against States: Ethnopolitical Conflict and the Changing World System," International Studies Quarterly 38/3 (Sept. 1994), 347-77, lists fifty current ethnic conflicts of which thirteen have each caused more than 100,000 deaths so far.

[2] Most recent research on ethnic conflict focuses on cases involving relatively low levels of ethnic mobilization and violence, including Ted Hopf, "Managing Soviet Disintegration: A Demand for Behavioral Regimes," International Security 17/1 (Summer 1992), 44-75; Stephen W. Van Evera, "Managing the Eastern Crisis: Preventing War in the Former Soviet Empire," Security Studies 1/3 (Spring 1992), 361-82; Jessica Eve Stern, "Moscow Meltdown: Can Russia Survive?" International Security 18/4 (Spring 1994), 4065. This paper, in contrast, focuses on the most

Three key questions are: can the international community — meaning those major powers with global reach, joined by regional powers in specific cases, whether acting directly or through international institutions — stop ethnic civil wars which threaten genocide? Once the war is stopped, can they permanently dampen the conflict, so that risks of mass murder of civilians will not recur? Can they do this with a finite resource commitment for a finite time?

The answers to all three questions are yes, but only if the international community accepts that, once rivers of blood have flowed, reconstruction of ethnic hatreds into benign fellow feeling is impossible. Recent efforts have failed not only because of indecision and irresolution but also because they have sought to reconstruct ethnically torn societies according to Western political and social norms, transforming ethnic rivalries into "civic" nationalism.

Such approaches are doomed because ethnic war itself destroys the possibilities for ethnic cooperation. The sides' mobilization for self-protection creates both real security threats as well as hypernationalist hysteria which further magnifies perceived threats. Once out, these demons cannot be rebottled. To save lives, the international community must abandon attempts to reconstruct shattered multi-ethnic states; rather, it must facilitate and protect population transfers because the alternative is to let the interahamwe and the chetniks 'cleanse' their enemies in their own way. Sovereignty is secondary: defensible ethnic enclaves reduce violence with or without independent sovereignty; partition without separation does nothing to stop mass killing.[3]

A second barrier to effective action is a widely shared misconception of the nature of ethnic civil wars and the viability of outside military intervention. The conventional wisdom, drawn in large part from experience of ideological insurgencies during the Cold War, especially Vietnam, is that interventions in civil wars usually become endless quagmires from which the do-gooders eventually retreat, leaving the warring sides no better off.[4]

This wisdom is largely right for ideological conflicts but is wrong for ethnic civil wars. The reason is that ethnic identities are much harder than ideological ones. Ideological insurgencies are primarily competitions for the allegiance of the people, in which political

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severe conflicts-- those involving organized large-scale violence, whether by regular forces (Turkish or Iraqi operations against the Kurds) or highly mobilized civilian populations (the interahamwe in Rwanda).

[3] Although ethnic partitions have often been justified on grounds of self-determination, the argument for it here is based purely on humanitarian grounds. The first to make such an argument was John J. Mearsheimer, "Shrink Bosnia to Save It," New York Times, March 31, 1993. For a recent defense of self-determination, see Michael Lind, "In Defense of Liberal Nationalism," Foreign Affairs 73/3 (May/June 1994), 87-99.

[4] While the war in Vietnam was not unwinnable, no one would consider battling irregular forces in difficult terrain easy. This would also be the case in Bosnia." F. Charles Parker, "Vietnam, Bosnia, and the Historical Record," In Depth 3/2 (Spring 1993), 29. "Imposition of a U.N. protectorate on Bosnia [would be] costly, dangerous, [and] uncertain; it would require decades of military and political presence." Dusko Doder, "Yugoslavia: New War, Old Hatreds," Foreign Policy 91 (Summer 1993), 3-23:20.

appeals, together with selective violence based on careful loyalty intelligence, matter more than conventional military force. Intervention forces often find it impossible to tell friend from foe, while indiscriminate use of their heavy firepower often simply creates more foes. In ethnic wars there is no competition for loyalties, since everyone's loyalty is fixed by birth. Outcomes are decided primarily by force, which is what interveners can best supply.

The final question is whether the international community will be willing to accept costs to prevent genocide. This seems doubtful, since the willingness of Western publics to pay for anything beyond their own immediate security or economic interests has recently been low.[5] In addition, partition and population transfers are dirty words in most policy as well as scholarly circles. They contradict cherished Western values of social integration, trample on the international legal norm of state sovereignty, and imply particular policies which have been anathema to most of the world (e.g., Turkey's unilateral partition of Cyprus).

Perhaps realization that ethnic separation can save lives, while its more 'politically correct' alternatives cannot, might encourage Westerners to try. If not, Westerners at least owe a duty to the victims of ethnic wars not to hold out false hopes based on comfortable fallacies.

The remainder of this paper has four parts. Part II explains how ethnic and ideological civil wars differ and the implications of these differences for the feasibility and decisiveness of outside military intervention. Part III considers whether outside intervention can cause lasting safety for threatened ethnic groups. Four alternatives are considered: reconstruction of ethnic identities, power-sharing, state-building, and separation. Of these, only separation is viable. The fourth considers possible objections, while the conclusion addresses the moral and political stakes in intervention.

II. ETHNIC VERSUS IDEOLOGICAL CIVIL WARS

Ideological and ethnic conflicts have very different dynamics, which imply profound differences in the determinants of victory, the instruments and strategies of conflict, and the viability of foreign intervention.[6]

The key difference is the importance of individual loyalties. Ideological conflicts are competitions between the government and the rebels for the loyalties of the people. Victory

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[5] Non-humanitarian motives for intervention have been suggested in certain cases. Wealthy countries, as well as neighboring states, are concerned about absorbing refugee flows. Neighboring states may also be motivated by apparent national security threats or by ethnic affinity with one side in a conflict.

[6] Religious conflicts between confessions which see themselves as separate communities (e.g., Catholics vs. Protestants in Northern Ireland) resemble ethnic conflicts, while those within a single community over interpretation of a shared religion (e.g., disputes over the social role of Islam in Iran, Algeria, Egypt) are best categorized with ideological contests. On religious differences as ethnic divisions, see Lijphart, "The Power-Sharing Approach," in Montville, Conflict and Peacemaking in Multiethnic Societies, 491-509:491.

depends on building political support while undermining support for the other side. In ethnic conflicts, by contrast, there is no loyalty competition. While not everyone may be mobilized as an active fighter for their own group, hardly anyone ever fights for the opposing ethnic group. Almost everything else about both types of conflicts flows from this fact:[7]

II.A. IDEOLOGICAL CONFLICTS.

The basic dynamics of ideological civil wars are fairly well understood. Although both sides use force, the contest is primarily a political one. To win, each side must gain the "hearts and minds" of the population while undermining political support for the enemy.[8] Both sides employ three main strategies to win over the population. In descending order of importance, these are: 1) political, economic, and social programs; 2) population control; and 3) military action.

	Relative Importance of:	
Strategies	Ideological	Ethnic
Political & Economic Programs	First	Last
Population Control	Second	Second
Military Action	Last	First
Determinants of Victory		
Local Competence	Decisive	Important
Foreign Assistance	Marginal	Decisive

[7] While the discussion below delineates ideal types, mixed cases occur. The key distinction is the extent to which mobilization appeals are based on race or confession (ethnic) rather than on political, economic, or social ideals (ideological). In the Malayan Emergency of 1948-1960 the communists drew 90% of their support from ethnic Chinese, but both the British and the communists, for their own reasons, emphasized ideology over ethnicity in their rhetoric and, for the most part, in their operational methods and recruitment appeals. Julian Paget, Counter-Insurgency Campaigning (London: Faber and Faber, 1967), 43-78. During the Cold War a number of Third World ethnic conflicts were misidentified by the superpowers as ideological struggles because local groups stressed ideology to gain outside support. In Angola the MPLA drew their support mainly from the coastal Kimbundu tribe, the FNLA from the Bakongo in the North, and UNITA from Ovimbundu, Chokwe, and Ngangela in the interior and the South. Daniel S. Papp, "The Angolan Civil War and Namibia," in David R. Smock, ed., Making War and Waging Peace: Foreign Intervention in Africa (Washington, D.C.: U.S. Institute of Peace, 1993), 161-96.

[8] Landmarks in counterinsurgency include Nathan Leites and Charles Wolf, Jr., Rebellion and Authority: An Analytic Essay on Insurgent Conflicts(Chicago: Markham, 1970); Douglas S. Blaufarb, The Counterinsurgency Era: U.S. Doctrine and Performance, 1950 to the Present (N.Y.: Free Press, 1977); Andrew F. Krepinevich Jr., The Army and Vietnam (Baltimore: Johns Hopkins University Press, 1986); D. Michael Shafer, Deadly Paradigms: The Failure of U.S. Counterinsurgency Policy (Princeton, N.J.: Princeton University Press, 1988). David C. Isby, Russia's War in Afghanistan (London: Osprey, 1986), says that the Soviets came to much the same conclusions.

Political and Economic Programs. Political, social, and economic reform is the most important strategy for both the government and the insurgents. The most important issues are usually local grievances such as poverty, inequality, corruption, and physical insecurity. The rebels typically promise redistribution, such as land reform, political enfranchisement for the excluded, and honest, responsive government. The popular appeal of the government too depends on providing essentially the same things: land reform, real democracy, and uncorrupt "good government." In addition, if resources (often foreign aid) are available, the government may offer development assistance, seeking to increase the pie for everyone as a way of defusing the fairness issue. The side which is better able to deliver, or credibly promise, such reforms and benefits usually wins.

Population Control. Controlling access to the population matters because political and economic programs can only win support if actually implemented, and because the population is the shared mobilization base for both sides. The insurgents especially depend on the people for food, shelter, money, and recruits; as Mao said, "guerrillas are like fish and the people are the water they swim in."[9] Territorial control does not guarantee population control because individual loyalties are both difficult to assess and changeable. If loyalties were known, control of territory and of population would be equivalent since the disloyal could be jailed, expelled, or killed.

Lacking perfect intelligence, both sides must resort to bribery, terror, and assassination, but these are risky because innocent victims generate anger, mobilizing survivors, relatives, and neighbors for the enemy. Individual freedom of association may also be controlled through internal passports or by relocating people from settlements seen as vulnerable to penetration to more defensible towns, although relocation can be politically damaging if it is seen as arbitrary and disruptive.[10]

Military Action. This is the least important strategy, because territorial control is not decisive, and because excessive force employment is often counterproductive. A classical insurgency follows Mao's three stage plan. First, the insurgents form a party to agitate and recruit among the population. Second, beginning in remote, inaccessible areas, the rebels use guerrilla operations to frustrate government forces, create liberated base areas, and build up their forces. Finally, once rebel forces are strong and government forces have been gutted by defections and morale collapse, the insurgents go on the offensive and conquer the country."[11]

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[9] Quoted in Shafer, 21.

[10] Relocation was effective against insurgents in the Malayan Emergency and Huk Rebellion, but the 'Strategic Hamlet' program in Vietnam was a failure. John Maynard Dow, Nation Building in Southeast Asia, rev. ed. (Boulder, Colo.: Pruett Press, 1966).

[11] Krepinevich, 7-10, citing Katzenbach and Hanrahan in PSQ, 1955.

Conventionalizing the conflict too soon forfeits the guerrillas' mobility advantage, allowing the stronger government forces to engage and destroy the insurgents.[12]

The government usually begins with much greater military resources but intensive operations ("search and destroy" missions) may actually strengthen the rebels politically, because they inflict collateral damage on civilians which alienates them from the government side. In addition, simply inflicting attrition on the guerrilla forces may do little good; if their base of political support is undamaged, losses will be replaced by new recruits.[13] The government does need a minimum level of force to protect population and administrative centers, but offensive operations should be limited, designed to occupy the guerrillas' effort in evasion or defense and inhibit their ability to recruit or act offensively.[14]

The crucial variable is political support. As long as the government commands enough loyalty to recruit reliable forces, the insurgents cannot approach military parity, but if the political struggle is lost, the government will collapse like a house of cards. Conversely, too much force can do more harm than good, and if the strategies mentioned above are successful the guerrillas will eventually wither away.

Political Competence. The main determinant of victory in ideological conflicts is relative political competence, meaning the degree to which each sides leadership is committed, uncorrupt, and disciplined, as well as whether it commands sufficient loyalty and obedience from subordinate institutions and agents that its strategy can actually be carried out.

Competence determines the success of political and economic programs. Rebels must offer solutions to local grievances, not global ideologies,[15] while the government must overcome entrenched anti-reform interests, and both must command the obedience of uncorrupt agents in the field. Competence also determines the effectiveness of population control, which depends on accurate intelligence, selectivity, and discipline. Local officials/ revolutionary cadres must not use assassination to settle private scores,[16] while relocation

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12 This mistake was made by the rebels in the Greek Civil War, by the communists early in the Malayan insurgency, and by the North Vietnamese in 1972. Paget, 48, 54-55; John O. Iatrides, "The Doomed Revolution: Communist Insurgency in Postwar Greece," in Roy A. Licklider, ed., Stopping the Killing: How Civil Wars End (New York: New York University Press, 1993), 205-34:214-15.

13 "Winning a military war in Vietnam will be a hollow victory if the country remains politically and economically unstable, for it is under these conditions that a 'defeated' Viet Cong will be able to regroup and begin anew a 'war of national liberation'-- Dow, Nation Building, viii.

14 Where an interstate war parallels or supports an ideological insurgency, as in Vietnam, the government will require stronger conventional forces.

15 Note to self: Get cities on Mao, Giap, Asian student rebellions of early 50s, Che.

16 During the Vietnam War Viet Cong forces in one area sought to undermine a U.S.-sponsored inoculation program by hacking off the arms of the children who had been treated. The central V.C. leadership, realizing that this barbarity risked alienating all those who heard of it, ordered it stopped, and were obeyed. On the government

schemes will fail if troops brutalize relocatees and officials steal resources needed to develop and defend the new towns. Finally, lack of competence will undermine military operations if corrupt officers steal their mens' pay or supplies or disloyal ones engage in warlordism.

Political competence is more important than initial popularity or legitimacy. A competent side can carry out programs which will improve its legitimacy, while an incompetent one will inevitably lose what legitimacy it initially possessed.[17] Perhaps most important, competence is not fungible. No amount of outside aid can substitute for local incompetence and corruption.

Outside Support. Outside support has limited potential in ideological conflicts. Any foreign aid makes the side which receives it vulnerable to accusations of being a tool of foreign interests, and the greater the aid the more plausible the charge.[18]

Economic support for the government can underwrite development programs and possibly smooth resistance to redistribution. However, aid is vulnerable to being distorted by corruption, and beyond some limit risks transforming the entire economy into a de facto welfare scheme.[19] The rebels, who generally do not control much of the economy, can benefit little from economic aid.

Military aid is even more constrained. The insurgents can absorb only limited weaponry without becoming a conventional military force, providing the government a lucrative target. Weak insurgents can benefit from provision of sanctuary base areas outside the country. The government can absorb more materiel than the insurgents, but underwriting too many high firepower heavy combat units only encourages large-scale offensive operations, which may do more to damage the government's political position than to improve it.

Direct military intervention is most problematic of all. The critical problem is intelligence. Outside forces generally cannot distinguish local friends from foes, and if the government has been penetrated by the rebels they will not be able to trust their guides either.[20] As a result they tend to rely increasingly on sheer firepower, in effect treating all locals as enemies. This results in tremendous collateral damage and great numbers of refugees, destroying the legitimacy of the supported government.

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side, the Phoenix Program demonstrated both how damaging government terror can be to insurgents as well as the difficulty of maintaining discipline. Douglas Valentine, The Phoenix Program (New York: William Morrow, 1990).

[17] Leites and Wolf, Rebellion and Authority, argue that it is possible for insurgents to win with an inherently unattractive ideology and little political legitimacy if they are disciplined enough.

[18] William E. Odom, On Internal War (Durham: Duke University Press, 1992), 58.

[19] Odom, 60-61.

[20] In addition, professional militaries are usually not willing to employ some of the best collection techniques (i.e., torture) because they violate the laws of war.

Only in the final stage, when the government's political support has evaporated, can the rebels profitably absorb the heavy equipment needed to achieve military superiority. Conversely, a strong intervention force can prop up an incompetent regime as long as it remains, but the government may fall as soon as it departs.[21]

Conclusion: Limited Scope for Foreign Intervention. The possibilities for foreign intervention in ideological insurgencies are limited, because everything depends on the political competence of the insurgents and of the regime. 500,000 high-tech superpower troops won't change the ultimate outcome if the government is totally incompetent (Vietnam), while small dollops of arms, money, and technical advice can be enough if the government is competent (the Huk rebellion in the Philippines) or if the rebels are not (Greece).[22]

II.B. HOW ETHNIC CONFLICT IS DIFFERENT[23]

The dynamics of ethnic civil wars have been less studied than ideological insurgencies, and are not well understood. Nor are the two types of conflicts at all similar. Competition for "hearts" and minds" is irrelevant, while intelligence presents few problems because loyalties can be gauged by ethnicity. Ethnic conflicts are primarily military struggles; victory can be assured only by physical control over the territory in dispute.[24] In principle, the sides in an ethnic civil war can employ the same three strategies as in ideological insurgency, but their relative importance is reversed: military action is most important, population control second, and political or economic programs least.

Political and Economic Programs. In ethnic civil wars, political and economic programs designed to win people's loyalties are beside the point, because there is no contest for loyalty. Promising democracy, efficient government, or economic development will not

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21 Even though the South Vietnamese government was expanding its territorial control in the early 1970s, it remained so corrupt that many soldiers were not paid, and so did not fight in 1975. Guenther Lewy, America in Vietnam (New York: Oxford University Press, 1978), 209-210.

22 Italian and German aid strengthened the Nationalists in the Spanish Civil War, but it is unclear that this helped them more than did the political wrangling and shortage of military skills among the Republicans. Check Wyden, The Passionate War.

23 An ethnic group (or nation) can be defined as a body of individuals who purportedly share cultural or racial characteristics which distinguish them from members of other groups. For standard definitions, see Max Weber, ed. Guenther Roth and Claus Wittich, Economy and Society: An Outline of Interpretive Sociology, vol. 1 (Berkeley, Calif.: University of California Press, 1968), 389, 395; Ernest Gellner, Nations and Nationalism (Ithaca, N.Y.: Cornell University Press, 1983), 7; Anthony D. Smith, National Identity (Reno: University of Nevada Press, 1991), 14, 21.

24 Also unlike ideological insurgencies, the conflict is symmetric. Control of assets of the state matters to the extent that it shifts the military balance. Access to the military assets of the former governments helped the military prospects of the Bosnian Serbs and of the Russians in Moldova, while the Rwandan Patriotic Front gained military experience and equipment through involvement in Ugandan internal conflicts.

attract members of the other community, nor will failure to do so cause defections from one's own community. At most programs might make a marginal difference in mobilizing one's own group or in retarding enemy mobilization.

