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ANALYTIC RESEARCH ON STRATEGIC, TACTICAL AND DOCTRINAL MILITARY CONCEPTS

The Concept of Stability

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20. ABSTRACT (Continued)

is traced from its beginnings about 1960 to the present. The role of stability, in the 1960s and 1970s, as the key link between arms control policy and weapons acquisition policy is identified and discussed. Alternative approaches to stability, including Soviet views, are summarized. An extensive, fully annotated bibliography is included.

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SUMMARY

This report, based on a survey of the literature on the concept of stability, summarizes that literature and draws conclusions as to the usefulness of the separate concepts of stability of the international system and nuclear strategic stability.

Stability of the International System

As it applied to the international system in the 18th and 19th centuries, and to some extent up until World War II, stability included a high probability that there would be no large-scale war, that the system's major members would survive, and that no single nation would become dominant. Preservation of the system's members and of the basic power relationships of the system was fully as important as prevention of war, and, in fact, some war was seen as a necessary means of maintaining stability, which was not viewed as static, but as resilient, and tending to return the system to its original state, in accordance with the basic meaning of stability. Post-World-War-II political scientists continued to define the term in this way, including prevention of hegemony and preservation of the major members of the system as essential dimensions of stability.

The danger and destructiveness of nuclear war has recently led stability to be used to mean simply a low probability of war. While there can be no argument with the weight of this consideration, if stability is to be implicitly defined only in terms of war avoidance, it must be recognized that the international system could move from a relatively stable, loose bipolar system to a relatively stable system in which the Soviet Union exercised hegemony, without ever passing through a period of instability.

Nuclear Strategic Stability

From early in the nuclear age, an invulnerable retaliatory force in the hands of each nuclear power has been considered

the prime essential for nuclear strategic stability. By the mid-1960s the idea that stability also required populations vulnerable to nuclear attack had been added to the stability canon. Maximum stability was theoretically achieved if both nuclear superpowers possessed invulnerable retaliatory forces and vulnerable populations. To express the same idea in another way, whatever contributed to a first-strike capability was destabilizing, and whatever contributed to a second-strike capability was stabilizing.

By the mid-1970s this concept had been elaborated upon and codified to such an extent that almost any feature of any weapons system could be, and was, classified as either stabilizing or destabilizing. Following is a listing of some weapons characteristics classified in this way. It may be noted that some of the "stabilizing" characteristics work to insure the survivability of the retaliatory force, others to insure its ability to hit countervalue (population and industry) targets, and others to prevent its hitting counter-force (missile) targets.

<u>Stabilizing</u>	<u>Destabilizing</u>
mobility hardening dispersion concealment } of unfired missiles warning system excellence command-control-communication survivability active defense of missiles by ABMs penetration aids for missiles long flight time of missiles safeguards against accidental firing of missiles	accuracy of missiles large numbers of missiles high yield of warheads strategic antisubmarine warfare programs ABM or bomber-network protection for one's population unhardened (or otherwise vulnerable) missiles

Problems in Applying Nuclear Strategic Stability Doctrine

Not all defense analysts have accepted that nuclear strategic stability is desirable, and not all who believe it is desirable have accepted the tenets of orthodox stability, as outlined above. One of the most telling arguments against making stability the prime goal of the nuclear strategic relationship with the Soviet Union is that, by making a first strike impossible for the United States, it logically denies the protection of US strategic nuclear weapons to US allies as a deterrence against conventional or nuclear attack on them by the Soviet Union.

In any case, orthodox stability depends upon cooperation by the Soviet Union in creating invulnerable retaliatory forces and vulnerable populations for both sides. Therefore, the concept of this kind of stability has been badly shaken by strong evidence, accumulated during the past decade, that the Soviet Union does not share US views on stability and does not plan, acquire, or deploy weapons in accordance with them.

Conclusions

This report draws the following conclusions:

- Stability of the international system is not an adequate summation of US foreign policy goals, unless stability is defined to include prevention of hegemony and preservation of the major actors in the system, as well as prevention of war.
- Nuclear strategic stability -- defined as a probability of nuclear war that approaches zero -- may not be the most desirable goal of US nuclear strategic policy.
- Even if stability is the most desirable goal of US nuclear strategic policy, it may not be best achieved by following orthodox stability doctrine, as codified in the early and middle 1970s.
- Even if orthodox stability doctrine is the best mechanism for achieving stability, it will not work, under its own rules, if
 - the opponent does not accept it as best for both sides and cooperate by applying it to his own forces;

-- as a result, one's own retaliatory force becomes vulnerable and the opponent's society becomes significantly less vulnerable than one's own.

- The logical approach to a theoretically unstable nuclear strategic situation is to restore the invulnerability of one's retaliatory force.
- Although restoring the invulnerability of the retaliatory force may require increased arms expenditure, there is no evidence that this expenditure increase constitutes arms racing in any meaningful sense, and, in fact, there is no evidence that increases in arms expenditures are inimical to nuclear strategic stability. Although arms race stability, or arms stability, is frequently treated as identical with nuclear strategic stability, or as a subcategory of it, the two concepts are different and only tenuously connected.

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INTRODUCTION

Stability is one of the most frequently cited goals of US policy, mentioned almost as often as deterrence and security in official statements, and probably even more often than peace. However, it is used with a variety of meanings, is often used with a vague or unclear meaning, is officially undefined, and has been subjected to very little serious analysis. This paper will attempt to clarify the principal meanings of the term; will briefly trace the history of the concept since World War II; will outline and evaluate the various requirements for strategic nuclear stability as set forth in the literature; will examine categories of nuclear strategic stability, including crisis stability and arms race stability; will assess the strengths and weaknesses of stability as an expression of US policy aims, and will make recommendations on definitions and use of the term stability.

EXAMPLES OF USES OF THE TERM

Following are some examples of ways in which the term stability has been used recently in official US documents and by US officials:*

*All underscoring has been added in all the examples quoted in this section.

- The Department of Defense Annual Report for Fiscal Year 1981 lists stability as one of four "other objectives" of US strategic policy, following deterrence -- the "fundamental objective." (In addition to stability the "other objectives" are essential equivalence, arms control, and the TRIAD.) Two distinct kinds of stability are discussed in the Defense Report:

Long-term stability in the strategic balance . . . is maintained by insuring that the balance is not capable of being overturned by a sudden Soviet technological breakthrough. . . . Crisis stability means insuring that even in a prolonged and intense confrontation the Soviet Union would have no incentive to initiate an exchange, and also that we would feel ourselves under no pressure to do so. (p. 69)

- In testimony before the Senate Committee on Foreign Relations on March 27, 1980, the Secretary of State listed eight "central American interests for the coming years." In listing two of these interests he mentioned stability in a context that made it clear that stability is an assumed goal of policy:

A third interest -- controlling the growth and spread of nuclear and other weapons -- enhances our collective security and international stability. . . .