Loyalties cannot be swayed because ethnic identities are fixed by birth.[25] Identity categories imply their own membership rules. Ideological identity is relatively soft, as it is a matter of individual belief, sometimes of political behavior. Religious identities are harder because, while they also depend on belief, change generally requires formal acceptance, which may be denied. Ethnic identities are hardest, since they depend on language, culture, and religion, which are hard to change, as well as parentage, which no one can change.[26]

Ethnic identities are hardened further by intense conflict, so that leaders cannot broaden their appeals to include members of opposing groups.[27] First, as ethnic conflicts escalate, populations come increasingly to hold enemy images of the other group, either because of deliberate efforts by elites to create such images or because of increasing real threats. Henri Barkey reports that the intensification of the war in Southeastern Turkey has

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[25] Constructivist scholars of nationalism would not agree, as they argue that ethnic identities are flexible social constructions, which can be manipulated by political entrepreneurs and more or less freely adopted or ignored by individuals. Important works include Paul R. Brass, Language, Religion, and Politics in North India (Cambridge, England: Cambridge University Press, 1974); Crawford Young, The Politics of Cultural Pluralism (Madison: University of Wisconsin Press, 1976); Benedict Anderson, Imagined Communities: Reflections on the Origins and Spread of Nationalism (London: Verso, 1983). Primordialists, by contrast, see ethnic identities as rigidly fixed by linguistic, racial, or religious background. See Edward Shils, "Primordial, Personal, and Sacred Ties," British Journal of Sociology 8 (1957), 130-45; Clifford Geertz, "The Integrative Revolution: Primordial Sentiments and Civil Politics in the New States," in Geertz, ed., Old Societies and New States (New York: Free Press, 1963); Daniel Bell, "Ethnicity and Social Change," in Nathan Glazer and Daniel P. Moynihan, beds., Ethnicity: Theory and Experience (Cambridge, Mass.: Harvard University Press, 1975), 14174. A middle position, "perennialist,-- accepts that identities are social constructs but argues that their deep cultural and psychological roots make them extremely persistent, especially in literate cultures. See Smith, National Identity; Walker Connor, Ethnonationalism: The Quest for Understanding (Princeton, N.J.: Princeton University Press, 1994). In this paper I do not take a position on the initial sources of ethnic identities or on their malleability under conditions of low conflict, but argue that massive ethnic violence creates conditions which solidify both ethnic boundaries and inter ethnic hostility.

[26] High levels of intermarriage which produce children of mixed parentage could blur ethnic boundaries, but even levels of ethnic tension far short of war inhibit this. In Northern Ireland in the 1960s and 1970s Catholic-Protestant intermarriage averaged 3-4 per cent. In Yugoslavia intermarriage rose in 1950s and 1960s, fell in 1966-69 during a period of ethnic tension, then rose again, and finally declined after 1981 as ethnic tensions increased. Especially in divided societies, ethnic identity rules often account for children of mixed marriages. In Northern Ireland nearly all wives convert to her husband's church. In Rwanda, Hutu or Tutsi identity is inherited from the father. John H. Whyte, "How is the Boundary Maintained between the Two Communities in Northern Ireland?" Ethnic and Racial Studies 9/2 (April 1986), 219-33; Ruza Petrovic, "The Ethnic Identity of Parents and Children," Yugoslavia Survey 32/2 (1991), 63-76:64; Alain Destexche, "The Third Genocide," Foreign Policy 97 (Winter 1994-95), 3-17:6. Check Frederick Barth, Ethnic Groups and Boundaries (Boston: Little, Brown, 1969).

[27] This does not occur in ideological civil wars, where most people (except leaders whose commitments are famous) can easily and quickly shift affiliations, although shifts may be coerced as often as responses to positive appeals.

led the Turkish public more and more to identify all Kurds with the PKK guerrillas, while even assimilated Kurds increasingly see the war as a struggle for survival.[28] Once the conflict reaches the level of large-scale violence, tales of atrocities — true or invented — perpetrated against members of the group by the ethnic enemy provide hard-liners with an additional, unanswerable argument.[29] In these circumstances, conciliation is easy to denounce as dangerous to group security or as actually traitorous. Nationalist extremists overthrew President Makarios of Cyprus in 1974, assassinated Mahatma Gandhi in 1948, and massacred nearly the whole government of Rwanda in 1994.[30]

Second, cross-ethnic appeals are not likely to attract members of the other group, because they too have enemy images of the first group. During World War II, the Yugoslav Partisans sought to transcend the ethnic conflict between Croatian Ustasha and the Serbian Chetniks with an anti-German, pan-Yogoslav program. It didn't work. While Tito was a Croat, Partisan officers as well as the rank and file were virtually all Serbs and Montenegrins.[31] Only in 1944, when German withdrawal made Partisan victory certain, did Croats begin to join the Partisans in numbers, not because they preferred a multiethnic Yugoslavia to a Greater Croatia but because they preferred a multiethnic Yugoslavia to a Yugoslavia cleansed of Croatians.

In both Laos and Thailand in the 1960s, the hill people (Hmong) fought the lowland people (the Laos and Thais are related), although under opposite ideological banners on opposite sides of the Mekong River. The ideological identifications were purely tactical; most of the Hmong in Laos lived in areas dominated by the communist Pathet Lao and so turned to the U.S. for support, while those rebelling against the pro-U.S. Thai government turned to the Communist Party of Thailand. Although in both countries both communists and anti -communists offered political reform and economic development, cross-ethnic recruitment

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[28] Barkey, "Turkey's Kurdish Dilemma," Survival 35/4 (Winter 1993-94), 5170:57-58.

[29] In July 1992, amidst large-scale rape of Bosnian Muslim women by Serb forces, Bosnian Serbs accused Muslims of kidnapping Serb women and impregnating them in order to create a new race of janissary soldiers. Roy Gutman, A Witness to Genocide (New York: Macmillan, 1993), x.

[30] In 1992 the leader of the Croatian Democratic Union in Bosnia was dismissed on the ground that he "was too much Bosnian, too little Croat." Balkan War Report, Feb./Mar. 1993, 14, quoted in Robert M. Hayden, "The partition of Bosnia and Herzegovina, 1990-1993," RFE/RL Research Reports 2/22 (May 29, 1993), 2-3. Cf. Fred C. Ikle, Every War Must End (New York: Columbia University Press, 1981), on the problems of soft-liners in international wars.

[31] Partisan (as well as Chetnik) leaders were recruited mainly from pre-war Army officers. Throughout most of 1942, the Partisans fielded 2 Montenegrin and 4 Serbian battalions, leavened with just a few fighters of other nationalities. A. Pavelic, "How Many Non-Serbian Generals in 1941?" East European Quarterly 16/4 (Jan. 1983), 447-52; Anton Bebler, "Political Pluralism and the Yugoslav Professional Military," in Jim Seroka and Vukasin Pavlovic, eds., The Tragedy of Yugoslavia: The Failure of Democratic Transformation (Armonk, N.Y.: M. E. Sharpe, 1992), 105-40:106.

bore little fruit, and the outcomes of the rebellions were determined mainly by strictly military operations.[32]

At the same time, individual choice also largely disappears.[33] Even those who put little value on their ethnic identity are pressed towards ethnic mobilization for two reasons. First, extremists within each community are likely to impose sanctions on those who do not contribute to the cause.[34] Second and more important, identity is often imposed by the opposing group, specifically by its most murderous members. Assimilation or political passivity did no good for German Jews, Rwandan Tutsis, or Azerbaijanis in Nagorno-Karabakh. A Bosnian Muslim schoolteacher recently lamented that:

> We never, until the war, thought of ourselves as Muslims. We were Yugoslavs. But when we began to be murdered, because we are Muslims, things changed. The definition of who we are today has been determined by our killers.[35]

The result is that in ethnic wars appeals to the other group are largely irrelevant. Even if one side promises safety and fair treatment, few of another group are likely to believe such appeals, and fewer still to make political choices based on them. The wide gap in ethnic brutality between the Muslim and Serb sides in Bosnia has not prevented the Bosnian Serbs from mobilizing most ethnic Serbs. Similarly, in mid-1994 Tutsi appeals to displaced Hutus to return home — backed at the time by U.N. spokesmen — made no impact on exiled government, army, or militia leaders, and fared poorly in competition for the attention of Hutu masses with coercion by ultranationalists and the hysterical warnings of Radio Milles Collines.[36]

Population Control. Unlike ideological conflicts, in ethnic wars there is no problem of loyalty intelligence. Even if some members of both groups remain unmobilized, as long as virtually none actively support the other group, each side can treat all of its own co-ethnics as

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[32] Because of pre-existing clan rivalries, some Hmong in Laos fought on the Pathet Lao side. R. Sean Randolph and W. Scott Thompson, Thai Insurgency: Contemporary Developments (Beverly Hills, Calif.: Sage Publications, 1981), 17; Blaufarb, The Counterinsurgency Era, 128-204; T. A. Marks, "The Meo Hill Tribe Problem in Northern Thailand," Asian Survey (Oct. 1973).

[33] The proportion of Yugoslav residents identifying themselves not by nationality but as "Yugoslavs" rose from 1.7 % in the 1961 census to 5.4% in 1981, but fell to 3.0% in 1991. Ruza Petrovic, "The National Structure of the Yugoslav Population," Yugoslavia Survey 14/1 (1973), 1-22:12; idem, "The National Composition of the Population," Yugoslavia Survey 24/3 (1983), 2134:22; idem, "The National Composition of Yugoslavia's Population," Yugoslavia Survey 33/1 (1992), 3-24:12.

[34] Blaine Harden, "In Bosnia 'Disloyal' Serbs Share Plight of Opposition," Washington Post, Aug. 24, 1992.

[35] Mikica Babic, quoted in Chris Hedges, "War Turns Sarajevo Away from Europe," New York Times, July 28, 1995.

[36] Note to self: data on Serbs still in Sarajevo, proportion of BS population under arms.

friends without risk of coddling an enemy agent and can treat all members of the other group as enemies without risk of losing a recruit.

Most important, each side can almost always identify members of its own and the other group in any territory it has access to. Ethnicity can be identified by outward appearance, public and/or private records, and local social knowledge. In unprepared encounters or when time is short, ethnicity can often be determined by outward appearance. Rwandan Tutsis are generally tall and thin, while Hutus are relatively short and stocky.[37] Russians are fairer than Kazakhs. When physiognomy is ambiguous, other signs such as language or accent, surname, dress, posture, ritual mutilation, diet, habits, occupation, region or neighborhood within urban areas, or certain possessions may be useful. In many situations one such indicator might not be conclusive, but often several filters can be employed at once.[38]

In societies where ethnicity is important, it is often officially recorded in personal identity documents (the Soviet Union, China, Rwanda) or in censuses (Yugoslavia).[39] While it might not have been possible to predict the Yugoslav civil war thirty years in advance, one could have identified the members of each of the warring groups from the 1961 census, which identified the nationality of all but 1.8% of the population.[40]

Where public records are not adequate, private ones can be used instead. Pre-World War II Yugoslav censuses relied on church records.[41] Finally, absent any records at all,

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[37] Despite claims that the Hutu/Tutsi ethnic division was invented by the Belgians, 1969 census data showed that Tutsi males averaged 5 feet 9 inches and 126 pounds, compared to 5 feet 5 inches and 131 pounds for Hutus. Richard F. Nyrop et al., Rwanda: A Country Study, 1985 (Washington, D.C.: Department of the Army, 1985), 46-47, 63.

[38] [An] assimilated group may remain distinguishable enough by cultural or religious markers -- even when its members do not choose to use such markers to build communal consciousness -- for it to be singled out as a scapegoat." Brass, Ethnicity and Nationalism (London: Sage, 1991), 35.

[39] In 1994 Rwandan death squads used both neighborhood target lists prepared in advance and roadblocks which checked identity cards. In 1983 riots, Sinhala mobs went through mixed neighborhoods selecting Tamil dwellings and store for destruction with the help of Buddhist monks carrying electoral lists. Destexche, "Third Genocide," 8; Lakshmanan Sabaratnam, "The Boundaries of the State and the State of Ethnic Boundaries: Sinhala-Tamil Relations in Sri Lankan History,'" Ethnic and Racial Studies 10/3 (July 1987), 291-316:294.

[40] Petrovic, "National Structure of the Yugoslav Population," 12. Yugoslav censuses include extremely detailed nationality information, including migration between regions by nationality, ethnicity of partners in mixed marriages, ethnic identity of children of such marriages, and the percentage of Serbs, Croats, and Muslims in each of the 106 municipalities in Bosnia. Petrovic, "National Composition of Yugoslavia's Population" (1992); idem, "The Ethnic Identity of Parents and Children;" Dusan Breznik and Nada Raduski, "Demographic Characteristics of the Population of FR Yugoslavia by Nationality," Yugoslavia Survey 34/4 (1993), 3-44.

[41] Breznik and Raduski, "Demographic Characteristics," p. 3 n. 2.

reliable demographic intelligence can often be obtained from local co-ethnics.[42] While a few individuals might escape cleansers' nets, perhaps the strongest evidence of intelligence reliability in ethnic conflicts is that — in dramatic contrast to ideological insurgencies-history records almost no instances of mistaken "cleansing" of co-ethnics.

The result is that population control depends wholly on territorial control. Each side's mobilization base is limited to members of its community in friendly-controlled territory. Incentives to seize areas populated by co-ethnics are strong, as is the pressure to "cleanse" friendly-controlled territory of enemy ethnics by relocation to de facto concentration camps, expulsion, or massacre.[43]

Finally, the function of terror is different. While in ideological civil wars selective terror is used to deter civilians from supporting the enemy, in ethnic wars terror is used less to affect loyalties than to frighten enemy civilians into flight, and is accordingly often quite indiscriminate. This includes both "cleansing" of friendly-controlled areas as well as terrorization of enemy-held towns in order to make their conquest easier. Atrocities can even be used as a mobilization device. During World War II the Croatian Ustasha terrorized Serbs in order to provoke a backlash which could then be used mobilize Croats for defense against Serbs.[44]

Military Action. In contrast to ideological conflicts, in ethnic civil wars military operations are decisive, for three reasons. First, since each side can recruit only from its own community and only in friendly-controlled territory, conquering enemy population centers reduces their mobilization base, while territorial losses reduce one's own. Military control of the entire territory at issue is tantamount to total victory.[45] Second, attrition matters because

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[42] In 1988 å Tutsi mob which attacked the Catholic mission in Ntega, Burundi, brought with them a former employee who knew the hiding places where Hutu refugees could be found. While we don't know how the lists were constructed, Muslim survivors report that throughout Bosnia Serb forces used prepared lists to eliminate the wealthy, the educated, religious leaders, government officials, and members of the Bosnian Home Guard or of the (Muslim) Party of Democratic Action. David Ress, The Burundi Ethnic Massacres, 1988 (San Francisco: Mellen Research University Press, 1991), 103; Gutman, 51, 94, 109-110, 139.

[43] Beginning in 1985, the Iraqi government destroyed all rural villages in Kurdistan, as well as animals and orchards, concentrating the Kurdish population in "victory cities" where they could be watched and kept dependent on the government for food. The Turkish government is currently doing the same thing. The Burmese government has pursued this strategy against ethnic rebels at least since 1968. U.S. Senate Committee on Foreign Relations, Civil War in Iraq (Washington, D.C.: U.S. G.P.O., 1991), 7-9; Michael Fredholm, Burma: Ethnicity and Insurgency (Westport, Conn.: Praeger, 1993), 90-92.

[44] Aleksa Djilas, The Contested Country (Cambridge, Mass.: Harvard University Press, 1991), 122.

[45] In the extreme case where one side occupies the entire territory at issue, the weaker side will necessarily be reduced to guerrilla operations. The weaker population may also be incompletely mobilized, although this may be less because they do not desire ethnic autonomy or independence than because they view the balance of power as so unfavorable that resistance would bring them more harm than good. The credibility of the PKK has been enhanced by military successes against Turkish forces. Barkey, "Turkey's Kurdish Dilemma," 53.

the side's mobilization pools are separate and can be depleted. Third, the political restraints on the use of firepower in ideological disputes do not apply. Accidentally inflicting collateral damage on enemy civilians does little harm since there was never any chance of pacifying them anyway. Even accidentally hitting friendly civilians, while painful, will not cause them to defect.

Because of the decisiveness of territorial control, operational behavior in ethnic wars is very different than in ideological conflicts. Unlike ideological insurgents who evade rather than risk battle or a counterinsurgent government which might forbear to attack rather than bombard civilians, ethnic combatants must fight for every piece of land. In fact, in ethnic wars the focus on territory, specifically population centers, is even more extreme than in conventional interstate wars. While the ultimate goal in interstate wars is territory, force conservation imperatives sometimes require temporary abandonment of particular places. By contrast, combatants in ethnic wars are much less free to decline unfavorable battles because they cannot afford to abandon any settlement to an enemy who is likely to 'cleanse' it by massacre, expulsion, destruction of homes, and possibly by colonization. By the time a town can be retaken, its value will been lost.[46]

Similarly, while in interstate wars certain sectors of the front are often stripped in order to concentrate forces for attack or defense at a more critical location, in ethnic wars concentration for major efforts is often impossible because militiamen are much more motivated to defend their own villages than to risk their lives elsewhere while leaving their own homes undefended.[47] Thus to say that ethnic civil wars resemble conventional interstate wars more than they do ideological insurgencies is an understatement. Ethnic and ideological civil wars are best considered opposite ends of a continuum of which conventional war is the middle.

Political Competence. Unlike ideological conflicts, political competence is a less important determinant of victory in ethnic disputes than relative military strength. Most of the reasons why political competence is vital in ideological wars have less weight in ethnic ones. The ability to make credible promises cannot overcome the barriers to cross-ethnic appeals. Incompetence or corruption may undermine leaders' popularity within their own community, or even lead to their replacement, but will not cause members of the community to defect to

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[46] Intangible values are also destroyed by ethnic cleansing. Serbs in Bosnia have destroyed and desecrated mosques, and raped tens of thousands of women in part to kill any desire to return to their former homes. Gutman, Witness to Genocide, 68, 70.

[47] In the first phase of the Israeli War of Independence in 1947-1948, both sides relied mainly on regional and village defense units, having practically no mobile forces. Nafez Nazzal, The Palestinian Exodus from Galilee (Beirut: Institute for Palestine Studies, 1978) makes clear the independence and inflexibility of Arab village militias.

the enemy.[48] Unity, central control, and discipline are also less important because even deep rivalries will not distract most leaders or rank and file from the main enemy.[49]

Still, a minimum level of cohesion is indispensable for military mobilization and operations. A totally disorganized ethnic group can be defeated piecemeal by a weaker but better organized enemy.[50] Foreign military intervention, however, can overcome even this if the intervention force is strong enough to win the war by itself.

Outside Support. Outside aid is far more important to the outcome of ethnic conflicts than to ideological ones, and may be decisive. First, foreign aid does not undermine the legitimacy of the local leadership as it does in ideological conflicts. The opposing ethnic group is already defined as the enemy, and any source of help will generally be welcomed by all.

Second, the relative values of economic aid, military aid, and foreign intervention are the reverse of their values to ideological combatants. Subsistence support for areas impoverished by the war is helpful, although postwar resettlement and reconstruction aid are likely to be most important.

Military aid, which has limited potential in ideological conflicts, is the most valuable form of aid in ethnic wars. Arms transfers and training can greatly increase the recipient group's military strength. Unlike ideological insurgents, who cannot absorb much weaponry without conventionalizing the conflict too soon, aid in an ethnic conflict is limited only by the recipients' manpower pool and organizational capabilities.

Finally, if the client cannot be strengthened enough to win, direct intervention is viable. Since the war is in essence a conventional war over territory, outsiders can 'take over' the war in whole or part, as Turkey did for the Turkish Cypriot community in 1974 and U.S. forces are doing for Iraqi Kurds by prohibiting Iraqi air attack. The main pitfalls to foreign military interventions in ideological insurgencies are either weaker or absent in ethnic wars. Most important, the intervener's intelligence problems are much simpler, since loyalty intelligence is both less important and easier. Outsiders can safely assume that members of the allied group are friends and those of the other are enemies. Even if outsiders can't tell the groups apart, locals can, and the loyalty of guides provided by the local ally can be counted

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[48] The unpopularity of the Azeri regime in 1992 generated no support for concessions to Armenian territorial demands. This "rally-round-the-flag" effect makes leaders in ethnic conflicts less accountable than in most situations. Radovan Karadjicz, for instance, is rumored to have become a wealthy man during the current war in Bosnia.

[49] The Israeli government's attack on the Altalena in June 1948 horrified Irgun supporters but did not lessen their efforts against the Arabs.

[50] E.g., the defeats of the Rwandan government by the R.P.F. in 1994 and the Palestinian Arabs by the Jews in 1947-48.

on. As a result, the main intelligence task shifts from assessing loyalties to locating enemy forces, which major power militaries are good at.

Conclusion: Wide Scope for Foreign Intervention. The scope for foreign influence on ethnic civil wars is often great, because everything depends on the balance of military power. A few thousand foreign troops can be decisive if the local forces are weak and evenly matched, although much more may be required to rescue a disorganized and overmatched ethnic group.

II.C. THE NEED TO CHOOSE SIDES.

While even-handedness is rarely a concern for interveners in ideological wars, recently the West and the U.N. have behaved as if it were a requirement for intervention to resolve ethnic conflicts. In practice even-handedness leads either to nearly complete passivity, as in the case of UNPROFOR in Bosnia, or eventually to combat against one side after having earned the distrust of others, as the U.N. did in Somalia.[51] Further, attempts at even-handedness forfeit the relative intelligence simplicity of ethnic wars and compromise the interveners' comparative advantage in conventional military strength. At worst, peacekeeping efforts may actually prolong fighting if they are strong enough to prevent victory by either side but too weak to compel peace.[52]

Intervention should only be undertaken when the major actors of the international community can agree on the rights and wrongs of the case. This is essential for domestic support; if both sides have behaved so badly that there is little to choose between them, intervention shouldn't and probably won't be undertaken. Almost no one in the West, for instance, advocates assisting either side in the Croatian-Serb conflict. For the same reason, interventions should almost always be on behalf of the weaker side; the stronger needs no defense. If both sides are about equally strong, it will be unclear that strengthening one will reduce overall violence and suffering.

III. CAUSING LASTING PEACE

If military intervention in ethnic civil wars is feasible, the next question is whether and how it can be used to assure lasting security for endangered people. Safety, rather than

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[51] One or both of these also happened to the U.N. in the Congo in 1961-63, the U.S. in Lebanon in 1983, and Indian forces in Sri Lanka in the 1980s. The Russian 14th Army in Moldova, nominally neutral although initially seen as favoring the Transnistrian Russians, has since come into conflict with them. Freedman, "Why the West Failed;" Charles King, "Moldova With a Russian Face," Foreign Policy 97 (Winter 1994-95), 106-20.

[52] Richard K. Betts, "The Delusion of Impartial Intervention," Foreign Affairs 73/6 (Nov./Dec. 1994), 20-33. Less than heavily armed intervention forces also risk becoming hostages as in Bosnia or being forced to flee the country as in Rwanda.

perfect peace, should be the goal. Given the persistence of ethnic rivalries, ethnic "security" is best defined as freedom from threats of ethnic murder, expropriation, or expulsion for the overwhelming majority of civilians of all groups. Absence of formal peace, or even occasional terrorism or border skirmishes would not undermine this provided that the great majority of civilians are not at risk.

"Lasting" must mean that the situation remains stable indefinitely after the intervention forces leave. Truces of weeks, months, or even years are not lasting safety if ethnic cleansing eventually resumes with full force.[53] We need not require that the interveners cut all ties with the client, as any power which intervenes in an ethnic conflict is likely to retain continuing concerns. The continuing costs, however, must be small enough that the intervener can bear them without strain. They might include aid or a residual guarantee force, but not indefinite occupation.

There are four main categories of possible solutions to ethnic conflicts: reconstruction of ethnic identities, power-sharing, state-building, and separation.[54] There are several methods by which interveners can pursue the first three solutions, some of which risk the quagmires inherent in evenhanded military interventions, and none of which can assure stability after the interveners leave. In general, resolutions of serious ethnic conflicts are stable only when the warring communities are both physically separated and face a balance of relative strength which makes it unprofitable for either side to attempt to revise the territorial settlement.

III.A. SECURITY DILEMMAS IN ETHNIC CONFLICTS.

The most serious problem which all remedies for severe ethnic conflict must overcome is the security dilemma. Regardless of the origins of ethnic strife, once violence (or abuse of state power by one group which controls it) reaches the point that ethnic communities cannot rely on the state to protect them, each community must mobilize to take responsibility for its own security.

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[53] Betts argues that intervention may sometimes be justifiable even if peace cannot be guaranteed if it saves lives in the short run. In Spring 1994 military intervention to accelerate the victory of the Rwandan Patriotic Front and/or to provide protection for Tutsis in areas not yet reached by the R.P.F advance might have saved tens or even hundreds of thousands. Betts, "Delusion of Impartial Intervention," 32-33; Destexche, 9.

[54] Charles William Maynes, "Containing Ethnic Conflict," Foreign Policy 90 (Spring 1993), 3-21, briefly surveys most proposals. A fifth solution, repression, may reduce violence in some cases but will never be an aim of outsiders considering humanitarian intervention. On this solution, see Ian Lustick, "Stability in Deeply Divided Societies: Consociationalism versus Control," World Politics 31 (1979), 325-44. I. William Zartman, Ripe for Resolution: Conflict and Intervention in Africa (New Haven: Yale University Press, 1989), offers advice on facilitating negotiations in internal conflicts (means), but not on solution of ethnic grievances (ends).

At the same time, each group's mobilization constitutes a real threat to the security of others, both because military capability acquired for defense can usually also be used for offense and because the nationalist rhetoric which accompanies mobilization may seem to indicate offensive intent. Under conditions of anarchy, group identity itself can be seen by other groups as a threat to their safety.[55] Further, offense often has an advantage over defense in inter-community conflict, especially when settlement patterns are intermingled, because isolated pockets are harder to hold than to take.[56]

The reality of the mutual security threats means that solutions to ethnic conflicts must do more than undo the causes; until or unless the security dilemma can be reduced or eliminated, neither side can afford to demobilize. If an international force compels peace, the conflict will resume as soon as it leaves. If a national government were somehow be re-created despite mutual suspicions, neither group could safely entrust its security to it. Finally, continuing mutual threat ensures perpetuation of hypernationalist propaganda, both for its mobilization function and because the plausibility of the threat posed by the enemy gives radical nationalists an unanswerable advantage over moderates in intra-group debates.

III.B. RECONSTRUCTION OF ETHNIC IDENTITIES.

The most ambitious program to end ethnic violence would be to reconstruct ethnic identities according to the "Constructivist Model" of nationalism. Constructivists argue that individual and group identities are fluid, continually being made and re-made in social discourse. Further, these identities are manipulable by political entrepreneurs. Violent ethnic conflicts are the result of pernicious group identities created by hypernationalist myth making; many inter-group conflicts are quite recent, as are the ethnic identities themselves.[57]

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[55] Barry R. Posen, "The Security Dilemma and Ethnic Conflict," in Michael E. Brown, ed., Ethnic Conflict and International Security (Princeton, N.J.: Princeton University Press, 1993), 103-24. Posen argues (106-107) that nationalism and hypernationalism are driven primarily by the need to supply recruits for mass armies, and thus should be more extreme in new states which lack the capacity to field more capital-intensive and less manpower-intensive forces. See also Posen, "Nationalism, the Mass Army, and Military Power," International Security 18/2 (Fall 1993), 80-124.

[56] The breakup of a multi-ethnic states often also creates windows of opportunity by leaving one group in possession of most of the state's military assets, while others are initially defenseless but working rapidly to mobilize their own military capabilities. Posen, 108-111.

[57] Malays and Assamese assert primacy over other groups by terming themselves in their own languages "sons of the soil," even though both are actually recent aggregations of sub-groups. Similarly, Sinhalese claim primacy in Sri Lanka in part based on a largely mythical claim of earlier migration than the Tamils. Horowitz, Ethnic Groups in Conflict, 453; David Little, Sri Lanka: The Invention of Enmity (Washington, D.C.: U.S. Institute of Peace, 1994), 26-36. Robert Donia and John Fine, Bosnia and Herzegovina: A Tradition Betrayed, argue that distinct ethnic identities did not exist there before 1875.

The key is elite rivalries within communities, in which aggressive leaders use hypernationalist propaganda to gain and hold power. History does not matter; whether past inter-community relations have in fact been peaceful or conflictual, leaders can redefine, reinterpret, and invent facts to suit their arguments, including supposed atrocities and exaggerated or imagined threats. The more control that nationalist entrepreneurs have over opinion-making institutions such as government, church, media, and publishing, the greater the chances for success, although initial success will tend to increase their control over these institutions.[58] Beyond a certain point, the process feeds on itself as nationalists use the self-fulfilling nature of their arguments to both escalate the conflict and justify their own power. Intra-community politics becomes a competition in hypernationalist extremism and inter-community relations enter a descending spiral of violence.[59]

It follows that ethnic conflicts generated by the promotion of pernicious, exclusive identities should be reversible if by encouraging individuals and groups to adopt more benign, inclusive identities. Leaders can choose to mobilize support on the basis of broader identities which transcend the ethnic division (such as ideology, class, or civic loyalty to the nation-state). If members of the opposing groups can be persuaded to adopt a larger identity, ethnic antagonisms should fade away. Thus multiethnic states can defuse ethnic conflict by legitimating themselves on the basis of an ethnicity-free "civic nationalism" rather than on the ethnonationalism(s) of the dominant group(s).[60] Ted Hopf reports that the government of Uzbekistan has calmed fears of ethnic Russians in this way.[61]

Even if ethnic hostility can be --constructed," there are strong reasons to believe that violent conflicts cannot be --reconstructed" in the same way. First, identity reconstruction under conditions of intense conflict is probably impossible because once ethnic groups are mobilized for war, they will have already produced, and will continue reproducing, social institutions and discourses which reinforce their group identity and shut out or shout down competing identities.[62]

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[58] V. P. Gagnon, Jr., "Ethnic Nationalism and International Conflict: The Case of Serbia," International Security 19/3 (Winter 1994/95) 130-66:137; Gagnon, "Ethnic Nationalism and International Conflict," 137; Stuart Kaufman, ISA paper, 1993, 8.

[59] Brass, Language, Religion, and Politics; Jack Snyder, "Nationalism and the Crisis of the Post-Soviet State," in Brown, Ethnic Conflict and International Security, 79-102; Gagnon, "Ethnic Nationalism;" Susan L. Woodward, Balkan Tragedy: Chaos and Dissolution after the Cold War (Washington, D.C.: Brookings, 1995), 225-36.

[60] Hopf, "Demand for Behavioral Regimes;" idem, "Identity and Russian Foreign Policy" (ms., 1994). I am putting constructivist proposals to a somewhat unfair test here, since most seem concerned mainly with prophylaxis, not solutions for intense ethnic wars. See, however, Flora Lewis, "Reassembling Yugoslavia," Foreign Policy 98 (Spring 1995), 132-44.

[61] "Identity and Russian Foreign Policy," 50-54.

[62] War may actually create ethnic identities. "Where disaffected ethnies become alienated enough to terror and revolt .... the movement itself can be the prototype and harbinger of a new society and culture. Its cells, schools,

Replacement of ethnicity by some other basis for political identification requires that political parties have cross-ethnic appeal, but this is impossible when ethnic groups are polarized. In late 1992 Yugoslav Prime Minister Milan Panic attempted to reconstruct Serbian identity in a less nationalist direction. Running for the Serbian Presidency against Milosevic, he promised democratization, economic reform, and ends to the war in Bosnia as well as to U.N. sanctions. Milosevic painted Panic as a tool of foreign interests, and he lost with 34% of the vote.[63] The 1990 Bosnian elections were dominated by the Muslim Party for Democratic Action, the Serbian Democratic Society, and the Croatian Democratic Union with vote totals in nearly perfect proportion to population; non-ethnic parties did very poorly.[64]

In fact, ethnic tension far short of war generally suffices to undermine not just political appeals across ethnic lines but also appeals within a single group for cooperation with other groups. In Yugoslavia in the 1920s, Malaya in the 1940s, Ceylon in the 1950s, and in Nigeria in the 1950s and 1960s, parties which advocated cooperation across ethnic lines proved unable to compete with strictly nationalist parties.[65]

Second, once the conflict has escalated to the point of organized violence, the security dilemma is real. Ethnic mobilization by one side ignites countervailing mobilization by the other. This in turn creates a security dilemma for both sides, which, in the environment of suspicion already created by myth making, easily descends into a spiral of violence, increasing suspicion, increasing security threats, and yet more violence.[66] Both sides therefore have a real need to continue their mobilization.

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guerrilla units, welfare associations, [etc.] all presage and create the nucleus of the future ethnic nation and its political identity, even when secession is prevented and the community fails to obtain its own state." Smith, National Identity, 137. Bouganivilleans, who formerly identified themselves primarily by macroeconomic clans came, as a result of their unsuccessful effort to secede from Papua New Guinea, to divide people primarily between 'red skins' (the Papuan enemy) and 'black skins' (themselves). Caroline Ifeka, "War and Identity in Melanesia and Africa," Ethnic and Racial Studies 9/2 (April 1986), 131-49.

[63] Parties aligned with Panic won 21% of the National Assembly seats compared to 40% for Milosevic's party and 29% for an even more ultranationalist party. Milan Andrejevich, "The Radicalization of Serb Politics," RFE/RL Research Reports 2/13 (March 26, 1993), 14-24. Similarly, when Fazlal Huq, a Muslim leader in Bengal tried to promote a moderate line in the 1946 election campaign, he was denounced as a traitor by Muslim League leaders and his party wiped out at the polls. Leonard A. Gordon, "Divided Bengal: Problems of Nationalism and Identity in the 1947 Partition, in Mushirul Hasan, ed., India's Partition: Strategy, Process, and Mobilization (Delhi: Oxford University Press, 1993), 274-317:295-301.

[64] Woodward, Balkan Tragedy, 122.

[65] Djilas, Contested Country, 86; Horowitz, Ethnic Groups in Conflict, 336, 338-39, 635-38, 647. For a civic nationalism project under full peace, see Raymond Breton, "From Ethnic to Civic Nationalism: English Canada and Quebec," Ethnic and Racial Studies 11/1, (Jan. 1988), 85-102. He sees slow progress, although is unsure that the nascent joint identity is a civic one and not a white ethnic identity in opposition to non-white immigrants.

[66] Non-ethnic identity categories, -such as neighborhood and friendship, cannot compete. Bosnians expropriated their neighbors, while Rwandans killed their friends. Gutman, Witness to Genocide; "Rwanda's Mass of Murderers," Economist, Oct. 29, 1994, 43.

Finally, even if concede are right that the ancient past does not matter, recent history does. Intense violence creates personal experiences of fear, misery, and loss which lock people into their group identity and their enemy relationship with the other group. Multi-ethnic towns as yet untouched by war are swamped by radicalized refugees, undermining moderate leaders who preach tolerance.[67] Elite opinions are also affected; the more than 5,000 deaths in the 1946 Calcutta riots convinced many previously optimistic Hindu and Muslim leaders that the groups could not live together.[68] Literacy preserves atrocity memories and enhances their use for political mobilization.[69] The result is that bounds of debate are permanently altered; the leaders who used World War II Croatian atrocities to whip up Serbian nationalism in the 1980s were making use of a resource which, since then, remains always available in Serbian political discourse.[70]

If the warring groups are unlikely to deconstruct their competing identities by themselves, can foreign intervention help? In principle, intervention to deconstruct ethnic conflicts could employ three strategies.

First, requiring the least cost and risk, the combatants could be offered economic or other incentives to adopt an inclusive identity which transcends their local conflict. For example, Bosnian Serbs and Muslims could be offered membership in the European Community, but only as the integral state of Bosnia. Over time, the experience of acting as a unit could foster the growth of a shared identity which would gradually supersede their exclusive identities. However, such bribes are in fact on offer all the time, since peace itself offers economic benefits to all sides. Outsiders can only increase their scale. Ethnic combatants do not take them for two reasons: first, if the stronger side expects to make further gains by force, it will not agree until it has done so, but waiting for this is likely to mean watching more ethnic cleansing. More important, no bribe can mitigate the absolute security threat each side perceives from its enemy.

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[67] Woodward, Balkan Tragedy, 363.

[68] While Brass, Language, Religion, and Politics, argues that Muslim political identity was largely constructed in the 1920s and 1930s by political entrepreneurs painting exaggerated threats, by the mid-1940s the accelerating intercommunal violence was very real. Gordon, "Divided Bengal," 303-304.

[69] Ethnic combatants have noticed this. In World War II, the Croatian Ustasha refused to accept educated Serbs as converts because they were assumed to have a national consciousness independent of religion, while illiterate peasants were expected to forget their Serbian identity once converted. In 1992 Bosnian Serb ethnic cleansers annihilated the most educated Muslims. Tutsi massacres of Hutus in Burundi in 1972 concentrated on educated people who were seen as potential ethnic leaders, and afterwards the government restricted admission of Hutus to secondary schools. Gutman, 109-10; Djilas, The Contested Country, 211 n. 46; Thomas P. Melady, Burundi: The Tragic Years (Maryknoll, N.Y.: Orbis Books, 1974), 46-49; Rene Lemarchand, "Burundi in Comparative Perspective: Dimensions of Ethnic Strife," in John McGarry and Brendan O' Leary, eds., The Politics of Ethnic Conflict Regulation: Case Studies of Protracted Conflicts (New York: Routledge, 1993), 151-71:161, 168.

[70] Gagnon, "Ethnic Nationalism and International Conflict," 151.

Second, requiring greater effort, outside powers or international institutions could enforce peace temporarily in the hope that reduced security threats would permit moderate leaders within each group to promote the reconstruction of more benign identities. Assuming away for the moment the difficulties of attempts at "balanced" intervention, the simple fact that outside forces are needed to separate the sides highlights their separateness, so that persuading people to adopt an overarching identity may be impossible. The most group leaders can probably do is deconstruct some of the most extreme hypernationalism back into more benign, albeit still separate nationalisms.[71] However, this still leaves both sides vulnerable to later revival of hypernationalism by radical political entrepreneurs, especially after the peace-keepers have left and security threats once again appear more realistic.

The feasibility of even partial reconstruction depends on the scale and character of the previous violence. Mass murder of civilians is the hardest to forgive, because it is likely to be seen as attempted genocide. Even harder to reconstruct would be beliefs that such attacks reflect the genocidal desires of the opposing group as a whole, not just a particular regime or terrorist faction, since this would mean that no promise of non repetition can be believed. Unfortunately, this perception is likely because the nationalist rhetoric used for mobilization on both sides often includes images of the enemy group as a threat to the physical existence of the nation, in turn justifying unlimited violence against the ethnic enemy — and this discourse can be observed by members of the target group.[72] The result is that atrocity histories cannot be reconstructed; victims can sometimes be persuaded to accept exaggerated atrocities, but cannot be talked out of real ones.[73]

Third and most expensive and time-consuming, outsiders could attempt a thorough "re-engineering" of the involved groups' self-identities, comparable to the rehabilitation of Germany after World War II. The costs would be steep, since this would require conquering the country and occupying it for a long time, possibly for decades. The apparent benignification of Germany suggests that, if the international community is prepared to go this far, this approach could succeed.[74]

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71 Van Evera, "Managing the Eastern Crisis," proposes not to dissolve ethnic identities but to remove their xenophobic content by encouraging honest history of inter-group relations.

72 The Tutsi-controlled government of Burundi, which had witnessed the partial genocide against Tutsis in Rwanda in 1962-63 and survived Hutu-led coup attempts in 1965 and 1969, regarded the 1972 rebellion as attempted genocide, and responded by murdering between 100,000 and 200,000 Hutus; fresh rounds of violence in 1988 and 1994 have reinforced the apocalyptic fears of both sides. Melady, The Tragic Years, 12, 46-49; Lemarchand, "Burundi in Comparative Perspective."

73 Exposure of captured Iraqi government records of atrocities committed during the 1985-88 war helped Kurdish leaders mobilize people for the 1991 rebellion. Senate, Civil War in Iraq, 3; U.S. Senate Committee on Foreign Relations, Kurdistan in the Time of Saddam Hussein (Washington, D.C.: U.S. G.P.O., 1991), 2.

74 Elmer Pluschke, "Denazification in Germany," in Wolfe, ed., Americans as Proconsuls: United States Military Governments in Germany and Japan, 1944-1952. For a current proposal see Martin van Heuven, "Rehabilitating Serbia," Foreign Policy 96 (Fall 1994), 38-48.

A final possible constructivist solution to severe ethnic conflicts could be to wait for the violence to die down, and then begin the identity reconstruction project during a period of relative calm. Violence in most ethnic conflicts is episodic; each round of fighting eventually ebbs, either because of a stalemate, temporary victory by one side, regime change, or other reasons. Aside from the possibility that personal grievances, security fears, and other barriers to reconstruction of hypernationalist group identities may outlast the proposed "cooling off" period, the lives which intervention aims to protect could easily be destroyed if fighting is allowed to continue. This approach would mean letting the Hutus (or the Nazis) do their work, while waiting to intervene until they are ready to promise to sin no more. Humanitarian interventions far more often come too late than too early.