The advancement of human rights is more than an ideal. It, too, is an interest. Peaceful gains for freedom are also steps toward stability abroad and greater security for America. (US Department of State 1980:2)

- In the same testimony, the Secretary quoted the President's 1980 State of the Union address as follows:

. . . when peoples and their governments can approach their problems together -- through open, democratic methods -- the basis for stability and peace is far

more solid and far more enduring. (US Department of State 1980:8)

- In a February 1976 statement to Congress, the Director of Defense Research and Engineering said

A major consideration in designing strategic forces is stability, to limit the likelihood that a war would be initiated in a crisis in order to achieve the advantage of striking first. Our forces should not be such as to invite attack. . . . Thus, we focus on improving the survivability of our forces to a disarming first strike attack, and on increasing the capability of those forces which do survive. . . . Not only is it our policy to control escalation to the lowest level possible; our forces are being designed so accurate placement of smaller yield weapons reduces collateral damage. . . . The objectives of arms control are quite consonant with objectives which we pursue in the design of forces. (US Congress 1977a:18-19)

- The arms control impact statements (ACISs) for Fiscal Year 1980, statements which Congress requires the Executive Branch to submit for major defense programs, included statements on the expected impact on global and regional stability of 19 major programs. It should be noted that stability was discussed specifically at the insistence of Congress. (US Congress 1977a:iv-v, 20) The following excerpt is from the ACIS for the SSBN/SLBM (submarines with submarine-launched missiles) program:

As U.S. silo-based ICBMs become more vulnerable to Soviet ICBMs, U.S. SSBNs could come to assume increasing importance in guaranteeing the secure U.S. retaliatory capability necessary to deter nuclear attack upon this country or its allies, and to help insure a fundamental strategic stability. Consequently, the Trident SSBN/SLBM programs are, with one possible exception, Trident II, extremely important to U.S. security and to strategic stability.

The impact of potentially very accurate Trident II missiles on strategic stability in the early 1990s is

less clear. . . . Some believe the overall impact of Trident II on strategic stability could have some de-stabilizing effects. . . . This would be the result if the Soviets believed that Trident II's projected time-urgent hard-target-kill capabilities added significantly to similar capabilities which the Soviets could attribute to planned and possible improvements to Minuteman and/or the MX, if deployed. On the other hand, improved U.S. time-urgent hard-target-kill capabilities could encourage the Soviets to reduce their present emphasis on silo-based ICBMs [and thus increase stability]. (US Congress 1979:54)

In addition to these examples from official documents, a few samples of use of the term stability from defense-community and independent analysts may be given:

- A panel of scholars and government officials, discussing regional stability at the 1977 National Security Affairs Conference of the National Defense University, first defined stability as "nonviolent change in social, political, and economic forces and in a system of conflict resolution."

(US National Defense University 1977:43) However, the panel apparently found that this definition was not adequate. The rapporteur's report states:

Regional stability, never questioned as a desirable US objective, was redefined as a more fluid situation than often assumed, amounting to regional change whose outcomes favor the United States. (US National Defense University 1977:49)

- Defense analyst George Quester, writing in 1978 on the advantages of precision guided munitions (PGMs) for the defense of NATO, includes a good deal of discussion on the inherent stability and instability of specific weapons. In a context of theater war, he states that weapons that can

be made mobile, and thus used effectively on "territory they might try to move into," are destabilizing, and immobile weapons that are most effective on the "territory they originally occupy" are stabilizing. (Quester 1978:17)

- To go back to one of the earlier works on nuclear strategic matters, Morton Kaplan wrote in 1958

If one is not willing to extend the war to prevent an enemy victory, why should one not give up the objective if the enemy is willing to extend it when he cannot gain victory by non-nuclear means? Unwillingness [to extend the war] is inherently unstable if resources are equivalent. . . . A policy of limitation . . . gives a strategic advantage to an opponent and is inherently unstable. (Kaplan 1958:35)

Following are some additional examples in the form of brief quotations:

- Stability is achieved when each nation believes that the strategic advantage of striking first is overshadowed by the tremendous cost of doing so. (Brodie 1959:303)

- We shall define stability [of the international system] as the probability that the system retains all its essential characteristics; that no single nation becomes dominant; that most of its members continue to survive; and that large-scale war does not occur." (Deutsch and Singer 1964:390)

- The dimension of stability [is] the assurance against being caught by surprise, the safety in waiting, the absence of a premium on jumping the gun. (Schelling 1966:235)

- . . . the maintenance of strategic stability -- in terms of minimizing both the possibility of nuclear war and the possibility that nuclear arms may be used by either side as a means of decisive pressure in key areas of the world. (Nitze 1976a:207)

What order can be brought out of these varied examples?

In the first place it must be made clear that two separate

kinds of stability are being written about; some examples refer to one kind and some to the other. These may be called international political stability and strategic nuclear stability. In the examples above, the Secretary of State, the President, the National Defense University panelists, and Deutsch and Singer are all talking about international political stability. The other writers are dealing largely or entirely with strategic nuclear stability.

Although the present paper will focus on strategic nuclear stability, it seems important to devote some attention to international political stability, for the following reasons:

- The recent histories of the two concepts are closely intertwined. The term stability came into common use for both concepts at about the same time, in the post-World War II period. Although stability is a term with a long past, it was not often, if ever, used in official US statements to describe national hopes and goals for the international system before the 1950s. It was also at about this same time that "stability" came to be considered the ideal arrangement for the strategic nuclear confrontation with the Soviet Union.

- There is some confusion and overlapping in the use of the term stability for the two concepts, and it therefore seems best to attempt to clarify the distinctions. For example, the authors of the Fiscal Year 1980 ACISS, instructed

to assess the impact on stability of various weapons systems, find themselves weighing the (politically) "stabilizing" effects of deploying more and larger missiles and thus achieving a more equal balance of nuclear power with the Soviet Union, on the one hand, against the theoretically "destabilizing" effects on strategic nuclear stability of deploying these same missiles.*

- Finally, a great deal can be learned about strategic nuclear stability from an exploration of the basic stability concept and the way it has been applied to international political stability.

HISTORY OF THE STABILITY CONCEPT

To discover what is basic about the concept, it seems most useful to examine the history of its use.

Meaning of the Term Stability

Stability is a term with a long history, and has been used at least since the late 15th Century to apply to governments, countries, and institutions, indicating that they have "immunity from destruction or essential change."** Almost from the beginning, and certainly since the 18th Century, the

*US Congress 1979:18. The stability issues surrounding the MX, which is being discussed in the cited passage, are of course much more complicated, but this is a fair summary of the specific point being made in the ACIS.

**This, and all definitions and examples not otherwise identified, are from the Oxford English Dictionary (OED), selected for use here because of its historical emphasis and wealth of examples from many time periods.

term stability, whether applied to the physical world or political entities, has had special connotations that became an integral part of it. The "immunity from . . . essential change" was not the result of accident or protection by outside force but was the result of the inherent nature, or construction of the stable object. Furthermore, the stable object was not necessarily unmoving and unchanging. The important thing was that changes were not catastrophic, and that after a shock or period of agitated movement, the object returned to its original condition. Following are some 19th Century examples: "The true function of the root is to give stability to the tree." (1894) "The statical stability of a ship may be defined as the effort which she makes when inclined by external forces acting horizontally, and held steadily at that inclination, to return towards her natural position of equilibrium." (1877) ". . . whereby all perturbations eventually reduced themselves to oscillations on each side of a mean position, and the stability of the solar system was secured." (1869)

Morton Kaplan has clearly explained this essential aspect of stability -- the fact that the stable object resists shocks and rights itself after being disturbed -- as it applies to political systems. He notes that while physical objects can have a stability that is purely mechanical, as when a seesaw returns to its original position after a disturbance, physical

stability can also be achieved by a homeostatic, or "steady-state" process. In a homeostatic process, some variables continually readjust to keep other variables within given limits. This is the way a thermostat operates to keep a temperature reasonably steady, and the way an automatic pilot operates to keep an airplane level. Kaplan states that it is homeostatic processes that keep political systems stable, with various actors within the system taking action to bring the system back on an even keel if other actors tip it off center. In the international political system, the actors are, for the most part, nations.*

Kaplan also discusses a special kind of stability, which he calls ultrastability, that seeks and finds a new equilibrium if the old is irretrievably lost. In the case of the automatic pilot, if it should be improperly connected to the airplane in such a way that a slight shift of the plane from level flight is not corrected but rather accentuated, sending the plane into a spin, an ultrastable homeostat could adjust its own behavior to this event and re-establish level flight. (Kaplan 1957:7)** The implications of this concept for political systems and the international system are clear. Kaplan says of "ultrastable" systems that they

*Strictly speaking, the international system is not a political system, since it has no laws, constitution, or means of enforcing rules on its members. (See below, pp.19-20.) In this paper, however, to avoid greater awkwardness and confusion, reference will sometimes be made to the international political system.

**Kaplan cites W. Ross Ashby, Design for a Brain, Wiley, 1952, p. 99, as the originator of the concept of ultrastability.

"search" for stable patterns of behavior. They may make internal changes or may attempt to change the environment. They reject unstable patterns of behavior. Periods of transitional adjustments . . . may represent attempts to find new patterns of stable behavior after the old patterns have proved unstable for some reason. Such processes are those of an ultrastable system. . . . (Kaplan 1957:7)

This is the kind of stability that one would wish for newly independent nations, and for nations and regions entering the contemporary economic age, since it is certain that the old equilibrium cannot be regained, and that thus stability in the sense of a ship's righting herself after being heeled over is not attainable.

It should be noted at this point that for intelligent discourse on stability it is absolutely essential that variables be defined. (Kaplan 1957:6; Deutsch and Singer 1965) What, precisely, is it that is stable? For example, if one is discussing the stability of an international system, one has to make clear whether a low level of armaments expenditure, or a low frequency of war, or the degree to which the independence and sovereignty of all the major system members are preserved, is to be the criterion for stability. This requirement is very frequently violated, with consequent confusion. Deutsch and Singer are unusual in stating their definition clearly and explicitly, in the passage quoted on p. 11, above: Stability is the probability that no single nation will become dominant, that most of the members will continue to survive, and that large-scale war will not occur.

These authors go on to say that a probability of 90% to 99% seems intuitively about right for a system to qualify as stable. (Deutsch and Singer 1964:390) Although assessing the numerical probabilities in specific cases would not be easy, still it is clear what these writers are discussing when they speak of stability.

Glenn Snyder has pointed out that there are what he calls three subdimensions of stability: lack of tendency toward an arms race, lack of tendency toward war, and tendency toward preservation of the independence of the major actors. He points out that the focus was on the last subdimension in the pre-World-War-II past, with war and armament acquisition treated as ways of preserving this last aspect of stability. More recently the emphasis has been strongly on the second subdimension--the tendency, or lack of tendency, for the system to produce war. (G. Snyder 1965:197)

In fact, one major problem in dealing with the stability concept is that a great many -- probably a majority of -- writers and officials using the term today use it simply to mean "a low probability of war," not explicitly defining the term and not considering as part of their implicit definition the matter of whether or not there are major changes in the relative power positions of members of the system.

The Balance-of-Power System

Closely associated with the concept of stability in the international system -- or international political stability

-- is the concept of the balance of power, the method by which stability of the international system was maintained, with greater or less success, during the 18th, 19th, and early 20th centuries. The balance of power is a metaphor drawn from classical mechanics, a metaphor which, historically, came out of the great post-Renaissance interest in physics and astronomy. (Morgenthau 1954:185; Wright 1965: 751) Theoretically, and practically, it operated in much the way the homeostatic processes of the thermostat and automatic pilot do. When one European national actor threatened to become strong enough to control Europe and destroy the independence of other national actors, the threatened powers would realign themselves, throwing their combined weight against the threatening power and restoring the balance. Often England, the "holder of the balance," would play the instrumental role in restoring the balance by combining its power with that of the weaker side. (Herz 1960:37; Morgenthau 1954:169-78)*

It must be noted that for a national actor to "throw its weight into the balance" against the threatening power often -- perhaps usually -- meant going to war. War was not considered incompatible with stability, which the balance of power sought to maintain, but was rather a technique for

*This is, of course, a massively oversimplified presentation. See Morgenthau 1954:155-201 for the basic and best treatment of the balance of power.

preserving stability. The emphasis was on preventing domination of the system by one actor and maintenance of the independence of all the actors.