III.C. POWER-SHARING.

The best-developed blueprint for civic peace in multi-ethnic states is power-sharing or "consociational democracy," proposed by Arend Lijphart. This approach assumes that ethnicity is somewhat manipulable, but not so freely as constructivists say. Ethnic division, however, need not result in conflict; even if political mobilization is organized on ethnic lines, civil politics can be maintained if ethnic elites adhere to a power-sharing bargain which equitably protects all groups.[75]

Such arrangements include four key properties: joint exercise of governmental power through a parliamentary grand coalition or allocation of key offices; proportional distribution of government funds and jobs; autonomy on ethnic issues such as cultural and religious practices (or, if groups are concentrated territorially, regional federation); and a minority veto on issues of vital importance to each group.[76]

Lijphart identifies nine conditions for success:

1. Absence of a majority ethnic group.
2. Absence of large economic differences.
3. Groups of roughly same size (i.e., balance of power).

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[75] Lijphart, "Consociational Democracy," World Politics 21 (Jan. 1969); Democracy in Plural Societies (New Haven: Yale University Press, 1977). Donald Horowitz's related proposal, "electoral restructuring," relies not on elite cooperation but on constitutional arrangements which require politicians to compete for support across ethnic lines; the emphasis is on structure, not voluntarism. Horowitz, Ethnic Groups in Conflict, esp. 610-652. While this approach is distinguishable from power-sharing under conditions of low conflict, Horowitz admits (647) that "multiethnic parties are difficult to promote in severely divided societies," leaving multiethnic coalitions of ethnic parties as the best alternative. Thus, wherever there are serious intergroup antagonisms, Horowitz's approach reduces to Lijphart's.

[76] Lijphart cites Belgium as an archetypical example, as well as Malaysia (which achieves both joint power and proportionality through an informal permanent grand coalition agreement), and Canada, India, and Nigeria (all of which have federal systems). "Power-Sharing Approach," 492, 494-96.

4. Not too many groups (to simplify bargaining).
5. A relatively small total population.
6. External dangers which promote internal unity.
7. Overarching loyalties which reduce the power of group loyalties.
8. Geographically concentrated settlement patterns.
9. Prior traditions of compromise and accommodation.[77]

Even if power-sharing can avert potential ethnic conflicts or dampen mild ones, our concern here is whether it can bring peace under the conditions of intense violence and extreme ethnic mobilization which are likely to motivate intervention.[78]

The answer is no. The indispensable component of any power-sharing deal is a plausible minority veto; one which the strongest side will accept and which the weaker side(s) believe the stronger will respect.[79] In practice this requires the 3rd, 6th, 7th, 8th, and 9th conditions. If the 3rd condition (balance of power) is absent, any minority veto will be "soft;" the stronger side can override it whenever it chooses. If the stronger side has sufficient capability and motivation to override, it will — or it will simply refuse to share power in the first place. The 8th condition (regional concentration) can partially substitute for the 3rd if the minority group can credibly threaten to secede if its veto is overridden.[80] Absent either of these, conceivably some combination of the 6th (external danger), 7th (overarching loyalties) and 9th (tradition of accommodation) could persuade the weaker side that the stronger will respect the bargain.

In ethnic civil wars none of these conditions can be met. The fact of civil fighting demonstrates that the 6th (common danger) either was not present or was not strong enough to hold the groups together, while the 7th (overarching loyalties) and 9th (traditions of accommodation) if they ever were present, will have been destroyed by the fighting itself and

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[77] Lijphart argues that diffuse or fluid ethnic identities are undesirable, because design of a power-sharing agreement requires clear identification of the players. "Power Sharing Approach," 499-500. On this point power-sharing is diametrically opposed to constructivist arguments.

[78] Lijphart admits that power-sharing is more difficult under conditions of high conflict but prefers it anyway, arguing that pessimism in difficult cases would be self-fulfilling; power-sharing cannot when it is not tried. ibid, 497. On Yugoslavia, see Vucina Vasovic, "A Plea for Consociational Pluralism," in Seroka and Pavlovic, eds., The Tragedy of Yugoslavia, 173-97.

[79] Lijphart admits no minimum conditions, although he stresses the 1st (no majority) and 2nd (economic parity) as most important. This would make Bosnia in 1991 good candidate.

[80] Indeed, Lijphart argues that the best way to avoid partition is not to resist it. If minorities, such as the Quebecois, know that they can secede if a satisfactory power-sharing agreement cannot be worked out, this exerts a moderating influence on bargaining. "Power Sharing Approach," 494. In short, partition is unnecessary when it is known to be feasible.

accompanying ethnic mobilization. The 3rd condition (balanced power) is unlikely in situations where outsiders would consider intervention, as most interventions are likely to be aimed at saving the weaker group from the stronger. Finally, the 8th (demographic separation) is unlikely, because if the populations were separated ethnic cleansing and related atrocities which are most likely to provoke intervention would not be occurring. In addition, if (or once) the populations are separated, those who prefer partition to trusting a power-sharing agreement would be in a position to secede.

The core reason why power-sharing cannot resolve ethnic civil wars is that it is inherently voluntaristic; it requires conscious decisions by elites to cooperate to avoid ethnic strife. Under conditions of hypernationalist mobilization and real security threats, group leaders are unlikely to be receptive to compromise, and even if they are cannot act without being discredited and replaced by harder-line rivals.

Cod outside intervention make power-sharing work? There are at least three possible intervention strategies for this purpose: First, outsiders could offer carrots to sweeten a power-sharing deal. One or both sides could be offered economic incentives, while mediation by an international organization or a superpower could provide fig leaves for pragmatic local leaders. The problems with this are the same as those with offering bribes for identity reconstruction; the stronger side will not agree if it expects to do better by force, and in any case no bribe can overcome the security dilemma. Only where security dilemmas are mild, as between groups which live in separate, defensible regions, will such incentives facilitate peace.[81]

A second approach would be to adjust the balance of power between the warring sides to a "hurting stalemate."[82] This could be done by arming the weaker side and/or blockading the stronger, or by direct military intervention to partially disarm the stronger side. When both sides realize that further fighting will bring them costs but no profit, they will negotiate an agreement. This gives us Lijphart's 3rd condition (balanced power), although without the 8th condition (separated populations) this may actually worsen security dilemmas and increase violence — especially against civilians — as both sides eliminate the threats posed by pockets of the opposing group in their midst. Further, once there has been heavy fighting, the sides are likely to distrust each other far too much to entrust any authority at all to a central government which could potentially be used against them, and if both control some territory either can always insist on the existing de facto partition. The 1955-1972 Sudanese Civil War was ended — under conditions of stalemate and limited outside pressure — by such

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[81] E.g., between Israel and Egypt in 1979. The Israeli-Palestinian accords in 1993 may be a second example, although in this case the weakness of security dilemmas is due to overwhelming Israeli strength.

[82] Zartman, Ripe for Resolution.

an autonomy agreement, but the central government massively violated the agreement, leading to resumption of the war in 1983 and its continuation to the present.[83]

The final approach is international imposition of power-sharing, which requires occupying the country to coerce each side into accepting the agreement and to prevent inter-ethnic violence until it can be implemented. Aside from the risk that t interveners may find themselves at war with both sides, it will be impossible to bind the stronger side to uphold the agreement after the intervention forces leave. Lijphart argues that power-sharing could have prevented the troubles in Northern Ireland if the British had not guaranteed the Protestants that they would not be forced into union with Ireland, freeing them of the need to cooperate.[84] However, the union threat would have had to be maintained permanently; otherwise the Protestant majority could tear up the agreement later. The British did impose power-sharing as a condition for Cypriot independence, but it broke down almost immediately. The Greek Cypriots, incensed by what they saw as Turkish Cypriot abuse of their minority veto, simply overrode the veto and operated the government in violation of the constitution. Similarly, while at independence in 1948 the Sri Lankan constitution banned religious or communal discrimination, the Sinhalese majority promptly disenfranchised half of the Tamils on the grounds that they were actually Indians, and has increasingly discriminated against Tamils in education, government employment, and other areas.[85]

III.D. STATE-BUILDING.

Ultimately, neither identity reconstruction nor power-sharing is really meant to solve very violent disputes. This is not a limitation of Gerald Helman and Steven Ratner's proposal for international "conservatorship" of failed states.[86] Helman and Ratner argue that states where government breakdown, economic failure, and internal violence imperils their own citizens and threatens neighboring states can be rescued by international intervention to administer critical government functions until the country can govern itself following a free

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[83] The decisive acts were the division of the Southern regional government specified in the agreement into three separate states, the imposition of Islamic law on non-Muslims, and-- the trigger for violent resistance-- an attempt to reduce regional self-defense capabilities by transferring Army units composed of Southerners to the North. Ann Mosely Lesch, "External Involvement in the Sudanese Civil War, in Smock, ed., Making War and Waging Peace, 79-106.

[84] "Power-Sharing Approach," 496-97.

[85] Richard A. Patrick, Political Geography and the Cyprus Conflict, 1963-1971 (Waterloo, Iowa: University of Waterloo, 1976); Bahcheli, 143-56; Little, Invention of Emnity, 55-56; Sabaratnam, "The Boundaries of the State."

[86] "Saving Failed States," Foreign Policy 89 (Winter 1992-93), 3-20. John Chipman argues along somewhat similar lines that international intrusion to safeguard human rights is preferable to sanctioning secession. "Managing the Politics of Parochialism," in Brown, Ethnic Conflict and International Security, 237-63:245-46.

and fair election.[87] Ideally, the failed state would voluntarily delegate specified functions to an international executor, although in extreme cases involving massive violations of human rights or prospect of large-scale warfare the international community could act even without an invitation.[88]

As with imposing power-sharing, this requires occupying the country (and may require conquering it), coercing all sides to accept a democratic constitution, and enforcing peace until elections can be held. Conservatorship additionally makes the interveners responsible for administering the country's economy and the elections themselves. Conservatorship thus requires even more finesse than enforced power-sharing, as well as involving the same risks of winding up at war with one or more factions and of being caught in an open-ended, interminable commitment.

The case which Helman and Ratner set as the test of their approach — the U.N. intervention in Cambodia in 1992-93 to create a safe environment for free elections — was successful.[89] However, this was an ideological, not an ethnic conflict. All sides were concerned with the governance of Cambodia, not with disempowering minorities or dismembering the country. Second, the U.N. was invited by a functioning government which controlled most of the country. Third, all factions except the Khmer Rouge preferred peace, and they were both apparently ambivalent and certainly much weaker than a few years earlier. By contrast, the growth of the U.S./U.N. mission in Somalia from famine relief to state-rebuilding was a failure, and no one has been so bold as to propose conservatorship for Bosnia or Rwanda.

Even if conservatorship could rapidly, effectively, and cheaply stop an ethnic civil war, rebuild institutions, and ensure free elections, nothing would be gained unless the electoral outcome protected all parties' interests and safety; that is, power-sharing would still be necessary. Thus, in serious ethnic conflicts, conservatorship would be only a more expensive way to reach the same impasse.

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[87] This proposal shares a number of assumptions with the 1960s nationbuilding literature, which argued that political order in modernizing societies requires strong political institutions which can attract loyalties previously given to traditional tribal, linguistic, cultural, religious, caste, or regional groupings. Karl A. Deutsch, Nationalism and Social Communication: An Inquiry into the Foundations of Nationalism (Cambridge, Mass.: M.I.T. Press, 1953); "Social Mobilization and Political Development," American Political Science Review 55/3 (Sept. 1961):493-514, Deutsch and William J. Foltz, eds., Nation-Building (New York: Atherton, 1963); Reinhard Bendix, Nation-building and Citizenship (New York: John Wiley, 1964). As Walker Connor points out, this approach should be termed "state-building," because it centers on strengthening the state apparatus in what are often multi-ethnic states. Connor, Ethnonationalism, 39-42.

[88] "Saving Failed States," 13. "If the forces in a country cannot agree upon the basic components of a political settlement-- such as free and fair elections-- and accept administration by an impartial outside authority pending elections, then the U.N. Charter should provide a mechanism for direct international trusteeship." ibid, 16.

[89] Helman and Ratner, 14-17.

III.E. ETHNIC SEPARATION.

The above proposals cannot solve ethnic civil wars because once communities are mobilized for violence all sides face real security dilemmas, and the reality of mutual security threats prevents both demobilization and de-escalation of hypernationalist discourse. Thus, regardless of the causes of a particular conflict, lasting peace requires removal of the security dilemma. The most effective, and in many cases only, way to do this is to separate the ethnic groups.

The critical element is separation into mutually defensible regions, not separate sovereignty. Political division without ethnic separation leaves incentives for ethnic combat unchanged, or actually increases them if it creates new minorities as in Croatia and Bosnia in early 1992.[90] Conversely, demographic separation dampens ethnic conflicts even without separate sovereignty, although the more intense the previous fighting, the less the prospects for preserving a single state, even if loosely federated.

Demography and Security Dilemmas. The severity of ethnic security dilemmas is greatest when demography is most intermixed, weakest when community settlements are most separate.[91] The more mixed the opposing groups, the stronger the offense in relation to the defense, while the more separated they are the stronger the defense in relation to offense.[92] When settlement patterns are extremely mixed, both sides are vulnerable to attack not only by organized military forces but also by local militias or gangs from adjacent towns or neighborhoods. Since well-defined fronts are impossible, there is no effective means of defense against such raids. Accordingly, each side has a strong incentive — at both national and local levels — to kill or drive out enemy populations before the enemy does the same to it, as well as to create homogeneous enclaves more practical to defend.[93] Better, but still bad, are well-defined enclaves with islands of one or both sides' populations behind the others' front. Each side then has an incentive to attack to rescue surrounded co-ethnics before they are destroyed by the enemy, as well as incentives to wipe out enemy islands behind its own lines both to pre-empt rescue attempts and to eliminate possible bases for fifth columnists or guerrillas. The safest pattern is a well-defined demographic front which separates nearly

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90 Similarly, inclusion of a large Catholic minority in North Ireland, a Muslim majority in Indian Kashmir, and an Armenian enclave in independent Azerbaijan escalated conflict in all three places.

91 Posen, "Security Dilemma and Ethnic Conflict," 108-10.

92 Increased intermixing of ethnic groups often intensifies conflict, particularly if the state is too weak or too biased to assure the security of all groups. Increasing numbers of Jewish settlers in West Bank had this effect on Israeli-Palestinian relations. A major reason for the failure of the negotiations which preceded the Nigerian civil war was the inability of Northern leaders to guarantee the safety of Ibo living in the Northern Region. Harold D. Nelson, ed., Nigeria: A Country Study (Washington, D.C.: U.S.G.P.O., 1982), 55.

93 Van Evera, "Hypotheses on Nationalism." Posen also points out that when populations are highly mixed it is easier for small bands of fanatics to initiate and escalate violence, while community leaders can deny responsibility for their actions, or may actually be unable to control them. "Security Dilemma and Ethnic Conflict," 109.

homogeneous regions. Such a front can be defended by organized military forces, so populations are not at risk unless defenses are breached. At the same time the strongest motive for attack disappears, since there are few or no endangered co-ethnics behind enemy lines.

Further, offensive and defensive mobilization measures are more distinguishable when populations are separated than when they are mixed. Hypernationalist political rhetoric, as well as organization of conventional military forces, have both offensive and defensive uses regardless of population settlement patterns, but some forms of ethnic mobilization do not. Local militias, and ethnically based local self-governing authorities have both offensive and defensive capabilities when populations are mixed; ethnic militias can become death squads, while local governments dominated by one group can disenfranchise minorities. When populations are separated, however, such local organizations have defensive value only.

This yields three results. First, political partition without ethnic separation increases conflict. While boundaries of sovereign successor states may provide defensible fronts which reduce the vulnerability of the majority group in each state, stay-behind minorities are completely exposed. Significant irredenta are both a call to their ethnic homeland and a danger to their hosts. This gives both sides incentives to mount rescue and/or ethnic cleansing operations before the situation solidifies. Greece's 1920 invasion of Turkey was justified in this way, while the 1947 decision to partition Palestine generated a civil war in advance of implementation, and the inclusion of Muslim-majority Kashmir within India has helped cause three wars. International recognition of Croatian and Bosnian independence did more to cause than to stop Serbian invasion. The war between Armenia and Azerbaijan has the same source, as do concerns over the international security risks of the several Russian diasporas.[94] Although from 1891 on Greek and Turkish Cypriots gradually segregated themselves by village, violence between these still-intermingled settlements grew from 1955 onward.[95]

Second, ethnic wars always cause ethnic unmixing.[96] The war between Greece and Turkey, the partition of India, and the 1948-49 Arab-Israeli war were all followed by emigration or expulsion of most of the minority populations on each side. More than 1 million Ibo left Northern Nigeria during the Nigerian Civil War. By the end of 1994, only

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[94] Dmitri A. Fadeyev and Vladimir Razuvayev, "Russia and the Western Post-Soviet Republics," in Robert D. Blackwill and Sergei A. Karaganov, eds., Damage Limitation or Crisis? Russia and the Outside World (Washington, D.C.: Brassey's, 1994), 107-23:116-17; Vitaly V. Naumkin, "Russia and the States of Central Asia and the Caucasus,- in ibid, 199-216:207.

[95] Bahcheli, 21.

[96] Unmixing may be dampened when one side is so completely victorious that it can control defeated groups by military occupation. Even then unmixing is likely to occur eventually, as the repressed group will usually rebel again at each opportunity. The Kurds in Iraq fought against the government in 1919, 1922-26, 1930, 1931, 1943, 1945-46, 1961-70, 1974-75, 1977, 1983, and 1985-88, and rebelled again when the central government was weakened by the Gulf War in 1991. Senate, Civil War in Iraq, 24-26.

70,000 to 100,000 non-Serbs remained in Serb-controlled areas of Bosnia, with 40,000 Serbs still in Muslim- and Croat-controlled regions. Of 600,000 Serbs in pre-war Croatia, probably no more than 100,000 remain today, not counting those in Serb-controlled Eastern Slavonia.[97]

In fact, collapse of multi-ethnic states causes ethnic unmixing even without war. The retreat of the Ottoman Empire from the Balkans sparked movement of Muslims southward and eastward as well as some unmixing of different Christian peoples in the southern Balkans. 12 million Germans left Eastern Europe after World War II, one and a half million between 1950-87, and another one and a half million since 1989, essentially dissolving the German diaspora. Of 25 million Russians outside Russia in 1989, as many as three to four million had gone to Russia by the end of 1992. From 1990 to 1993 200,000 Hungarians left Vojvodina, to be replaced by 400,000 Serb refugees from other parts of ex-Yugoslavia.[98]

Third and most important, ethnic separation causes peace. Once populations are separated into defensible, mostly homogeneous regions, both cleansing and rescue imperatives disappear; war is no longer mandatory. At the same time, any attempt to seize more territory requires a major conventional military offensive. Thus the conflict changes from one of mutual pre-emptive ethnic cleansing to something approaching conventional interstate war in which normal deterrence dynamics apply. Mutual deterrence does not guarantee that there will be no further violence, but it reduces the probability of outbreaks, as well as the likely aims and intensity of those that do occur.[99] There have been no wars among Bulgaria, Greece, and Turkey since their population exchanges of the 1920s. Ethnic violence on Cyprus, which reached crisis on several occasions between 1960 and 1974, has been zero since the partition and population exchange which followed Turkish invasion. The Armenian-Azerbaijani ethnic conflict, sparked by independence demands of the mostly Armenian Nagorno-Karabakh Autonomous Oblast, escalated to full scale war by 1992. By the end of 1993, however, Armenian conquest of all of Karabakh and the land which formerly separated it from Armenia proper, along with displacement of nearly all members of each group in enemy-controlled territories, have left no minorities to fight over. While there is no formal peace, this defensible separation has apparently ended active combat.[100]

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[97] Nelson, Nigeria, 54; World Refugee Survey 1995 (Washington, D.C.: U.S. Committee for Refugees, 128-30; "Nations on the Move," Economist, Aug. 19, 1995, 42.