From a theoretical view, Morton Kaplan goes farther than stating that war may be necessary to redress the balance. He includes among his "essential rules" for the operation of a balance-of-power system the injunctions that each actor should seek to increase its "capabilities," negotiate rather than fight, but "fight rather than pass up an opportunity to increase capabilities." (1957:23)*

After World War I, the balance of power system was strongly criticized. In the authoritative 1930 Encyclopedia of the Social Sciences, Sidney B. Fay described it as a system that "tended to group states in hostile combinations and rested on force rather than justice," a system that "has now fallen into general discredit," and been replaced to a large extent by the "League idea," which grouped all states in a position of theoretical equality and also provided machinery for uniting the great majority in checking aggression against any one of the League members.

The "League idea" did not prove effective in checking aggression in the 1930s. As Kaplan, among others, has

*Kaplan defines capabilities to include territory, population, military forces, industrial capacity, skills, and the capacity to draw upon the aid of others (p. 11). He does not, however, seem to define just what he means by "pass up an opportunity."

pointed out, there exists no international political system, no international system with generally accepted laws and constitution. (1957:14) Thus, there is no external policeman who can make the system work, and the "League idea" could not make up for this essential lack. In the balance-of-power system, the complementary actions of the essential national actors, each acting according to its own self-interest within certain implicit rules, enforced the system, replacing the absent policeman and maintaining a balance that was stable within limits and capable of correcting itself when an actor broke the rules, as France did under Napoleon. The League idea, either in its original form or as expressed in modified form in the United Nations, was not able to maintain a stable balance, whatever other functions it might serve.

After World War II, the balance of power system -- which had continued, despite the discredit into which it had fallen, to operate in a limping, de facto manner during the interwar period -- was replaced by what Kaplan calls a "loose bipolar system." This system is characterized by two supernational blocs, each led by a strong national actor, and also by the presence of national actors who are not members of either bloc and by universal actors (the United Nations). (1957: 36-43) Kaplan's description of the "loose bipolar system" seems influenced by his observation of the international situation in the late 1950s, when he was writing. However,

it is an adequate description of the system since 1945, and up to the present. Although some writers see the bipolar system as having ended and see the world moving toward a multipolar system, it is hard to justify this position. A multipolar system calls for a sizable number of independent actors, at least roughly equal in strength and capable of acting independently, each in his own self-interest.* The current military power of the United States and Soviet Union is so much greater than that of any other power, including China, that the present situation can hardly be called anything but bipolar, despite the weakening of the alliance system in the West, a few intermittently appearing cracks in the Soviets' control of states subordinate to them, and the increasing power of China.

The question of the bipolarity or multipolarity of the international system has some relevance for the question of stability, since it is sometimes claimed that multipolar systems are more stable than bipolar. Deutsch and Singer say at the outset of their 1964 paper that it has always appeared intuitively obvious that this is so, and then go on to show by logical analysis that it is also theoretically so. Intuition aside, the multipolar balance-of-power system worked in practice because there were five or more principal independent actors who could form and re-form coalitions to prevent any one actor from gaining dominance.**

*See Deutsch and Singer 1964 for a description of a multipolar system.

**Kaplan explains the empirical reasons for the need for a large number of actors, and a minimum of five. (1957:23, 34)

Deutsch and Singer's theoretical multipolar system theoretically works better than a bipolar system because of the much greater opportunity for independent interactions between national actors. In any case, there seems to be no reason to think that the increased looseness of the current bipolar system will increase international stability, given the great disparity in power between the two superpowers on the one hand and the other major powers on the other, and given the assumed fact -- a given of this paper -- that the Soviet Union is following an expansionist policy.

What Constitutes Power?

"Balance of power" is still used with derogatory connotations to mean "power politics" or, more precisely, the conduct of international affairs on the basis of narrow national interests alone, without regard to ethical principles. Actually, a strong case can be made for the ethical imperative of a nation to operate according to its self-interest (see Kaplan 1957:23-24). The point for the present paper, however, is that power is a reality that cannot be ignored. Since the concept of power is so closely involved with stability and the "balance of power" system that sought to maintain it, it seems essential to define and limit what is meant by power in this context.

For purposes of this paper, power is taken to mean military power, broadly defined to include weapons and forces,

plus the organization, skill, and will to use them effectively, either directly in warfare or as a deterrent to military attack or other expansionist moves by an adversary. Power will not be used to include economic power as such, nor to include diplomatic skill unsupported by military power.

Although a full discussion of the nature of power is obviously far beyond the scope of this report, enough should be said to make clear that the definition and limitations just given are not arbitrary. The recent tendency to denigrate the effectiveness of military power in international affairs makes some explanation especially appropriate.

It is true that the United States was not able to apply its military power with adequate effectiveness in Vietnam, but it is equally true that it was military power, effectively applied by North Vietnam, that conquered South Vietnam and made it possible for Vietnam to take control of Cambodia and threaten Thailand. It is assuredly Soviet military power and not any preponderant Soviet economic or diplomatic strength that keeps Finland in pro-Soviet neutrality and threatens the finlandization of Western Europe. And if economic power could balance military power, there would be little concern for the continued independence of the Persian Gulf states, rich in petroleum but without the military means to protect themselves.*

* A good discussion of the current role of military force is found in Adelphi Paper 102, Force in Modern Societies: Its Place in International Politics (London: International Institute for Strategic Studies, 1973), and especially in the paper by Laurence Martin. See also Ellsworth 1978:136.

The Balance of Power Since World War II

Although the balance-of-power concept remained in poor repute in the United States following World War II and during the decades since, and although a traditional balance-of-power system could not operate in a world of two superpowers, nevertheless, in a broader sense, some kind of balance of power has taken place. Both Morgenthau (1954:156) and Kaplan (1957:22) make it clear that "balance of power" is used in at least two ways -- to refer to the particular system that operated in the 18th-20th centuries and is described briefly above, and to refer to the equilibrium that must somehow be established in any international system if the members of the system are to be preserved and constant violent change avoided. Morgenthau writes forcefully about a "misconception that has impeded the understanding of international relations and has made us the prey of illusions":

This misconception asserts that men have a choice between power politics and its necessary outgrowth, the balance of power, on the one hand, and a different, better kind of international relations on the other. It insists that a foreign policy based on the balance of power is one among several possible foreign policies and that only stupid and evil men will choose the former and reject the latter.

It will be shown in the following pages that the balance of power in international affairs is only a particular manifestation of a general social principle to which all societies composed of a number of autonomous units owe the autonomy of their component parts; that the balance of power and policies aiming at its preservation are not only inevitable but are an essential stabilizing factor in a society of sovereign nations; and that the instability of the international balance of power is due not to the faultiness of the

principle but to the particular conditions under which the principle must operate in a society of sovereign states. (1954:154)

After World War II the Soviet Union moved quickly to take control of Eastern Europe and appeared to threaten the independence of the Western European countries. The United States responded with the Marshall Plan, the Truman Doctrine, and NATO. The British scholar Max Beloff has said that there has been a balance of power in Europe since 1945 and that it has been maintained, basically, by the United States. (Beloff 1967) The United States has also made important contributions to maintaining the balance of power in the rest of the world, despite the fact that its efforts in Vietnam were ultimately unsuccessful. Although these activities have frequently been called "playing the world's policeman," the fact is that when an extremely strong national actor plays an expansionist role, as the Soviet Union has, some other actor or actors must act to maintain the balance. As Kaplan pointed out, there are no external policemen to whom the job can be turned over.

The Stability Concept in International Affairs After World War II

It was during this same period that stability came into wide use, not just as a concept for students of international relations, but as an expression of US national aims. As an aim, the concept seems to have first appeared in the phrase "a stable military environment," used by Secretary of State

Christian Herter in a February 1960 address to the National Press Club. This phrase, which refers primarily to stability of the international system (international political stability) but also implies strategic nuclear stability, shows how closely the two concepts were intertwined in their beginnings. Herter used the phrase to describe a world in which military force would be limited and controlled, although not abolished, and presented it as a US goal for the foreseeable future. It was presented as a practical, relatively immediate goal, in contrast to an ultimate, ideal goal of a world in which international law, rather than military force, would govern relations between nations.*

The stability concept, in the sense of stability of the international system, was well described by James E. King, Jr., in his invaluable lexicon:

Stability -- A term recently added to the jargon of strategy. Broadly speaking it connotes an international and military situation in which there is no war, and no international or domestic crisis that greatly threatens the United States (or the USSR) either directly or indirectly. . . . Stability relates not only to the probability of direct US-USSR conflict with all their armed forces, but also presumably to the existence of reasonable order in world affairs, and even within nations (particularly new ones in Asia and Africa), such that the US and its allies and the Communist Bloc are not likely to be embroiled in crisis situations threatening war.

It may be of interest to note that "stability" . . . seems to be replacing the traditional terms "balance of power" and "world order" in some of the employments to which they were normally put.

*New York Times, February 19, 1960.

What this suggests is that the hope of a "world order" acceptable to us (often described briefly as "peace with justice") is too faint to console us in the presence of the dread threat of nuclear destruction. Instead, we find ourselves compelled to settle for something that, though second-best, is still greatly to be desired. If this is a correct impression, then it may not be amiss to define "stability" as "peace, not necessarily with justice." (King 1960:Appendix, 26)

King's assessment reflected the period of maximum tension between the United States and the Soviet Union. Since that time there has appeared, along with a more optimistic attitude in the United States toward Soviet intentions, a feeling that although stability may not necessarily be characterized by justice, only justice -- in the form of economic equality and basic human rights -- can produce stability. This view, now very widespread among officials, the media, and academic people, is reflected in the Secretary of State's testimony quoted above (p. 8.) A careful analysis of this document produces the following paraphrase of its implicit position on stability of the international system: National stability comes into being when internal tensions are at a minimum, and this happens when the expectations of people within a country are being met to a reasonable degree, when "people can express their hopes and find their futures freely." Real stability is not just the status quo rigidly enforced by rather comes from peaceful progress toward basic human rights. (US Department of State 1980:3, 8) National stability, combined with

lowered tensions between nations, leads to regional stability. International stability results from this same process, and is aided by other factors; controlling the growth and spread of nuclear and other weapons is specifically mentioned. A stable relationship with the Soviet Union depends on both sides bounding competition with restraint and showing regard for each other's interests. (p. 5) Elsewhere in the testimony, the Secretary stresses the importance of a "military balance of power" and US defense forces that are "unsurpassed." (p. 1) However, it seems fair to say that, so far as stability of the international system is concerned, it is expected to develop in the way outlined just above.

It is not appropriate here to explore deeply or argue the merits of this position. Certainly the industrialized democracies are among the most stable nations, by any standards, and the North American continent probably the most stable region, by any standards, and certainly these are the nations with the most economic plenty and human freedom. There are, however, examples to show that moving toward more freedom does not always increase stability, the case of Iran in the last few years of the Shah being a striking one. In any case, in the past stability has been seen primarily as the result of a power-balancing mechanism. The idea that stability grows more or less automatically from economic equality and freedom, and that therefore measures directed toward achieving these values will automatically increase

stability is one that has been strong primarily since World War II. It was expressed in the Truman-era Point Four programs and foreign aid efforts since then, and, despite declining US efforts in foreign aid, is reflected in US official statements today.

Summary of Stability: The Basic Concept

Before moving on to a consideration of a more specialized kind of stability, it may be appropriate to summarize what is meant by stability as a general concept and in international relations.

In its basic historical, dictionary meaning, stability clearly connotes permanence and unchangingness of a particular kind. It is permanence that is the result of the inherent nature of the stable entity, of the way it is constructed. It is unchangingness that is not necessarily constant, but that alters only within given limits and that returns the stable entity to its original state following shocks and agitation. It may even enable the stable entity to seek and reach a new state of equilibrium if the old one is irretrievably lost.

Stability of the International System: The Traditional View

As for international political stability or, more precisely, stability of the international system, this modified version of Deutsch and Singer's definition seems a useful one: Stability of the international system is a high

probability that there will be no large-scale war, that most of the system's members will survive, and that no single nation will become dominant.* The characteristic of the system that makes possible this stability is the self-correcting capability provided by its members, each acting in its own self-interest, within certain implicit rules. This is true whether the system is operating in a traditional, 18th-20th Century "balance-of-power" manner, or under the recent loose bipolar configuration, or in some other way. There is no outside, supranational agency that can enforce stability. The instrument of enforcement used by the members of the system must be military power, broadly defined and employed either directly (in military action) or indirectly (in deterrence, persuasion, or threat). In the past war has frequently been employed to preserve or restore stability. Thus, paradoxically, although large-scale war is a sign that stability has been lost, some level of conflict has historically been part of the cost of maintaining stability.