[98] Rogers Brubaker, "Aftermaths of Empire and Unmixing of Peoples: Historical and Comparative Perspectives," Ethnic and Racial Studies 18/2 (April 1995), 189-218; Sheila Marnie and Wendy Slater, "Russia's Refugees," RFE/RL Research Report 2/37 (Sept. 17, 1993), 46-53; Stan Markotich, "Vojvodina: A Potential Powder Keg," RFE/RL Research Report 2/46 (Nov. 19, 1993), 13-18.

[99] Two additional factors which may enhance deterrence are balancing by third parties and the "aggressor's handicap" states are normally willing to fight harder to avoid losses than to seek gains.

[100] Bill Frelick, Faultlines of Nationality Conflict: Refugees and Displaced Persons from Armenia and Azerbaijan (Washington, D.C.: U.S. Committee for Refugees, 1993). Nakhichevan, an enclave of Azerbaijan which borders Armenia, Turkey, and Iran but not the rest of Azerbaijan, contained few Armenians and has not been a target of military operations.

Designing Settlements. Unless outsiders are willing to provide permanent security guarantees, the critical element of any stable resolution of an ethnic civil war is separation of the groups into defensible regions.[101] Total ethnic 'purity' is not necessary; rather, the requirement is that remaining minorities be small enough that they cannot be perceived by the host group as either a potential military threat or a possible target for irredentist rescue operations. Before the Krajina offensive, President Franjo Tudjman of Croatia is said to have thought that the 12% Serb minority in Croatia was too large, but that half that number would be tolerable.[102]

Geographic distribution of minorities is also important; in particular concentrations near disputed borders or astride strategic communications constitute both a military vulnerability and an irredentist opportunity and so are likely to spark conflict.[103] It is not surprising that there has been relatively little violence and no international conflict over the hundred million Muslims who live dispersed throughout most of India, while the India's portion of Kashmir with its Muslim majority has been at the center of three interstate wars and an ongoing insurgency which continues today. The Croatian forces which reconquered the border province of Krajina in August 1995 drove out nearly all Serb residents, while Serb residents of Zagreb who have chosen to remain have been little molested in four years of war.

Where possible, inter-group boundaries should be drawn along the best defensive terrain, such as rivers and mountain ranges. Lines should also be as short as possible, to allow the heaviest possible manning of defensive fronts.[104] Access to the sea or to a friendly neighbor is also important, both for trade and for possible military assistance. Successor state arsenals should be focused, by aid to the weaker and/or sanctions on the stronger, on defensive armaments such as towed artillery and anti-aircraft missiles and rockets, avoiding instruments which could make blitzkrieg attacks possible, such as tanks, fighter-bombers, and mobile artillery. These conditions would make subsequent offensives exceedingly expensive and likely to fail. Croatian forces were able to overrun Krajina in part because its irregular crescent shape meant that 30,000 Krajina Serb forces had to cover a frontier of more than 700

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101 Recent cooperation between the Irish and British governments to guarantee the rights of both groups has reduced the Catholic-Protests security dilemma in Northern Ireland and allowed some reduction of tension, but the permanence of peace may depends on the continuation of outside engagement. "Ireland's Premier Assures Protestants in North of Their Rights," New York Times, Nov. 4, 1994.

102 "The Flight of the Krajina Serbs," Economist, Aug. 12, 1995, 42.

103 In July 1992 the inhabitants of the Muslim village of Kozluk in the Drina valley were expelled because, according to local Serb commanders, the village stood "at a key road junction." Gutman, 22. Misha Glenny, The Fall of Yugoslavia: The Third Balkan War (New York: Penguin, 1993), 185, says that in 1992 the most militant Serbs in Bosnia were those living in areas whose lines of communication to Serbia were most tenuous.

104 Military theorists believe that denser force-to-space ratios tend to shift the offense/defense balance toward defense. Biddle, diss.

miles. No one expects anything similar to happen in Eastern Slavonia, which has a drastically shorter front and stronger defense stiffened by Yugoslav Army equipment.[105]

The least important question is sovereignty. Inter-ethnic security dilemmas can be nearly or wholly eliminated without political partition if three conditions are met: First, enough demographic separation that regions do not themselves contain vulnerable minorities. Second, enough regional self defense capability that abrogating the autonomy of any region would be more costly than any possible motive for doing so. Third, a degree of federalism that allows group to protect its key interests simply through control of regional governments, even with no influence at the national level.[106] Even after an ethnic war united sovereignty may still offer some advantages, not least of which are the economic benefits of a common market, but in the end it doesn't matter whether Bosnian Serbs, Croats, and Muslims get one U.N. seat or three, or whether or not they share some governmental functions. What matters is whether they have to fear further ethnic cleansing.

The Vance-Owen plan for Bosnia did not meet the minimum conditions for stable peace because it aimed at preservation of a multi-ethnic state, not ethnic separation. All of the ten planned cantons would have contained large minorities, and some would have included enclaves totally surrounded by an opposing ethnic group.[107] The 1994 Contact Group proposal to divide Bosnia 51%-49% between a Muslim-Croat federation and the Bosnian Serbs would have been better, but incorporated serious instabilities such as the isolated Muslim enclaves of Zepa, Srebenica, and Gorazde, two of which have since been overrun. A more recent U.S. proposal improves upon this by surrendering Gorazde and some land which threatens the narrow neck of Serbian communications to western Bosnia in return for additional land around Sarajevo.[108] Better still would be John Mearsheimer and Robert Ape's proposed

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[105] Note to self: collect data on forces in Slavonia.

[106] Minimum regional powers must include control over: 1) a substantial share of tax revenue; 2) educational, religious, and cultural policy; 3) if population mobility threatens change of regional majorities, control of immigration; and 4) police and other internal security agencies. Regions need not have military forces, provided that the offensive military capabilities of the central government remain relatively weak. Regional autarky is almost certainly not necessary; the impact of economic interdependence is indeterminate, as it both decreases motiLs to secede and increases incentives to seek control of the whole country.

[107] Vance-Owen did attempt to provide some regional self-defense by specifying that police would be cantonal while national defense would be supervised by an authority "designated by the International Conference on the Former Yugoslavia." "Annex: Proposed Constitutional Structure for Bosnia and Herzegovina," International Conference on the Former Yugoslavia, document STC/2/2, Oct. 27, 1992. For a survey of several 1992-1994 peace proposals, see Woodward, Balkan Tragedy, 302-17.

[108] "Enter the Americans," Economist Aug. 19, 1995, 41-42.

partition, which accepts additional population transfers in order to get Bosnia much shorter fronts incorporating defensible terrain.[109]

A major barrier to consideration of realistic solutions for Bosnia has been squeamishness about population transfers. As there are fewer and fewer unmoved people left to move, more realistic proposals are gradually emerging, although as recently as August 1995 the U.N. has been reluctant to assist Serbs wishing to leave Krajina after its conquest by Croatia.[110] If the international community had had the stomach for large-scale relocation in 1992, most of the lives that have been lost in Bosnia could have been saved.

In general, the more intermingled the warring populations, the greater the scale and ferocity of ethnic cleansing, and thus, paradoxically, the greater the need to move people for ethnic separation, the more need to moved and the harder the task. Despite the urgency of separating Rwandan Hutus and Tutsis in Spring 1994, their relatively even distribution throughout the country would have made it extremely difficult even if outsiders had been willing to take on the task. The war and the massacres, however, have partially separated the survivors, with half the Hutu population outside the country. A partition of Rwanda is now both desirable and feasible. Although the Tutsi minority controls the country today, it can look forward to Burundistyle endemic ethnic violence at best, and full-scale rebellion and/or invasion at worst.[111] The Tutsis would do better to surrender some territory for a smaller, defensible, ethnically Tutsi state supported by international patrons. The patrons would have to guarantee this rump state's security, especially by assuring that it would always be better armed than a revanchist Hutu state, and also persuade neighbors such as Uganda to permit trade access. The alternative, sooner or later, is another genocide.

Intervention. When separation of populations is required, circumstances will determine the level of international action required to achieve it. If there is an existing military stalemate along defensible lines, the international community can simply recognize and strengthen it, providing transportation, protection, and resettlement assistance for refugees. Where one group cannot defend itself unaided, however, intervention will be necessary. While the intervention itself could be carried out by any willing actors, U.N. sanction is highly desirable, most of all to head off possible external aid to the group identified as the aggressor. The three available tools are sanctions, military aid, and direct military intervention.

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[109] John J. Mearsheimer and Robert A. Pape Jr., "The Answer: A Three-Way Partition Plan for Bosnia and How the U.S. Can Enforce It," The New Republic, June 14, 1993, 22-28.

[110] Raymond Bonner, "Croats Celebrate Capturing Capital of Serbian Rebels, New York Times, Aug. 8, 1995.

[111] Although the R.P.F. exercised restraint during last year's victorious campaign, incidents of ethnic cleansing of Hutus are increasing, including more than 4,000 killed at Kibeho in April 1995. In August Zaire began large-scale expulsions of Hutu refugees. "From Awful to Worse," Economist, April 29, 1995; New York Times, Aug. 23, 1995.

Economic sanctions are unlikely to influence combatants in ethnic wars, who often see their territorial security requirements as absolute. Hyperinflation and economic collapse have reportedly reduced Serbian government support for the Bosnian Serb rebels, but have had no impact on the determination of the latter.[112] Armenians have already suffered five years of extreme privation rather than give up Nagorno-Karabakh.[113]

Whether military aid to the client can achieve an acceptable partition depends on the population balance between the sides, and to a lesser extent on geography and the organizational cohesion of the client group.[114] Aid could not enable Chechen or Sikh secession, but has been decisive Abkhazia and probably could be in Bosnia. The more serious problem with "arm's length" aid is that it cannot guarantee good behavior by the client. While Bosnian Muslims have committed fewer atrocities than have their enemies, their behavior could worsen if their capabilities increased unrestrained by an international ground presence.[115] Aid alone is also not likely to restrain atrocities by ethnic aggressors.

When either the client is too weak to achieve a viable partition with material aid alone, or when the client cannot be trusted to abide by promises of non retribution against enemy civilians, the international community must designate a separation line and deploy an intervention force to take physical control of the territory on the client's side of the line. We might call this approach "conquer and divide."

The separation campaign is waged as a conventional military operation. The larger the forces committed the better, both to minimize interveners' casualties and to shorten the campaign by threatening the opponent with the specter of overwhelming defeat. On the ground, the interveners begin at one end of the target region and gradually advance to capture the entire target territory, maintaining a continuous front the entire time. It is not necessary to conquer the whole country; indeed, friendly ground forces need never cross the designated line. As friendly forces advance into each locality, opposing ethnics are interned, to be exchanged after the war. This removes the enemy's local support base, preventing counterinsurgency problems from arising. Enemy civilians should be protected by close supervision of local troops in action, as well as by foreign control of internees.

The final concern is atrocities against civilians of the client group in territory not yet captured or beyond the planned separation line. Some of this must be taken for granted, since

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112 David Gompert suggests that sanctions and an --indefinite cold war" would eventually force Serb concessions. Gompert, "How to Defeat Serbia," Foreign Affairs 73/4 (Jul./Aug. 1994), 30-47.

113 Pape, Bombing to Win: Air Power and Coercion in War (Ithaca, N.Y.: Cornell University Press, forthcoming 2525), shows that even severe punishment rarely causes concessions on what targets see as their homeland territory.

114 For a proposal to use President Clinton's "lift and strike" policy to partition Bosnia, see Mearsheimer and Pape, "The Answer."

115 Croatian forces have attacked Serb refugees fleeing Krajina. Jane Perlez, "Thousands of Serbian Civilians are caught in Soldier's Crossfire, New York Times, Aug. 9, 1995.

ongoing atrocities are the most likely impetus for outside intervention. The question is whether intervention might actually increase attacks on civilians.[116] One advantage of a powerful ground presence is that opponent behavior can be coerced by threatening to advance the separation line in retaliation for any atrocities.[117]

Once the military campaign is complete and refugees have been resettled, further reconstruction and military aid may be needed to help the client achieve a viable economy and self-defense capability before the interveners can depart. The ease of exit will depend on the regional geography and balance of power. Bosnia has sufficient population and skills to be made economically and militarily viable, provided access to the outside world through Croatia is maintained. Although the weakness of the Turkish Republic of Northern Cyprus has required a permanent Turkish garrison, the almost equal weakness of the Greek Cypriots allows the garrison to be small, cheap, and inactive. U.S. Operation Provide Comfort helps secure the Kurdish enclave in Northern Iraq by prohibiting Iraqi air operations as well as threatening all strikes against an Iraqi ground invasion of the region. This intervention has no easy exit, however, since the Iraqi Kurds are landlocked and threatened by Turkey, which is waging a war against its own Kurdish minority. Real security for the Kurds might require partitioning Turkey as well as Iraq, a task no outside actor is willing to contemplate.

IV. OBJECTIONS TO ETHNIC SEPARATION AND PARTITION

There are five important objections to ethnic separation as policy for resolving ethnic conflicts: that it encourages splintering of states, that population exchanges cause human suffering, that it simply transforms civil wars into international ones, that rump states will not be viable, and that, in the end, it does nothing to resolve ethnic antagonisms.[118]

Among most international organizations, Western leaders, and scholars, population exchanges and partition are anathema. The integrity of states and their borders is usually seen

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[116] Advance announcement of the partition line should reduce at least short-term incentives for ethnic cleansing, since there is no point to cleansing areas which the interveners will seize anyway, and no need in areas which the interveners do not propose to attack.

[117] Pape, Bombing to Win, shows that credible threats to take territory by force do generate coercive leverage. The inflexibility of locally-tied ethnic militias also renders them more vulnerable to piecemeal conquest or coercion. In 1948, once the Israelis had captured several villages in the Northern Galilee in 1948, the defenders-- and most of the inhabitants-- of the remaining towns of the region fled. Croatian Serbs were disappointed that Bosnian Serbs did not help them defend against the Croatian offensive which overran Krajina, while Vojvodina Serbs are said to have resisted conscription to fight in Croatia or Bosnia. Jena Perlez, "Serbs Become Latest Victims in Changing Fortunes of War,-- New York Times, Aug. 7, 1995; Nenad Canak, leader of the Serbian Social Democratic Party, cited in Markotich, "Vojvodina: A Potential Powder Keg," 17.

[118] Robert Schaeffer, Warpaths: The Politics of Partition (New York: Hill and Wang, 1990), makes all the criticisms above and several others.

as paramount, while self-determination takes second place.[119] In ethnic wars, saving lives may require ignoring state-centric legal norms. The legal costs of ethnic separation must be compared to the human consequences, both immediate and long term, if the warring groups are not separated. With apologies to Winston Churchill, separation is the worst solution except for all the others.

IV.A. PARTITION ENCOURAGES SPLINTERING OF STATES.

If international interventions for ethnic separation encourage secession attempts elsewhere, they could increase rather than decrease global ethnic violence.[120] This is unlikely for two reasons. First, government use of force to suppress them makes most secession attempts extremely costly; only groups which see no viable alternative try. More important, because international intervention is only likely on behalf of groups perceived as victims of atrocious crimes, it would reduce, not increase, incentives to resort to violence, both for governments and for secessionists. Westerners have considered helping Bosnian Muslims against Serb attackers, trying to save Tutsis from genocide in 1994, and are engaged in protecting Kurds in Northern Iraq; international support for the aggressors in these cases would have been unimaginable.[121]

Conversely, an expectation that the international community will never intervene encourages both repression of minorities, as in Turkey °F the Sudan, and wars of ethnic conquest, as by Serbia.[122]

IV.B. POPULATION TRANSFERS CAUSE SUFFERING.

Separation of intermingled ethnic groups necessarily involves significant refugee flows, usually in both directions. Population transfers during ethnic conflicts have often led to

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[119] The U.N. Declaration on the Granting of Independence to Colonial Countries and Peoples says that "All peoples have the right to self-determination" but also that "Any attempt aimed at the partial or whole disruption of the national unity and territorial integrity of a country is incompatible with the purposes and principles of the United Nations." U.N. Resolution 1514(XV), 1960.

[120] Anthony Smith argues that the collapses of Czechoslovakia, Yugoslavia, the Soviet Union, and Ethiopia are having such a demonstration effect. Smith, "The Ethnic Sources of Nationalism," in Brown, Ethnic Conflict and International Security, 27-41:39.

[121] A related criticism, that partition would reward aggression to seize coethnic "homelands" in neighboring states, is equally misguided. The purpose of any intervention in Bosnia, for instance, would be to reduce Serb gains (and Bosnian losses) compared to the alternative of not intervening.

[122] If the prospect of international intervention did raise perceptions of the viability of secession, it is still not clear that this would lead to more splintering; it could actually forestall some attempts by making power-sharing agreements work better. If Lijphart is right, groups which know they can secede should feel less need to.

much suffering, so an obvious question is whether foreign intervention to relocate populations would only increase suffering.[123] In fact, however, the biggest cause of suffering in population exchanges is spontaneous refugee movement. Planned population transfers are much safer. When ethnic conflicts turn violent they generate spontaneous refugee movements when people flee from intense fighting or are kicked out by neighbors, marauding gangs, or a conquering army. Spontaneous refugees frequently suffer direct attack by hostile civilians or armed forces. They often leave precipitately, with inadequate money, transport, or food supplies, and before relief can be organized. Finally, they make vulnerable targets for banditry and plunder, and are often so needy as to be likely perpetrators also.[124] Planned population exchanges can address all of these risks by preparing refugee relief and security operations in advance.

In the 1947 India-Pakistan exchange, nearly the entire movement of between 12 and 16 million people took place in a few months. Although the British had planned for this movement, they were surprised by the speed with which it took place, and were not ready to control, support, and protect the refugees. Estimates of deaths go as high as 1,000,000. In the first stages of the 1920s population exchanges among Greece, Bulgaria, and Turkey hundreds of thousands of refugees moved spontaneously and many died due to banditry and exposure. When after 1925 the League of Nations deployed capable relief services, the remaining transfers-- 1,000,000, over 60% of the total — were carried out in an organized and planned way, with virtually no losses.[125]

A related criticism is that transfers require the interveners to operate de facto concentration camps for civilians of the opposing ethnic group(s) until transfers can be carried out. This is the safest option, compared to the alternatives of administration by the local ally or allowing the war to run its course. As with transfers, the risks to the internees depend on planning and resources.[126]

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[123] International institutions generally oppose transfers. The position of the U.N. High Commission for Refugees is that it is better to bring "safety to people, rather than people to safety.- UNHCR, Working Document for the Humanitarian Issues Working Group of the International Conference on the Former Yugoslavia" (1992).

[124] Frelick, Faultlines of Nationality Conflict, 11.

[125] Schaeffer, Warpaths, 155-56; Michael R. Marrus, The Unwanted (New York: Oxford University Press, 1985); Richard Ned Lebow, Divided Nations in a Divided World.

[126] Boer civilians interned by the British suffered grievously from insufficient provision of food and shelter, but ethnic Japanese relocated from the West Coast in World War II suffered little or no increased incidence of death or illness. Out of 120,313 internees, 1,862 died in custody compared to 5,981 births to the same group. Two people were killed by military police during a demonstration in December 1942. U.S. Dept. of the Interior War Relocation Authority, WRA: A Story of Human Conservation (G.P.O., no date), 49, 146.

IV.C. SEPARATION MERELY SUBSTITUTES INTERNATIONAL FOR CIVIL WARS.

Post-separation wars are possible, motivated either by revanchist irredentism or by security fears if one side suspects the other of revisionist plans. The frequency and human cost of such wars, however, must be compared to the likely consequences of not separating. When the alternative is intercommunal slaughter, separation is the only defensible choice.