*Morgenthau does not include the criterion that no single nation become dominant as part of his definition of the stability/balance-of-power mechanism. "If the goal were stability alone, it could be achieved by allowing one element to destroy or overwhelm the others and take their place. Since the goal is stability plus the preservation of all the elements of the system, the equilibrium must aim at preventing any element from gaining ascendancy over the others." (Morgenthau 1954:157)

Current Use of Stability with Reference
to the International System

As has already been mentioned, stability is now generally used -- without being formally defined -- to mean "a low probability of war." The common phrase of official statements "peace and stability" may be fairly translated to mean "no war and a low probability of war." King's poignant definition "peace, not necessarily with justice," is an apt one. Although in the past, and in the work of students of international affairs, prevention of dominance by any one nation was an intrinsic part of stability, or at least a central goal of the balance-of-power mechanism, stability is now almost exclusively associated with prevention of war. This phenomenon is undoubtedly closely connected with the overwhelming importance given to avoiding war, at almost any cost. As Robert Ellsworth wrote in 1978,

Today it is a seriously debatable question whether war between the great powers is an available option to prevent hegemony. Indeed it is debatable whether the prevention of hegemony takes priority over the avoidance of war as the aim of great powers -- at least of the United States. (p. 135)

The chief reason for this change in meaning is not difficult to find. As Glenn Snyder has written,

The dimension of stability which receives most attention in the balance of terror, and, by extension, in the contemporary balancing process as a whole, is the propensity of the system to produce war, the obvious reason being the possibility of nuclear war, the horrifying nature of which seems to outweigh all other considerations. (1965:197; emphasis in original)

There can be no argument with the weight of this consideration. However, if stability is to be implicitly defined only in terms of war avoidance, it must be recognized that the international system could now move from a relatively stable, loose bipolar system to a relatively stable system in which the Soviet Union exercised hegemony, without ever passing through a period of instability.

THE CONCEPT OF STRATEGIC NUCLEAR STABILITY

The second way in which stability is used in discussing matters of national policy and strategy -- strategic nuclear stability -- is self-evidently the result of the appearance of nuclear weapons. More specifically, it is the result of the Soviet Union's acquiring nuclear weapons and the intercontinental delivery systems to send them against the United States. Just as, in current usage, stability means a low probability of war, strategic nuclear stability basically means a low probability of strategic nuclear war.

A Brief History of the Concept of Strategic Nuclear Stability

At the beginning of the nuclear age, air-delivered nuclear weapons were seen as the ultimate weapon of surprise attack, against which there could be no adequate defense. Some thought showed, however, that if one had nuclear weapons of one's own that could survive an attack and retaliate, one's enemy would be deterred from using nuclear weapons,

and deterrence could substitute for defense. This view was firmly established by 1955. In the later 1950s, analysts began exploring the dangers of one side's striking first because it feared its opponent would otherwise strike first, and of one side's striking first to take advantage of the temporary weakness of the opponent. Using the techniques of the recently developed theory of games, analysts sought the kind of nuclear weapons dispositions that would be best in theory for both adversaries and which therefore would be most stable, in the sense of producing the lowest probability of nuclear war.* By 1960 the desirable dispositions had been established as those in which both sides had retaliatory forces that could survive a surprise attack ("first strike") by the other side, with enough remaining strength to inflict unacceptable damage on the opponent. (King 1960:24)

Also in the late 1950s, to some analysts it seemed that there was something inherently and securely stable about a situation in which both sides had about equal numbers of missiles -- as long as each missile carried only one war-head. What with inevitable technical failures, an attacker was bound to disarm itself faster than it would disarm its

*For the earliest significant paper on deterrence, see Bernard Brodie, "Implications for Military Policy," in The Absolute Weapon, ed. Bernard Brodie (Harcourt Brace: New York), pp. 70-107. For a historical summary of early deterrence theory, see Gay Hammerman, The Deterrence Concept: A Synthesis Based on a Survey of the Literature, prepared for the Defense Nuclear Agency under Contract No. DNA 79-C-0285, April 1980.

opponent. (Coyle 1976:16) The development of MIRVs was to doom this optimistic analysis.

About 1960 the concept of stability took on a new and significant role. It became the connecting link between arms control policy and weapons/defense policy. The theory was that stability was the aim of arms control as well as of defense policy and that therefore whatever quality and quantity of weapons systems helped achieve stability were good for both arms control and defense. This approach has continued strongly influential for the past 20 years.

By the mid-1960s the idea that populations must be vulnerable to nuclear attack if stability was to be achieved had become an essential part of the stability canon. Maximum stability was theoretically achieved in the nuclear confrontation between the two superpowers if both sides possessed invulnerable retaliatory forces and the populations of both sides were vulnerable to attack by the other side. This concept can be expressed in the diagram presented as Figure 1.

By the mid-1970s the concept had been elaborated upon and codified, to such an extent that almost any feature of any weapons system (range, accuracy, throw weight, mobility, and so forth) could be classified as either stabilizing or destabilizing. Probably the most thoughtful and most influential version of this codification is in Jerome Kahan's 1975 book Security in the Nuclear Age (pp. 272-73, 304).

This codified approach to stability was taken to almost absurd lengths in the later 1970s, with the most notable example being the Arms Control Impact Statements required by Congress of the Executive Branch for all weapons systems for which funding is sought. In these statements the same weapon is sometimes found to be stabilizing in some ways and destabilizing in others, with no apparent means available for deciding what its overall theoretical effect on stability would be. The ACIS approach has also shown clearly another questionable aspect of the codified stability concept: since for maximum stability the opponent should not feel threatened, weapons policy logically has to be made in such a way that new weapons do not look too effective. (See US Congress 1977b)

By the end of the 1970s, a reaction seemed to be developing to the extreme emphasis on stability -- in the narrow sense it had come to have -- that had guided both weapons and arms control policy for the two preceding decades. Colin Gray, the first defense analyst to deal with the subject critically, produced some preliminary work in 1979 and the first extensive critical analysis in early 1980. Gray has said of stability that, as the term is loosely employed, it is "fully compatible with policy paralysis." (1980:36)

Early Uses of the Term

Stability, as such, was rarely explicitly discussed before 1960, although it had been identified as the desirable outcome of the strategic nuclear equation by that time. The

first definition of stability, in the sense being considered here, that has been found is King's, from his 1960 lexicon appendix. King devotes most of his three-paragraph essay on "stability" to stability of the international system. However, he says,

Sometimes "stability" is used more narrowly to indicate a situation in which there is little or no probability of general war between the U.S. and the U.S.S.R., for the specific reason that neither will consider the damage to itself resulting from a retaliatory (second) strike by the long-range nuclear attack forces of the other acceptable, even if it launches a surprise attack (first strike) aimed at reducing the power of the other side to retaliate as much as possible. Synonyms for this narrow usage are: "strategic stability", "stability of the equation of strategic power," "mutual deterrence," "balance of power," or "balance of terror." (King 1960: Appendix, p.24)

King's work on defining stability and other strategic concepts was done for a Seminar on Deterrence and Arms Control, held in the summer of 1960 under the auspices of the Institute for Defense Analyses. The fact that a seminar with this title was held suggests the search for a link between the two goals. Although stability, which was to provide the link, was little mentioned in the seminar discussions, that seminar led to IDA's Project VULCAN, funded by the Department of State, and a number of the papers produced for that project dealt with stability. It is clear from these papers that stability was implicitly defined as a low probability of nuclear war, and that invulnerability and nonprovocativeness of the retaliatory force were seen as the chief requirements for stability. The difference between stability that prevents a deliberate surprise attack and stability that prevents war

as the result of miscalculation, accident, or escalation from a local conflict -- later to be called crisis stability -- was recognized. A good deal of attention was devoted to what was perceived as the destabilizing effects of the spread of nuclear weapons to additional countries. The possible direct relationship between stability at the strategic level and instability at lower levels of conflict was considered. Finally, arms control measures that could promote stability were specifically sought. (Institute for Defense Analyses 1961b:13)

All these points, made in what may be the first formal exploration of the stability concept, have continued to be of prominent concern in strategic discourse, and several of them have been hardened into what may be called stability doctrine. In 1960 stability doctrine had not yet hardened, however, and some of the points made in the IDA papers did not fit into it. For example it was recognized that stability might not in all circumstances be a desirable policy goal, although the project did not, apparently, try to decide the matter. Also, civil defense measures do not seem to have been viewed as necessarily destabilizing. Finally, a good deal of attention was devoted to nonrational factors influencing decision making, and their effect on stability.

It was also in 1960 that Henry Kissinger, in his landmark book on deterrence, The Necessity for Choice,

included brief, extremely clear discussions of strategic nuclear stability. Invulnerability of the retaliatory force, said Kissinger, is necessary to avoid a surprise attack, and there can be no stability without an invulnerable retaliatory force. But stability also requires that invulnerability not be attained by numbers alone, since to do so would make the invulnerable retaliatory force look like a first-strike force and would invite a preemptive strike from the adversary. (pp. 22-23, 34, 216-217)

A fuller 1960 discussion of stability was Glenn Snyder's. Snyder, in a journal article, suggested some of the characteristics of strategic nuclear stability that later became codified in stability doctrine. Although, as King said, some writers used balance of power to mean strategic nuclear stability, this was an unfortunate and confusing use, and Snyder specifically differentiated between the traditional balance of power and what he called the balance of terror, or strategic nuclear stability. While the balance of power had depended to a large extent on quantitative military capabilities that were fairly equal, the new kind of stability did not. Territory, industrial resources, and geographic distance were all less important for the new stability, Snyder said, although he recognized that they were still important for "limited war," and also noted that they had some significance for the new stability. For example, if one side acquired territory that shortened the distance between its bases and its opponent's homeland, it could increase the

accuracy and payloads of the missiles it could deliver and also, by attacking from more points of the compass, could complicate the opponent's problems of warning and defense.

(G. Snyder 1960:27)

Basically, however, Snyder said the following about stability in general and strategic nuclear stability in particular:

An important characteristic of any balancing system is its degree of stability -- i.e., the strength of tendencies for the system to remain in balance once an equilibrium has been reached. The most dangerous form of instability is that which tends to move the system in the direction of war. In general, the stability of the balance of terror at any particular time depends on three prime factors: the vulnerability of striking forces, the accuracy of striking forces, and the number of such forces on each side.

Instability is greatest when the forces on both sides are both highly vulnerable and highly accurate, so that with roughly equal numbers of forces on each side, one side could practically eliminate the forces of the other in a single blow. . . . Maximum stability would be obtained when both sides, by virtue of the invulnerability of their forces, have something approaching maximum second-strike capabilities -- i.e., a capacity virtually to destroy the opponent's economy and society even after the opponent has had the advantage of the first strike. (G. Snyder 1960:26)

Here are presented some of the key characteristics of strategic nuclear stability, as it developed in the following 15 years: The most important function of stability is the prevention of war and tendency toward war. The most stable situation in a bipolar nuclear-power system is that in which both sides have maximum second-strike capabilities. Accurate striking forces are destabilizing. (The reason for this is not made explicit, but it may be readily deduced that it is the fact that accurate forces are more effective at destroying the

other side's striking forces and thus more useful for a first strike than a second strike.)

Stability: The Arms Control/Arms Connection

The concept of strategic nuclear stability took on its prominent role in US policy as the link between arms control policy and weapons/defense policy in the early 1960s. The earliest influential expression of this role for stability was in the 1961 book Strategy and Arms Control, by Thomas Schelling and Morton Halperin, which grew out of a 1960 study group of academic people and research institute members that met at MIT under the sponsorship of the Twentieth Century Fund. The concept was beautiful in its simplicity, logic, and optimism. Arms control and defense policy were not necessarily in conflict. Both sought to avert war, in the national interest. Instead of an arms control establishment that worked to abolish weapons and an arms establishment that sought to build more and more bigger and better weapons, both could seek the kinds and numbers of weapons that would be most likely to avert war. Arms control would not be practiced only by diplomats in negotiating treaties but by Pentagon generals in choosing weapons systems. Inherent in the concept was the idea that the Soviet Union also stood to gain from averting war, and that weapons choices made by the United States could encourage the Soviet Union to make complementary choices and thus make war still less likely:

Adjustments in military postures and doctrines that induce reciprocal adjustments by a potential opponent can be of mutual benefit if they reduce the danger of war that neither side wants, or contain its violence, or otherwise serve the security of the nation. This is what we mean by arms control. (Schelling and Halperin 1961:143)

Schelling and Halperin seem to have been the first to evaluate weapons characteristics and policies systematically for their impact on arms control. Before listing some of these, it may be useful to note a fact that is implicit in these authors' presentation although not explicitly discussed: Not only does the great destructiveness of nuclear weapons tend to make avoidance of war something close to an absolute value; the nature of nuclear weapons is also such that, at least theoretically, that very nature makes war especially hard to avoid because it makes a surprise attack especially tempting. Nuclear weapons have been seen as the ultimate surprise-attack weapons. As has been mentioned above, this aspect of nuclear weapons was very impressive to the first analysts who addressed the subject. (Brodie 1946) Therefore, those who attempt to find techniques for avoiding nuclear war have to start with the fact that the weapons appear inherently destabilizing.