In fact the record of twentieth century ethnic partitions is fairly good. The partition of Ireland has produced no interstate violence, although intercommunal violence continues in demographically mixed Northern Ireland. India and Pakistan have fought two wars since partition, in 1965 over ethnically mixed Kashmir, while the second in 1971 resulted not from Indo-Pakistani state rivalry or Hindu-Muslim religious conflict but from ethnic conflict between (West) Pakistanis and Bengali ethnic conflict. Indian intervention resolved the conflict by enabling the independence of Bangladesh. These wars have been much less dangerous, especially to civilians, than the political and possible physical extinction which Muslims feared if the subcontinent were not divided.[127] The worst post-partition history is probably that of the Arab-Israeli conflict. Even here, civilian deaths would almost certainly have been higher without partition. It is difficult even to imagine any alternative; the British could not and would not stay, and neither side would share power or submit to rule by the other.

IV.D. RUMP STATES WILL NOT BE VIABLE.

Most analysts of ethnic conflict question the economic and military viability of partitioned states.[128] Economically non-viability must mean either an economic collapse so total that the state apparatus disintegrates, or that incomes fall so low that the inhabitants regret their independence. History, however, records no examples of ethnic partitions which failed for economic reasons.[129] In any case, interveners have substantial influence over economic outcomes; they can determine partition lines, guarantee trade access, and, if

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[127] It has been argued that Muslim fears were due more to manipulation by Muslim League leaders than to any real threat, e.g. Brass, Language, Religion, and Politics in North India. However, even we accept that Muslim political identity was largely constructed by political entrepreneurs in the 1920s and 1930s, the accelerating intercommunal violence of the 1940s was very real.

[128] Schaeffer, Warpaths; Kamal S. Shehadi, Ethnic Self-Determination and the Break-up of States, Adelphi Paper No. 283 (London: IISS, 1993), 9. Amitai Etzioni, "The Evils of Self-Determination," Foreign Policy 89 (Winter 199293), 21-35, argues that secession states are likely to become both economic failures and undemocratic.

[129] Despite considerable economic hardships, in part due to being blockaded by hostile neighbors, Macedonians do not appear ready to give up their independence nor Armenians their territorial claims in Nagorno-Karabakh. Lack of international recognition has depressed economic performance in the Turkish Republic of Northern Cyprus, but Turkish Cypriots are not interested in recreating the previous Cypriot state.

necessary, provide significant aid in relation to the economic sizes of likely candidates. Peace itself also enhances recovery prospects.

Thus the more important issue is military viability, particularly since interventions will most often be in favor of the weaker side. If the client has comparable economic strength to the opponent, it can provide for its own defense. If it does not, the interveners will have to provide military aid and possibly a security guarantee.

Ensuring the client's security will be made easier by the poverty of the opponent's options for revision. First, any large-scale conventional attack is likely to fail because the interveners will have drawn the borders for maximum defensibility and ensured that the client is better armed. If necessary, they can lend further assistance through air strikes. Breaking up conventional offensives is what high technology air power does best.

Second, infiltration of small guerrilla parties, if successful over a period of time, could cause boundaries to become "fuzzy," and eventually to break down. This has been a major concern of some observers of Bosnia, but it should not be. Infiltration can only work where at least some civilians will support, house, feed, and hide the guerrillas. After ethnic separation, however, any infiltrators would be entering a completely hostile region where no one will help them; instead, all will inform and cooperate fully with authorities against them. In Mao's terms, the fish would be attempting not to swim in the sea but to crawl up onto the dry land.[130]

Finally, while it could not affect the territorial settlement, a dissatisfied group, or some of its members, could engage in cross-border bombardment or terrorism. Retaliatory capabilities should allow the client to dampen, if not stop this.[131]

IV.E. PARTITION DOES NOT RESOLVE ETHNIC HATREDS.

It is not clear that it is in anyone's power to do this once there has been large-scale violence, especially murders of civilians. In the long run, however, separation may help reduce inter-ethnic antagonism; once real security threats are reduced, the plausibility of hypernationalist appeals may eventually decline. Certainly ethnic hostility cannot be reduced without separation. As long as long as either side fears, even if only sporadically, that it will

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[130] The actual infiltration threat would be closer to that posed by Arab terrorists against Israel, which has never been a threat to Israel's territorial integrity.

[131] The record on this is mixed. The threat of Israeli retaliation did induce the Jordanian a Syrian governments to clamp down on terrorist attacks launched from their territory, but the much weak (because ethnically fractured) Lebanese state could not. Fortunately, the rump states after an ethn partition are likely to resemble the former more than the latter.

be attacked by the other, past atrocities and old hatreds can always be re-aroused easily. If, however, it becomes and remains implausible that the other group could ever seriously endanger the nation, hypernationalist drum-beating may fall on deafer and deafer ears.

V. THE MORALITY AND PRACTICALITY OF PARTITION

Outside intervention in ethnic civil wars is more feasible and less costly than counterinsurgency analogies suggest. International intervention to establish defensible ethnic separation can stop wars, save lives, and bring about stable peace. However, effective humanitarian action may not be cheap. Peace keeping approaches lack leverage, while aid or sanctions alone will rarely be sufficient.

Separation and partition can be still be attacked, however as immoral and impractical. Some argue that partition of Bosnia would ratify the arguments of bloody-minded extremists such as Milosevic and Tudjman that ethnic cleansing is necessitated by intractable ancient hatreds, when in fact they themselves whipped up hypernationalist fears for their own political ends. This is wrong. Possibly the construction of ethnic hostility could have been contained by intervention in Yugoslav political discourses in the 1980s. It is too late now; too much blood has flowed. What the international community can still do is provide surviving Muslims with physical security and a defensible homeland. The claims of justice demand that we go further, to the capture and trial of the aggressors, but that is beyond the scope of this paper, whose focus is the minimum requirements for protection of peoples endangered by ethnic war.

On practicality, one could argue that the Bosnia record demonstrates that the international community cannot muster the will for much lesser enterprises, let alone the campaigns of conquest envisaged in this paper. Even if true, the analysis above has four values. First, it tells us what apparent cheap and easy solutions are not viable. Second, it identifies the types of solutions to aim at through lesser means (aid or sanctions) if those are the most that outsiders are willing to do. Third, even if we are not prepared to intervene, it explains what we would like other, more interested, powers who may be willing to act in certain cases to do and not do. Fourth, if Western publics and elites understood that the costs of military intervention in ethnic wars are lower, the feasibility higher, and the alternatives fewer than they now believe, perhaps this option would become more politically viable.

Ultimately we have a responsibility to be honest with ourselves as well as with the victims of ethnic wars all over the world. The world's major powers must decide whether they will be willing to spend any of their own soldiers' lives to save strangers, or whether they will continue to offer false hopes to endangered peoples.

EUROPE'S ARMIES TRAIN FOR PEACEKEEPING AND WAR

J. Mackinlay and J. Olsen [1]

CHANGING SECURITY REQUIREMENTS

In the new security era initiated by the collapse of the Warsaw pact, long term defence plans continue to fall victim of radical reform. Large conscripted defence forces are politically unpopular and the feeling that Europeans are safer than ever before has reduced willingness to pay for defence. In reality we face continued risks, only their nature has altered. Without significant natural borders and the former Cold War divisions eroding fast, Europe is growing economically more interdependent. Since the Berlin wall was removed in 1989 change in Europe has been swift and pervasive. The collapse of the Warsaw pact and the removal of the armies from the front lines states took place with an unaccustomed openness. After the highly visible withdrawal of the Soviet military, NATO states of readinessslackened; the intense cycle of intelligence collection, battle planning and unit training that was driving subordinate commands from Norway to Turkey began to lose its relevance. Europe was searching for a credible threat, without one, military forces on both sides faced rising domestic pressures for reduction.

For years leaders in both camps had successfully used the specter of total war to maintain defense as a top priority in national spending. In a new security environment their large, conscripted armies had become politically unattractive. Despite the fact that European nations felt safe, they faced a continued risk of conflict, demonstrated by successive crisis in the Gulf, the Balkans and the emerging states of the former Soviet Union. However, the domestic will to sustain the forces needed to protect national territory and their vulnerable interests had been greatly reduced. The threat had altered, becoming less immediate, more complicated and above all, less easy to explain to an unsympathetic electorate. There was still a need for conventional forces to protect the homeland, the seat of government and vital installations within the state, but it was hard for defence officials to explain how these could be seriously threatened.

Without significant natural borders and the Cold War divisions eroding, Europe needed a continental approach to security, not to satisfy the semantics of multilateral harmony but in response to real changes in their environment. Despite much publicised spats, central and western European nations were growing economically more interdependent, their populations moving across borders more freely; shared security interests were widening to include the guarantee of air passages, safety of commercial aircraft, shipping, protection of

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[1] Presented by J. Mackinlay

fisheries and an expanding network of international highways, railroads and pipelines. In addition to overseas investments and installations managed by their expatriate nationals, each had an increasing element of its population abroad, many working overseas as individuals, others left behind as residual elements of a former colonial era. The progressive globalisation of economic activity and communications, and the increasing interdependence of continental states urged for a collective security approach that spanned the former east-west divide and placed quarrelling politicians under a constant pressure to return to the multilateral negotiating forums.

These continental interests were threatened less by interstate aggression (invasion, air attack etc.) than by knock-off effects of civil violence. Prolonged conflict in the Balkans and embryo states of the former Soviet Union had generated huge displaced populations that would be a major source of political tension and violence for several decades. The wider security ramifications were not fully understood; defence planners faced new political, military and humanitarian problems that combined into a single crisis on a massive scale. At operational level these complex emergencies did not respond to the heavy bludgeoning presence of conventional troops capable of war-fighting only. They required a more sophisticated approach, a military force which had the flexibility to deploy as a policing presence, but at the same time also had the capability for war fighting.

Defence policy was becoming increasingly convoluted; a threat addressed in the Balkans might enhance the overall security of the continent. Some NATO and central European politicians felt "the more we can contribute to stability through preventive means, the less risk we risk having to pay subsequently for remedial measures..if we fail to contribute to these efforts, either directly or multilaterally, we stand to lose out. If we do not shape events ourselves, others will shape them for us." However these aspirations posed a dilemma; against a background of political demand for cuts in strengths and spending, the problem for central European and NATO nations was that the cost of modern conventional defense forces was spiralling as continuing technical development pushed across new military thresholds. Competing in this arena was an unattractive political manifesto, besides being extremely expensive, it had the effect of alienating the defence forces from public sympathy Smaller nations strived to resist becoming dependent on unequal partnerships with the powerful military nations which possessed this technology.

In addition to former communist states anxious to place themselves beyond the reach of Russian influence, there were now more practical reasons why, as part of the same continental system, European nations had to take a more multilateral view of their shared security interests. Very few of them could protect their extended continental interests beyond their national borders except as part of a multinational force. Despite the "interlocking and overlapping" collective structures in Europe 2, multinational military action, for example in former Yugoslavia, has so far been authorized under the overall aegis of the UN. Although the UN had failed to save states from subjugation in the past, even for NATO nations it was now assuming much greater importance as a security structure to which they wished to contribute. It was becoming increasingly important that the system improved and that

individually they could influence its development, increasingly "UN participation" was becoming a line item in defense budgets.

NEW APPROACH TO DEFENSE

For defense planners this posed two requirements: homeland defense which needed modern conventional forces, and the protection of the wider, collective interests of the continent. These needed forces which could be deployed as part of a multinational response. Despite the resistance of Cold War era military officials who found UN peacekeeping a distraction that diminished war fighting capability participation in UN forces had growing political attractions. Besides collective security and foreign policy motives discussed above, there were military advantages. For some former communist states in which the armed forces were regarded as part of the ancient regime, UN operations improved their unattractive image and more important, provided an important entry point from which they could learn to operate with western armies and develop cooperative relationships. In NATO nations where the armed forces were politically unpopular for different reasons, peacekeeping gave them a post Cold War rationale and also improved their public image.

As part of NATO or the Warsaw Pact, smaller nations in central and western Europe had exercised no more than a minor influence in decision making forums. Their individual political concerns were barely recorded, in some cases as mere footnotes, in the overall consensus. But in the ad-hoc UN structures that had deployed to former Yugoslavia and other crises, they were beginning to enjoy greater responsibility. As contingent contributors in smaller, less technology-dependent UN forces, their profile was more visible. In particular at force level their influence became headline news on a daily basis which allowed defense officials to argue for a newly acquired, morally acceptable, usefulness. Involved in dangerous but rewarding situations, it increased support for service men and women It gave central European armies, whose status in a young democracy was uncertain, an avenue towards political acceptability. Above it all seemed to raise a nation's international standing and capability for independent foreign policy decisions outside the regional or collective security framework

The situation seemed to require two different kinds of military force: war fighting units which relied on firepower, tactical mobility and technical superiority for success, and lightly armed troops which depended more on policing, observation, communicating and negotiating skills. In addition to the publicly agreed political and military reasons for despatching a UN multinational force, every nation had its own underlying rationale for participation. Each army was differently experienced, recruited manpower from varying sectors of society and trained according to its own standards. On the ground the contingents produced by this web of variables each acted, or reacted, in a different manner to a given situation. If a multinational force was to maintain its cohesion and have a common approach towards success, it was becoming crucially important to understand these differences. How have European nations responded to their swiftly changing needs? A recent study ( ) shows how Denmark and Poland, both with conscripted armed forces, have taken energetic steps to

reconcile the apparently conflicting demands of politicians calling for defence cuts, the continuing need for effective conventional forces and a new requirement for better trained and more robustly equipped contingents for the UN.

POLAND: PREPARING FOR A ROLE IN EUROPE

Although the Warsaw Pact officially ended in July 1991, its military apparatus began to be dismantled earlier. For Poland the impact of the new security era began under Defense Minister Kolodzejczk. The vacated, westward facing, Russian bases were left unmanned; and moving away from their former Warsaw Pact role, Polish armed forces took on a more omni-directional posture with the creation of a new military district, Krakow MD. The army's former task within the overall Warsaw Pact war plan, to maintain mobility in the northern sector, was abandoned with the reduction and disestablishment of the bridging and amphibious units maintained for that purpose. The size of the armed forces was also reduced from approximately 400,000 to 230,000 by 1994, and continuing reductions may take it below 180,000. The size of the general staff and the number and age of the general officers were also reduced.

As these policy changes and the general reduction of the conventional forces be gan to take place, Poland opened a new chapter in its UN commitments. In 1992, at a time when the UN was extending its strategic reach with new forces in Cambodia and former Yugoslavia, Poland increased its peacekeeping contribution from 150 to 2000. Under a new government, defense minister K Skubinzewski was in a politically strong enough position to push for these initiatives and the General Staff were ready to accept them. A new UN Training Centre was established at Kielce to prepare and sustain troops for Poland's overseas commitments which now included: observers in Morocco Rwanda, Kuwait, Angola and Iraq, and larger contingents with observers in the Golan, Lebanon and Croatia

After a long period as a subordinate part of a larger military alliance which had limited its options and interests, a foreign policy and related military strategy was emerging in which Poland's status as an autonomous central European power was the key factor. Poland's strategic interests were increasingly linked to a position in a wider continental economic and security system that began to span the former east-west divide. Besides the need to maintain a secure but separate relationship with Russia, Poland now had dynamic foreign policy concerns: as part of a growing central European lobby, as a participative member of the UN, as a comparatively powerful state in the Baltic sub-region and as a prospective member of the western European club.

These aspirations demanded a totally fresh approach towards defense planning. However, consideration of strategic change has been overshadowed by the domestic power struggle for constitutional control of the defense organisation. Although the diminution and dismantling of the MOD set into reverse democratization procedures for armed forces' control, Poland's inexorable desire to move towards western Europe has dictated that democratic control will in due course resume. Neveltheless at a secondary level the Polish

strategic debate has been focused on the need to reshape its armed forces to satisfy three distinct requirements: the defense of the Polish homeland; the establishment of effective independent formations which could contribute to future coalition task forces probably involving western European armed forces; and its continuing deployment of up to 2000 troops on UN operations world wide.

MOTIVES FOR PEACEKEEPING

Poland has been involved in UN peacekeeping since 1973 with UNEF II. Isolated by Cold-War divisions in Europe, peacekeeping operations offered a means to break out of the closed community of communist states in a way that was acceptable to both the west and the Russians. Favorable exchange rates for dollar repayments also made it economically rewarding. However, the pervasive influence of bipolar rivalry meant that Poland, as a member of the Warsaw Pact, could never take on more than minor support or logistic roles. By releasing her from this limitation, the end of the Warsaw Pact had an energizing impact on Poland's peacekeeping activities, allowing Polish military units to take on a much wider range of tasks.

In 1992 foreign policy radically changed after the reduction of Soviet influence over the central European nations. An immediate manifestation of this was a surge of new Polish peacekeeping commitments. Now that the previous limitations on her role in overseas UN operations had been lifted, Poland had a more ambitious combination of political, military, economic and moral reasons to participate in UN peacekeeping. In each contingency any one particular motive could predominate. But underlying them all was Poland's overwhelming desire to demonstrate to its future coalition partners, primarily in the west, that it has a consistent record as a contributor to peace and security structures. Moral reasons for participation are also cited in each ministry. Foreign office officials today maintain peace is indivisible; security in former Yugoslavia means peace for Poland, participating in a multinational force encourages peace between soldiers. Government officials see peacekeeping idealistically as an honorable activity in which Poland's troops are associating with other chosen forces to act for world peace. It is part of the costs of addressing the imbalance between rich and poor nations, the developing nations and the old world.

Militarily the pay-offs are more tangible than the political, but they too can be seen in the context of Poland's strong desire for NATO and western European acceptance. Since 1992 Polish activity in the UN has broadened, in addition to its former logistic and support roles, it now provides combat infantry units in Syria and Croatia. UN operations are an important experience opportunity. They give officers their only encounter with active war zones, the conduct of military operations with prospective military partners from NATO, the knowledge and use of new equipment and an understanding of NATO's operating procedures. In the international community of officers and senior officials it also establishes Poland as a reliable member of the club, part of the peace keeping community which will continue to meet and interact at conferences long after the seminal operational experience is over. The degree to which this effort has been successful can be measured by the number of Polish staff officers

now working in UN operations HQs around the world and in New York. In UNIFIL, Poland's first international Force Commander, Major General Mistal took command in March 1995.

PROVIDING PEACEKEEPERS

In some former communist armies the advent of democracy has led to a decline in public esteem for which participation in peacekeeping activities provided a respectable new raison d'être. But this has not been the case for the Polish army which historically has been regarded with trust and respect. The traditional mythology of their role in two world wars survived the bruising effects of martial law in the early 1980's. Polls by the military Institute for Social Research show a continuing public popularity at a time when other former Warsaw Pact armies face domestic antipathy. The Polish therefore did not need peacekeeping as an image-softening device; for them the main problem has been to maintain a constant supply of high quality manpower for international forces.

In a Polish UN contingent 35% of the manpower is professional, comprising long service of officers and senior non-commissioned officers; 5% are contract specialists for example doctors, mechanics, technicians, even laboratory analysts needed for the medical unit in the Golan and Lebanon force. The remaining 60% are conscripts who have volunteered for UN duty . The professional element serve for twelve months in the operation area, contract personnel have a flexible assignment and the volunteer conscripts may serve six, or in some special cases twelve months. In a force that is already established, replacement needs are iniated from the field and MOD Warsaw decide which military HQ is to provide them. In the past this system produced contingents in the field that were difficult to knit together because the component parts came from disparate commands and served as a group for a short while before dispersing back to their parent districts. Polish MOD staff look with envy at British and United States military organizations where replacements is by unit and not by individuals. An interesting move to overcome this lack of cohesion has been to allocate to each military district a particular field operation so that Krakow military district provides manpower for UNDOF Syria, Silesia MD for former Yugoslavia and Pomerania for Lebanon.

In the 60% found from volunteer-conscripts, manpower needs are oversubscribed by 100%. The popularity of UN service in Poland may be due to additional pay received for UN service, but more attractive is the prospect of going abroad, experiencing wider challenges and the stimulation of a multinational operation. The unglamorous option of life in a Polish home garrison is an additional incentive to volunteer. The long term popularity of UN service may become a strong mitigating factor in the continuation of a conscript system, in the short term it places Polish army staff in the happy position of selecting only high standard young men for UN service Selection depends on education, technical qualifications, language ability and medical fitness which is rigorously re-assessed despite initial tests on conscription

In this manner approximately 2000 troops are selected from existing units in the case of professional staff and from training centres in the case of the 60% volunteer-conscripts. After a minimum of three months basic training, the latter move to the UN Training Centre at

Kielce where, together with the professional element, they specialize in UN requirements. Kielce Training Centre programs are extremely cornplex because they have to provide trained replacements for Poland's disparate peacekeeping commitments which range from military observers world-wide, to infantry and logistic battalions. Kielce runs a common UN course for all lasting about a week and then provides a range of specialized courses for each category of manpower replacement. These include courses for operational units, HQ staff, logistic units, military observers and military police. In addition Kielce has a new developed language training centre, the requirement for English speakers is heavy, each infantry battalion needs a minimum of l00 and in addition every specialist requires English proficiency. According to MOD of officials, a general staff paper published in November l 994 recommended a ceiling of 2000 troops deployed to the UN. Kielce's primary task is to sustain this deployment by annual replenishment. The figure has already been exceeded by 100 in l995.

Poland's more frequent exposure to foreign armies and the imposition of new training and individual standards for UN duty impacts almost entirely on the professional element. Volunteering conscripts will leave on completion of their short service, taking with them the language and experience gained with the UN. The long term residual benefits are invested with the officers and senior non commissioned (SNCO) officers. Here the pool of experience is growing. More young officers and SNCOs have English proficiency, driving skills and foreign army awareness than before. But inexorably, meeting the needs of UN service and the efforts to train up and expose successive cadres of young men to this new era of multinational operations will begin to exert a revolutionizing influence. Delegation of responsibility down to junior commanders must become the norm, and the need for better trained "thinking soldiers" who are ideally professionals and nor conscripts, may in future demand a new approach towards the army's command, leadership and manpower needs. How long will the current conscript system continue to provide a cost-effective flow of suitable young men when "conscription-corruption" seems to allow the most intelligent element of the population to evade call-up. This question is already facing a number of NATO nations and will become an issue for Poland too as a by-product of the ongoing revolution. The problem is not to provide a constant flow to but retain the benefits of valuable training and experience which at present hemorrhages out of the system at 60 % every year.

Another issue which faces the MOD is the changed nature of UN operations. Both MOD and MFA officials agree that casualty tolerance in Poland's free press is likely to be low. Poland's long-standing experience in traditional peacekeeping has to some extent predisposed it for operations where "consent" is an almost prerequisite and the need for using force consequently low. At Kielce there is no operational concept to address those peace operations which may require a more robust approach than traditional peacekeeping. In contrast to many NATO nations, Polish volunteer conscripts do not carry out field firing or collective training which could prepare them for situations where they might come under effective fire and have to return fire in a controlled and accurate manner. This lack of preparation will preclude them from an important category of mid-level operations, or if they participate, expose unprepared contingents to situations where, if things go wrong their international reputation may be the first casualty.

DENMARK: WAR FIGHTING PEACEKEEPERS

Denmark's vulnerable position at the cross roads between east and west has required an acute sense of balance to ensure survival. Initially Denmark maintained an almost neutral position as diplomatic bridgebuilder between the opposed divisions in Europe, and only after the "Easter Crisis" of 1948 turned to NATO. For 20 years Denmark's government maintained an uncontroversial position in the NATO alliance until the late 1970s. A weak coalition in parliament (Folketinget) following a policy of domestic appeasement, opposing government defense commitments and alliance obligations, consequently throughout the 1980s Denmark found itself in opposition to the allied consensus, its national concerns reflected merely as footnotes in overall NATO policy.

In the late 1980s as east-west relations grew more relaxed, Danish defense planners began to anticipate the needs of post Cold War security requirements. A change of government and the parliamentary balance within Folketinget allowed a fresh approach to be developed which cleverly reflected the future political demands for defence cuts and at the same time Denmark's foreign policy and security needs. Although the Danes now saw themselves as "being never so secure as today" they reorganized their defense force in a way that has allowed them to maintain a standing contribution to NATO as part of 1 UK Division and at the same time contribute one of the most powerful armed contingents to the UN in former Yugoslavia. In a climate of shrinking defense budgets and diminishing public enthusiasm for defense initiatives in general - how have they achieved this?

Denmark's new approach has been influenced both by its long standing national affiliations and recent developments in Europe. As a small independently minded nation Denmark had a long commitment to UN operations, however these now involved higher stakes Although not related to peacekeeping, the intensity and technical demands on participants in Desert Storm was influential in persuading Denmark that "traditional peacekeeping contingents" were no longer a sufficient to participate in the mainstream of UN activity. The UN was becoming increasingly involved in civil violence in which the absence of universal "consent" meant that UN troops were increasingly challenged by local factions in their day to day operations. Experiences in Cambodia, Somalia and former Yugoslavia pointed towards the need for better trained and more powerfully equipped contingents than the traditional peacekeepers of the cold-war period. If Denmark wanted to stay in the game it would have to provide units which also had a warfighting capability in addition to the policing skills needed in the past.

At the same time Denmark's role in Europe and in particular the Baltic had taken on a new dynamic character. Despite the immediate euphoria after symbolic dismantling of the Berlin Wall, the national threat perception had not been revised in a way that reduced the need for multipurpose armed forces. Security needs had altered, and now included bilateral sub-regional exchange and training agreements with Poland and Lithuania and initiatives for future cooperation on peacekeeping. In their gradual response to the problems posed by the increasing need for interdependence, the military establishment played an important role with

politicians and government officials in planning a complex but so far successful method to reorganise the Danish Armed Forces. Their plan skilfully legitimised Danish security needs in the eyes of the public by linking them to the needs of ongoing UN peace support operations.

1993-94 DEFENCE AGREEMENT

In November 1992 six of the major political parties in the Danish Parliament, Folketinget, agreed on the new approach towards defence; an important element was the decision to establish a new international Brigade. As well as its warfighting role as part of a NATO task force, it also had to be prepared for peacekeeping or humanitarian operations. In 1992 a Ministry of Defence steering committee designed a formation which could provide a range of operational characteristics identified by the CSCE summit in Helsinki, the NATO summit in Oslo in July 1992 and the defence agreements in Folketinget The committee's well crafted concept combined Denmark's two apparently irreconcilable requirements of post cold-war security, warfighting and peacekeeping, in one unit or formation.

The Danish International Brigade (DIB) was designed with a twofold mission: first as Denmark's contribution to NATO's ACE Rapid Reaction Force(ARRC) and second as the Danish military resource provider for UN and OSCE contingents. The DIB is therefore equipped as a mechanised infantry brigade with an armoured battalion of Leopard 1 A3/4 main battle tanks (MBTs), a fire support artillery battalion of self propelled guns and an air defence battely of surface to air missiles (see fig 1 below). Its national logistic resupply plan is designed to provide the brigade with a 60 day survival capability in a UN role or 10 days in a conventional war setting as part of a NATO deployment. The DIB concept addresses Denmark's obligations to provide an effective conventional force for NATO as well as the possibility to participate in a "high stakes" UN multinational force. Because the national outlook is fundamentally of a small power with a well established anti militarist lobby, the need for a powerfully equipped brigade has been shrewdly legitimised by linkage to a UN contingency rather than as an instrument of power-projection which the Danes would find unacceptable, for example in NATO's out of area role or an EU foreign policy initiative.

Elements of the DIB are already on UN operations. For example the DIB contingent in UNPROFOR is equipped with 10 Leopard 1 MBTs, it is the most powerfully armed contingent in BHC Its activities in support of the UN's preventive deployment in Bosnia has been a source of great national interest and pride. When DANBATT Leopard tanks engaged Serbian forces in 1993 firing 72 main armament rounds (HE) and killing 9 Serbian militia men, national reaction was positive. Because it was "peacekeeping", the sensibilities of the anti militarist lobby remained intact and at the same time the tone of reporting indicated that Danish national pride was satisfied by their macho display of force. As an important part of Europe's contribution to UNPROFOR, Denmark was participating in great power influence on a situation which could be shown as relevant to national security, "defending Danish security in Bosnia" a concept which gathered a degree of political respectability despite its tenuous linkage. The palpable, televised evidence of DANBATT's local success against the Serbs and the part played by powerful modem weapon systems greatly assisted defence

planners in maintaining DIB's up-to-date weapon systems and equipment despite their mounting costs.

THE DIB PROCESS

On joining Danish conscripts are asked whether they wish to volunteer for DIB duty; those that do are streamed into the sub-units of the brigade. In this way the brigade is essentially manned by conscripted soldiers in its three mechanised infantry battalions and by professional soldiers in its armour and support units. Conscripts who are also UN volunteers are distinguished by their terms of service training, but above all by their status in the defence system. Although they are essentially conscripted, the act of volunteering elevates them closer to a professional status and perhaps make it politically more acceptable for this special cate gory to become casualties in an overseas action. Everyone knows they volunteered; they had the option to say "no"

The DIB training system has to prepare its "conscripted volunteers" for what seem to be two irreconcilably different roles: first as war fighters for the less likely contingency as part of the ARRC, and second as UN peacekeepers in contingents that are currently deployed in seven separate UN operations around the world. In addition to this Denmark provides naval units for the Sharp Guard operations in the Adriatic Sea, air force personnel for NATO surveillance over former Yugoslavia (E-3A operations), observers for the various UNIEU/OSCE commitments world-wide, civilian police and logistic support elements As of 30 September 1994 Denmark's contribution to UN totalled 1364 making her the l 9 largest troop contributing nation.

Danish peacekeepers receive their most important training at Vordingborg, which concentrates on the production of a competent war-fighter first, and the refinements of peacekeeping second, as a much shorter programme only after the recruit has reached the war-fighting standards required of a trained soldier. All Danish recruits spend 8-12 months completing a basic training package which is common to all units This includes individual live firing of personal weapons. During a more specialised 5 weeks the recruit is prepared for overseas deployment. Live firing is more realistic and the unit is exercised together in the field."Rules of Engagement" scenarios become more challenging, realistic and related to a known future operation. The final period of training prior to deployment is spent on refining the particular service skills of the individual. Infantry re group with the DIB at Vordingborg Barracks to study special-to-theatre problems including geography, culture, operational lessons from previous incidents and special skills such as negotiating. MBT and HGV delivers may move to Norway to prepare for snow and mountain conditions. The programme for a conscripted UN volunteer is shown at fig. 2. After six months duty as part of a UN force, the DIB unit returns to Denmark. The conscripted volunteers return to civil employment or higher education for up to two years with occasional periods of refresher training before they are prepared once again as units for a second UN tour of 6 months. At the end of the second tour they are regarded as reservists.

LIMITATIONS OF THE DIB CONCEPT

In European experience the DIB is a most innovative and so far, successful concept to address the contrary demands for defence cuts and provide a credible contribution to NATO and the UN. But it also raises the question of whether it is possible to provide such disparate capabilities from the same basic unit; is there a danger that in a more challenging NATO contingency, the DIB may fail as a credible formation with unacceptable national and political consequences? What are the risks of such a finely balanced compromise between these opposed political and operational needs? Public disenchantment may grow if the DIB's deployment in Bosnia, for example, is increasingly linked to, and supportive of, European power-projection. It is hard to see Danish public opinion tolerating DIB involvement in an intervention on the model of the US and allied forces deployment to Somalia. Politically there are doubts as to whether Danish security interests are served by a strong deployment to Bosnia. When white coffins begin to return to Denmark in unacceptably high numbers will the public not begin to question the relevance of these casualties, asking for a more explicit linkage to Denmark's real security interests? The Norwegian experience of casualties in UNIFIL and the British albeit closer to home, experience in Northern Ireland show that with a responsible press and political legitimacy the public can tolerate a steady trickle of casualties year after year for several decades. In Denmark's case public reaction in this contingency is an unexplored factor; the probability is that small casualty figures, responsibly presented, will be tolerated, however in the event that they are not, the entire concept of the DIB will be at stake.

On a more practical note there are questions about operational standards and the readiness of the DIB in its NATO role. In common with most European nations Denmark has no strate gic lift and will rely on commercial shipping or a USAF strategic air lift for redeployment. This weakness in the case of Denmark is greatly exacerbated by the possibility that a major element of its combat strength may be deployed already to the UN at the start of a countdown to an urgent NATO task. Although IS days is the of ficially accepted time for the relocation and reorganisation into the DIB's all arms conventional manifestation, unofficially Danish military staff are doubtful whether this could be achieved. It is acceptable that the extraction of the MBTs, heavy support weapons and vehicles from Bosnia may take longer, but the removal of vital troops and their retraining may not. However a more immediate weakness seems to be that given the DIB's constant deployment unit by unit to UN contingencies, it can never be mustered as a formation, let alone, trained in its mechanised conventional role. Workable standards of fire and manoeuvre can only be achieved by combined training. It is not clear to what extent combined training exercises conducted as part of the UN deployment work-up are a preparation for the brigade level. On the question of manpower there are already signs that a growing number of recruits have not signed up for the second UN deployment which undermines the viability of the DIB'S training cycle. Casualty tolerance, lack of strategic support and training for conventional war are problems for most armies in democratically governed nations.

Despite the reservations above, the DIB is a successful European attempt to reconcile the conflicting needs of post cold-war security and the public antipathy for defence spending. The Danish International Brigade plan combines political shrewdness and economy of effort. Politically the DIB is acceptable and its contingent in Bosnia has reinforced the Danish decision to respond to UN multinational contingencies in the "high stakes" mode leaving behind their image as traditional peacekeepers. If the DIB concept is able to survive operational set backs and adverse domestic reactions as a consequence of involvement in an intense and open-ended mission such as UNPROFOR then it should become a model for defence planners in other western European and CCE states.

A DECISION-THEORETIC ANALYSIS OF PEACE SUPPORT STRATEGIES

R. K. Huber, K. Helling and G. Miller[1]

ABSTRACT

Scenario-dependent decision trees are developed from basic building blocks describing the decisions for individual peace support operations and their consequences. The resulting into mathematical model permits to compute the probabilities for the outcomes of the peace support process - peace, persisting crisis, war. Peace support strategies are specified in terms of a political strategy that defines the type of peace support operations to which the strategy is committed, and in terms of a subordinate military strategy that defines the military efforts devoted to the respective peace support operations by their success probabilities.

Four principal strategy options are defined for testing the sensitivity of the model under different scenario conditions and for different levels of military effort. In conclusion, the developments in Bosnia and possible strategy options for a continuation of the UN intervention are discussed in the light of the results of the sensitivity analysis. It is suggested that the present strategy involves a high chance that the conflict will escalate into full-fledged war, the deployment of a rapid reaction force notwithstanding. A strong enforcement strategy appears to be the only alternative for ending the hostilities in the short term.

1. INTRODUCTION

Ever since the end of the Cold War the demand for UN peacekeeping operations has increased dramatically. The number of peacekeeping operations launched by the UN in the past five years equals the number of operations performed during the entire 40 years of the Cold War period. Simultaneously, there was a significant increase in the magnitude of the operations. While UN peacekeeping operations between 1945 - 1985 involved about 40,000 soldiers and civilians, more than 90,000 have participated in peacekeeping since 1988.

Besides, the character of operations has changed. The purpose of peacekeeping in the Cold War period was primarily that of interpositioning between hostile parties after a truce or ceasefire had been achieved in *inter-state* conflicts. Since 1988, the majority of UN-operations has taken place in *intra-state* conflicts involving considerably extended mandates including, for example, humanitarian relief operations, nation building, the

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[1] Presented by G. Miller

preventive use of force for humanitarian reasons, and preventive deployment for the sake of deterrence.

Under the label *peace support*, traditional UN-peacekeeping has evolved into a variety of more or less complex and costly military operations that may no more be launched on an ad-hoc basis as in the past. In addition to deficiencies in training, logistics and command and control of the forces involved, the failures of the United Nation's (UN) interventions in Cambodia, Somalia and in Bosnia have revealed serious deficits in operations planning and, not at least, a lack of analytical tools for planning support and of academic research on the new contingencies (see, e.g., McKinlay (1994) p. 151). In particular, there is a need for an analytical framework that addresses not only individual categories of peace support operations, but the peace support process in its entirety to provide a structured basis for the analysis and assessment of peace support strategy options, and for estimating risks and costs associated with them under the range of possible conflict conditions. To this end, mathematical models and computer simulations represent important tools that permit to test a large number of options in many prototypical scenarios, thus contributing to the information basis required for arriving at a consensus about a sustainable strategy in a given conflict scenario.

In this sense, results of selected numerical experiments will be presented that have been obtained from a highly aggregated decision-theoretic model developed jointly by the Institute of Applied Systems Science and Operations Research at the Federal Armed Forces University Munich and Vector Research in Ann Arbor, Michigan.

2. BASIC FEATURES OF THE MODEL

The model builds on the conflict resolution scheme proposed in 1992 by the London European Security Working Group of the British American Security Information Council (see Aldred et al., 1993). It represents decision trees consisting of a sequence of so-called decision and random event nodes. The actions are defined in form of disjunct packages of peace support operations that may either be implemented or rejected. The implementation and rejection of each action is associated with certain outcomes in form of system states or follow-on actions.

The decision trees embedded in the model refer to the four categories of peace support operations listed in Table 1. They are based on the classifications and definitions of the Watson Institute (see McKinlay and Chopra, 1993, and Dobbie, 1994) and have been defined in a manner that avoids the overlap in the classifications of the UK Army Field Manual *Wider Peacekeeping* (Fourth Draft, 1994), and the US Army Field Manual *Peace Operations* (Version 6, 1994).

In addition, the model considers two further decisions on

- diplomatic activities to bring about cease-fires or truces (*cease-fire negotiations* CN),
- withdrawal or evacuation of peace support forces in case they fail to accomplish their missions or mandates (*force extraction* FE).

Table 1: Principal Categories and Characteristics of Peace Support Operations

Operations Category	Conflict Phase	Consent required	Objectives or Tasks	Req'd Type of Military Force
Preventive Deployment PD	pre-war crisis	partial	♦ forestalling violence ♦ deterrence of aggression	♦ lightly armed, mobile ground forces ♦ joint strike force
(Traditional) Peacekeeping PK	cease-fire (no hostilities)	yes	♦ discourage resumption of hostilities	♦ unarmed observers ♦ lightly armed (small) ground forces
Extended Peacekeeping EP	cease-fire (high volatility)	yes	♦ discourage resumption of hostilities ♦ restore order ♦ provide security and humanitarian assistance ♦ supervise protected areas	♦ infantry/light armor ♦ combat service support and special operations forces
			♦ control of movements	♦ land/air/naval forces ♦ strategic intelligence
Peace Enforcement PE	hostilities	no	♦ enforcement of sanctions	
			♦ separation of belligerents	♦ conventional warfare forces (offensive capable)

Fig. 1 shows the outcomes that are assumed to result in case of an implementation (Y) or rejection (N) of the indicated peace support categories. It should be noted that traditional *peacekeeping* (PK) is considered only if the administrative, social and economic infrastructure in the conflict region is largely intact. Otherwise, *extended peacekeeping* operations (EP) will have to be implemented first for bringing the infrastructure back to a workable level before being scaled down to traditional peacekeeping.

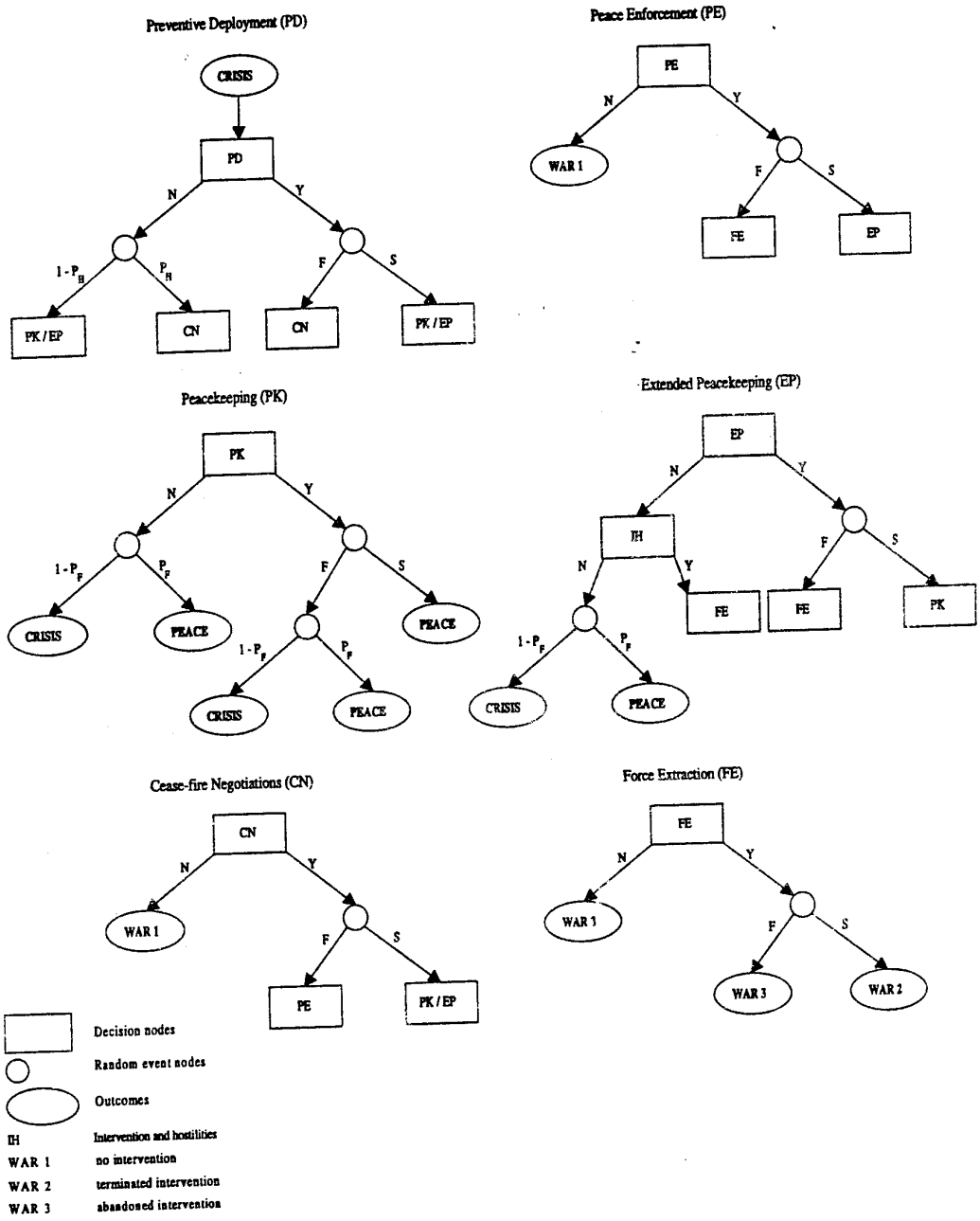

Figure 1: Decomposed Decision Tree of Peace Support Process

PD	=	Preventive Deployment	Y	=	yes
CN	=	Cease-fire Negotiations	N	=	no
PK	=	Peace Keeping	S	=	success
EP	=	Extended Peace Keeping	F	=	failure
PE	=	Peace Enforcement	P_H	=	probability of hostilities
FE	=	Force Extraction	P_F	=	probability of peace

Success and failure of implemented peace support operations are measured in terms of their success probability P, or its complementary value (1-P), respectively. The probability values may be obtained from empirical analyses of historical or simulated operations[2]. The degree of hostility between the belligerent parties is captured by the probability P_H that hostilities will break out, and their potential for cooperative behaviour by the probability P_F that peace may result without outside assistance.

Two different decision trees featuring the outcomes *peace, crisis,* and *war* result by combining the six building blocs shown in Fig. 1. One characterizes a scenario in which the local infrastructure is essentially intact, the other a scenario in which the infrastructure has become largely dysfunctional. The fact that the relative number of branches leading to *war* is 42 percent higher for an dysfunctional as compared to an intact infrastructure is an indication that the risk of failure of peace support operations is inherently higher if, *ceteris paribus*, economic and social conditions of the belligerent parties are strained and their administrative infrastructures on the verge of collapse. This underscores the importance of reconstruction assistance and economic aid as elements of long-term peace support strategies for regions of potential crises.

The outcome *crisis* leads back to the root of the decision trees, i.e., the initial state *crisis*, symbolizing that the international community may reconsider the implementation of the process captured by the decision trees until the end states *peace* or *war* do result eventually.

The mathematical model resulting with these assumptions permits to compute the probabilities that various peace support strategy options will lead to peace, or war in the medium and long term, or that the crisis will persist. For a detailed description of the model, the reader is referred to Huber and Miller (1995).

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[2]An example is discussed by Hofmann et al. (1995) for traditional combat operations. From a large number of combat simulation experiments by means of the model KOSMOS, the authors generated mathematical relationships between the breakthrough probability in main-thrust sectors and the local force ratio. However, if at all, the traditional combat simulation models may be applicable to PD and PE operations only, albeit not without some modifications. There is an urgent need for new analysis tools to support planning of peace support operations and for developing coherent peace support strategies. This is especially true since only by analytical means can reproducible "what-if" information be generated that is indispensable for arriving at an efficient consensus, in particular in an international environment.

3. SENSITIVITY TESTS OF PEACE SUPPORT STRATEGIES

A peace support strategy is characterized by a *political* strategy and a subordinate *military* strategy. The political strategy defines the categories of peace support operations to which a peace support strategy is committed. The military strategy reflects the nature and size of military operations implemented for the execution of the respective interventionist acts. In the model, the political strategy is captured by the likelihood values L(I) for the interventionist acts I, the military strategy by the success probabilities P(I) for the military operations associated with the acts I. A likelihood value of L(I) = 1 indicates a firm commitment to implementing the act I if necessary. L(I)=O implies that the respective act will not be implemented under any circumstances.

With due regard to the six categories of peace support operations embedded in our model, four principal categories of political strategy options can be defined that may be characterized as follows:

- *Comprehensive Strategies* are committed to implementing all of the six peace support operations categories considered in our model.
- *Enforcement Strategies* do not include preventive deployment (PD), but are firmly committed to peacekeeping operations (EP/EPK) and to enforcing peace (PE) should negotiations fail to stop hostilities, or should cease-fires or truces be violated.
- *Impartial Strategies* are restricted to extended and traditional peacekeeping operations (EP and PK).
- *Traditional Strategies* are limited to observer missions and interposition operations (PK).

For the numerical sensitivity tests of these strategies it shall be assumed that the international community is strongly committed to diplomatic efforts for ending hostilities, i.e., the likelihood value for CN is assumed to be L(CN) = 1. Except for traditional strategies, all strategy options imply that an abortion of peace support operations will always be supported by covering operations to allow for an orderly withdrawal. A failure of the covering operations would entail an evacuation of the peace support forces and the loss of their equipment. Thus, the four strategy options may be characterized by the likelihood values listed in Table 2 for the implementation of the six peace support operations categories.

The results of the sensitivity tests are compiled in Table 3 for four scenarios distinguished by differences in the attitudes of the belligerent parties and the state of the local infrastructure. For each political strategy option, two levels of military efforts are considered that the international community is willing to devote to the respective peace support operations.

Table 2: Likelihood for the Implementation of PSO-Categories in Political Peace Support Strategy Options

Strategy Option	Peace Support Operations Categories Acts					
	PD	CN	PE	EP	PK	FE
Comprehensive	0	1	1	1	1	1
Enforcement	0	1	1	1	1	1
Impartial	0	1	0	1	1	1
Traditional	0	1	0	0	1	0

Hostile attitudes among the belligerent parties are assumed to involve a high readiness to enter into hostilities ($P_H = 0.95$), a low willingness for cooperative behaviour ($P_F = 0.05$), and medium chance only that the parties will adhere to the terms of cease-fire agreements ($P(CN) = 0.5$). The corresponding values for a weakly cooperative behaviour are assumed as $P_H = 0.5$, $P_F = 0.8$, $P(CN) = 0.9$.

In addition, it is assumed strong military efforts result in success probability values of $P(I) = 0.95$, and modest military efforts in $P(I) = 0.5$, for each of the military peace support operations categories I.

The estimation of the forces and resources required for arriving at these probabilities is beyond the scope of the model described above. It should be pointed out, however, that some knowledge about the relationship between available military resources and the success probability of peace support operations in indispensable for their planning and for risk analysis in a concrete situation.

Table 3: Probabilities for the Outcomes of Peace Support Strategy Options in different Scenarios

Attitudes of Belligerents	Regional Infrastructur	Military Effort	Political Strategy	Outcomes						
				medium-term					long-term	
				Peace	Crisis	War 1	War 2	War 3	Peace	War
hostile	intact	strong	Comprehensive	0.95	0.05	0	0	0	1	0
			Enforcement	0.91	0.05	0	0.04	0	0.96	0.04
			Impartial	—	—	—	—	—	—	—
			Traditional	0.50	0.02	0.48	0	0	0.51	0.49
		modest	Comprehensive	0.43	0.39	0	0.09	0.09	0.70	0.30
			Enforcement	0.34	0.30	0	0.18	0.18	0.49	0.51
			Impartial	—	—	—	—	—	—	—
			Traditional	0.27	0.25	0.48	0	0	0.36	0.64
	dysfunctional	strong	Comprehensive	0.90	0.05	0	0.05	0	0.95	0.05
			Enforcement	0.89	0.04	0	0.07	0	0.93	0.07
			Impartial	0.48	0.02	0.48	0.02	0	0.49	0.51
			Traditional	—	—	—	—	—	—	—
		modest	Comprehensive	0.23	0.21	0	0.28	0.28	0.29	0.71
			Enforcement	0.20	0.18	0	0.31	0.31	0.24	0.76
			Impartial	0.14	0.12	0.48	0.13	0.13	0.16	0.84
			Traditional	—	—	—	—	—	—	—
weakly cooperative	intact	strong	Comprehensive	0.99	0.01	0	0	0	1	0
			Enforcement	0.98	0.01	0	0.01	0	0.99	0.01
			Impartial	—	—	—	—	—	—	—
			Traditional	0.89	0.01	0.10	0	0	0.90	0.10
		modest	Comprehensive	0.83	0.09	0	0.04	0.04	0.91	0.09
			Enforcement	0.83	0.09	0	0.04	0.04	0.91	0.09
			Impartial	—	—	—	—	—	—	—
			Traditional	0.81	0.09	0.10	0	0	0.89	0.11
	dysfunctional	strong	Comprehensive	0.94	0.01	0	0.05	0	0.95	0.05
			Enforcement	0.94	0.01	0	0.05	0	0.95	0.05
			Impartial	0.85	0.01	0.10	0.04	0	0.86	0.14
			Traditional	—	—	—	—	—	—	—
		modest	Comprehensive	0.43	0.05	0	0.26	0.26	0.45	0.55
			Enforcement	0.43	0.05	0	0.26	0.26	0.45	0.55
			Impartial	0.41	0.05	0.10	0.22	0.22	0.43	0.57
			Traditional	—	—	—	—	—	—	—

4. INTERPRETATION OF THE RESULTS

With due regard to the assumptions underlying the sensitivity tests, their results may be interpreted as follows:

1) *Traditional peacekeeping strategies* as defined above are relevant only if the infrastructure in the conflict region is largely intact, and if the belligerent parties are least weakly cooperative, i.e., cooperative in principle. In that case, a medium

military effort is sufficient to arrive at relatively high probabilities for a peaceful outcome of the conflict, as revealed by the long-term probability values of 89 percent for a medium and 90 percent for a strong military effort. If, however, there is a high degree of hostility between the belligerent parties, even strong military efforts will not result in a higher chance for peace than for war (49 and 51 percent).

2) *Impartial peace support strategies* are assumed to be relevant only if the administrative and economic infrastructure in the conflict region has become dysfunctional. As is true for the traditional strategies, the implementation of impartial strategies requires that the belligerent parties are cooperative in principle. However, even then an acceptable level for the long-term probability of peace (86 percent) is obtained only if this strategy finds strong military support.

3) Militarily strong *peace enforcement strategies* result, for all of the scenarios considered in the sensitivity tests, in fairly high values for the probability that hostilities can be ended quickly. This is revealed by the fact that the mid-term probabilities for a peaceful outcome are only marginally below those for the long term. The respective (mid-term) values range from 89 percent for a scenario characterized by hostile behavior of belligerents and dysfunctional infrastructure conditions, to 98 percent when the parties are weakly cooperative and the local infrastructure conditions still intact. In the latter case, even a modest military effort support would result in high peace probability values, at least in the long term (91 percent).

4) A strong *comprehensive peace support strategy* is almost equivalent to peace regardless of the state of the regional infrastructure. And even if the military efforts supporting such a strategy are merely modest, the long-term chance for peace still stands at about 70 percent as long as the regional infrastructure is intact. However, it drops to less than 30 percent when the infrastructure is dysfunctional. Thus, in addition to the politico-military strategy considered in this paper, international assistance for maintaining or building workable administrative, social and economic conditions in regions of potential conflict appears to be an indispensable part of a long-term comprehensive peace support strategy.

5) The fact that the probabilities for peace and persisting crisis are not significantly higher for comprehensive than for enforcement strategies must not be interpreted as both strategies being more or less equivalent. This is because peace enforcement implies acts of war that are necessarily associated with loss of life and materiel, and possibly with high political costs. However, with the assumptions underlying the sensitivity tests, the probability that enforcement operations have to be launched because preventive deployment has failed is only 2.5 percent for a militarily strong comprehensive strategy, and 25 percent when the available military resources are modest. Thus, a comprehensive strategy committed to a strong and early preventive deployment should be preferable to an enforcement strategy on many grounds, not the least because of the long-term

monetary savings when compared to the costs of enforcement and other strategies.[3]

6) Besides, the operational uncertainties appear to be significantly larger for enforcement operations than for preventive deployment operations. For example, at a success probability of enforcement operations of 10 percent and less the probability that peace will be the outcome of the enforcement strategy is reduced to the values obtained from the impartial and traditional strategies. This is not unlikely if enforcement is restricted to air operations, especially if the local terrain provides natural cover from air attacks, or the targets are located in populated areas and cities.

7) In order to be successful, preventive deployment must be implemented early in a conflict, at the latest when there are indications of imminent hostilities. This underscores the importance of quick reaction forces, including their strategic transport, for the peace support process. The lack of sufficient forces for an immediate preventive deployment reduces the chances for peace considerably. The comparison of the results for the comprehensive peace support strategies shows that, depending on the prevailing infrastructure conditions, the mid-term peace probability drops from 95 to 43 percent, and from 90 to 23 percent, if only modest military efforts can be implemented quickly.

5. CONCLUSIONS FOR DEVELOPMENTS IN BOSNIA

Reports and news about Bosnia suggest that there is a high degree of hostility among the parties to the conflict, and hardly any chance that they themselves would become capable of settling their disputes any time soon. Thus, the situation there is not unlike the one underlying the sensitivity tests discussed above, except perhaps for the assumption of a 50 percent success rate for cease-fire negotiations which appears to be somewhat optimistic considering the rather dismal record of cease-fire violations in Bosnia.

Disregarding the embargo operations, the pattern of UN military actions in Bosnia seems to be indicative of what we have defined as an *impartial peace support strategy with modest military efforts*[4].

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[3]Huber (1994) has presented a retrospective analysis of the military requirements for a comprehensive international strategy that would have left the regional parties little chance for using military force as a means of conflict resolution in Bosnia. He concludes that, had it worked, the monetary costs of this strategy would have amounted to less than what the international community had paid by the end of 1994 for UN relief operations, including peacekeeping, and for the accommodation of hundreds of thousands of refugees, not to mention the loss of human life and personal misery or the sizeable indirect cost of the war to Bosnia's neighbors.

[4]Attempts of enforcing adherence to cease-fires through air attacks have not been very successful. Besides, there were too few for classifying the UN strategy an enforcement strategy in the sense of our definition.

Thus, the data presented in Table 3 suggest that initially, i.e., when the local infrastructure was still largely intact, the long-term probability that the strategy chosen by the UN would lead to peace was definitely much lower than the probability that the conflict would eventually escalate to full-fledged war. The respective probabilities are listed as 36 and 64 percent, respectively. As the infrastructure in the region becomes ever more dysfunctional, the long-term prospects of peace diminish and those of war increase as reflected by the probability values of 16 and 84 percent.

In order to counter this trend, the international community, while not changing its strategy, may decide to increase its military efforts in Bosnia to a level that corresponds to what was termed a *strong effort* in the sensitivity analysis. As the resulting probability values, of 49 percent for peace and 51 percent for war, indicate, the chances for peace and war would become about equal in that case.[5]

Even though this improvement is sizeable, it still is a long way from bringing the chances for peace up to an acceptable level. Therefore, the international community might consider to adopt a *strong enforcement strategy* instead. By doing so, the probability of peace can be expected to rise fairly quickly to a satisfactory level. The sensitivity tests for that strategy yielded mid-term peace probabilities of 89 percent for peace and of merely 4 percent that the crisis would persist.

Alternatively, the international community may consider to carry on with the present strategy and wait for the exhaustion of the conflict parties. In order to obtain the same long-term probability of peace that enforcement would yield, the probability of hostilities P_H would have to fall from the 95 percent assumed for our experiments to values below 5 percent, that for cooperative behaviour P_F would have to increase from 5 percent to more than 95 percent. This implies a rather dramatic change in mutual attitudes of the conflict parties that seems to be rather unlikely, at least in the short term.

Thus, the adoption of a *strong enforcement strategy*, including an intervention with ground forces, appears to be the only alternative for ending the hostilities in Bosnia in the short term. Whether this would be less costly a strategy, both in financial and political terms, than proceeding with the present strategy needs to be analyzed. Sticking with the present strategy involves a high chance that the conflict will become increasingly violent and escalate into a full-fledged war endangering the entire Balkans and neighboring regions.

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[5]Thus, the recent decision by France, Britain, and the Netherlands to deploy a rapid reaction force under the original mandate cannot be expected to turn the tide in favour of the UN.

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REFERENCES

Aldred, K. et al. (1992). European Security - Discussion Document. London European Security Working Group. The British American Security Information Council.

AFM 4. (UK) Army Field Manual "Wider Peacekeeping", Fourth Draft.

Dobbie, Ch. (1994). A Concept for Post-Cold War Peacekeeping. Survival, Vol. 36 No. 3 (Autumn 1994) pp. 121-148.

FM 100-23. US Army Field Manual "Peace operations", Version 6.

Gamba, Virginia (1994). New Missions for the United Nations: Peace-keeping, Peace-building, Peace-making, Peace-Enforcing. Aspects of Security Policy in a New Europe (K. Gottstein, Ed.), pp. 157-178, Max-Planck-Gesellschaft München.

Hofmann, H. W., Schnurer, R., and Tolk, A. (1995). On the Impact of Stochastic Combat Modeling in a Rule-Oriented Combat Simulation Model on Division/Corps Level. In: Coping with Uncertainty in Defense Analysis and Combat Modeling. IASFOR, UniBwM, S-9501, Neubiberg, January 1995.

Huber, R. K. (1994). Deterrence in Bosnia-Herzegovina. A Retrospective Analysis of Military Requirements Before the War. European Security, Vol. 3 No. 3 (Autumn 1994), pp. 541-551.

Huber, R. K. and Miller, George (1995). A Decision-theoretic Model for the Assessment of Peace Support Strategies. In: International and Intranational Stability: Models for Security Policy in the Post-Cold War Era (R. K. Huber and R. Avenhaus, Eds.), NOMOS-Verlagsgesellschaft, Baden-Baden.

McKinlay, J. and Chopra, J. (1993). A Draft Concept of Second Generation Multinational Operations 1993. Thomas J. Watson Institute for International Studies, Brown University, Providence, RI.

McKinlay, J. (1994). Improving Multifunctional Forces. Survival, Vol. 36 No. 3 (Autumn 1994), pp. 147-173.

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