Schelling and Halperin, in dealing with this problem, made the first criterion for arms control removing or reducing the incentive to preempt. They suggested that limiting the accuracy of missiles would be useful to this end, since it would take away some of the premium on surprise, making missiles good only for retaliation. These authors also suggested that if both sides would refrain from protecting their populations, this would also help remove the premium from surprise, since one's own population would be vulnerable to a retaliatory strike by any remaining enemy forces if one carried out a

surprise first strike. This was an early expression of the idea that making populations vulnerable was a positive good. Brodie (1946) had urged that making one's society as invulnerable as possible was an aid to deterring an attack by one's opponent, and thus desirable.

Not only did Schelling and Halperin suggest that civil defense is incompatible with the aims of arms control, they also indicated that the old idea that defensive measures in general are compatible with arms control and offensive measures are not must be reversed in the nuclear age. The criterion, they said, is the first-strike force. A first-strike force is counter-war-avoidance, counter-arms-control. Whatever is compatible with a first-strike force is thus undesirable for this reason. Weapons systems and dispositions that are designed to hit populations are for retaliation only and thus may be reassuring to the other side, while those designed to hit the enemy's weapons may be provocative. Any defensive measures, from weapons designed to knock out incoming enemy missiles to fallout shelters, are compatible with a first-strike force rather than a retaliatory force, and therefore are undesirable.

Implicit, and sometimes explicit, throughout the discussion is the idea that the United States should base its policies on what is best for both sides, in its own self-interest. There is an implication that one should not threaten the other side by possessing so many missiles that it feels it has to put its efforts into a preemptive capability instead of into

more expensive SLBMs, which, with their inaccuracy and invulnerability are seen as the ideal retaliatory weapons. The authors point out that there will always be asymmetries, even when there is stability. A stable balance may have forces on the two sides that look very different. The Soviets, for example, might not want Polaris-type systems.

In discussing the various weapons characteristics and dispositions that are compatible and incompatible with first-strike forces, Schelling and Halperin do not often use the terms "stable" and "stability." The term used is usually "arms control." The stability concept is implicit throughout, however. The central thing these authors say about stability, as such, is this: In the past, traditionally, since the beginning of the arms control movement, arms control had generally been defined by level and ratio of forces. To these stability is now often added.

A "balance of deterrence" -- a situation in which the incentives on both sides to initiate war are outweighed by the disincentives -- is described as "stable" when it is reasonably secure against shocks, alarms, and perturbations. That is, it is "stable" when political events, internal or external to the countries involved, technological change, accidents, false alarms, misunderstandings, crises, limited wars, or changes in the intelligence available to both sides, are unlikely to disturb the incentives sufficiently to make mutual deterrence fail. (p. 50)

Schelling and Halperin say that while this concept does not cover everything in arms control that is not covered by level and ratio, it does cover a lot. It would seem that, for these authors, it covers the following characteristics of weapons and

weapons dispositions, all summarized above and all given by Schelling and Halperin as conducive to arms control:

- no first-strike forces
 - limitations on the accuracy of missiles
 - no protection for populations
 - no defense against ballistic missiles
- secure second-strike forces
 - invulnerability of unfired missiles to attack

This concept of arms control gained strength during the 1960s. It guided the US negotiators during the SALT (Strategic Arms Limitation Talks) process, and was embodied, so far as the United States was concerned, in the SALT anti-ABM agreement of 1972, which virtually eliminated defense against intercontinental missiles. Stability as such was not often cited during this period, but stable deterrence, a closely related concept, became almost universally accepted in the defense community as the goal of both strategic military policy and arms control policy. The ability to deliver unacceptable damage to Soviet society even after receiving a first strike, an ability termed "assured destruction capability," was stressed by Secretary of Defense McNamara as the "cornerstone of our strategic policy" in 1967.* The ability to deliver strikes against Soviet missiles -- counterforce capabilities -- originally

*Address to United Press International Editors and Publishers, San Francisco, September 18, 1967. Department of Defense press release 868-67.

avored by McNamara (as in his Ann Arbor speech of June 1962), was quickly dropped as a goal. Efforts at civil defense, pushed in the early days of the Kennedy administration, were virtually abandoned by the mid-1960s. Ballistic missile defense was fought vigorously by McNamara, although finally accepted by him to a very limited extent (1967). President Nixon urged an even more limited ballistic missile defense (BMD) approach, and one more strictly tailored for defense of US missiles, not people. Cost/effectiveness was an important reason for all these decisions, and certainly for McNamara's insistence that it was better to increase US offensive capabilities to cancel out the Soviet BMD efforts than to respond with BMD measures of our own. However, it appears that the emphasis on stable deterrence (also called MAD -- mutual assured destruction) was motivated largely by the defense and arms control communities' assimilation of the stability concept and their view that if the United States denied itself defense against Soviet forces, and curtailed its ability to strike Soviet forces, while maintaining its ability to destroy Soviet cities and industries, the Soviets might be expected to reciprocate, and stability to be achieved. (Iklé 1973:277)

The Codification of Stability Doctrine

By 1975 stability had hardened into a codified doctrine which, applied to any weapons system or technological innovation with weapons implications, could enable an analyst to decide in what ways it was theoretically stabilizing and in what ways theoretically destabilizing.

Scoville's work. One of the first major steps toward this codification was a popular book called Missile Madness, written by Herbert Scoville and published in 1970. Although this is a simply written book, illustrated with cartoon-type drawings and designed to reach as wide an audience as possible, it is a carefully reasoned, serious, and significant piece of work. Its author had been an Assistant Director of the Arms Control and Disarmament Agency, had also been Deputy Director of the Central Intelligence Agency, and at the time of the book's publication was directing the Brookings-Carnegie Strategic Arms Policy Study Group that led to Kahan's 1975 book (see below, and bibliographic entry). Scoville's purpose in writing Missile Madness was to build public support for arms control -- specifically for freezing the deployment of land-based ICBMs and ABMs and, especially, the development of MIRVs. Scoville's argument is focused on stability, and his basic point is that the time of his book, 1970, was a time when strategic nuclear stability was relatively well established, and thus a crucial time for arms control measures that would preserve that status quo.

Scoville listed four key factors determining stability, of which the most important was that there be no incentive for any nation to carry out a first strike. The other factors were certainty by both sides of the capabilities and intentions of the other side, to the greatest extent possible; a reliable command-and-control system permitting decisions at the highest political level; and nonproliferation -- keeping the number of

nations capable of initiating nuclear war to a minimum. (Scoville and Osborn 1970:25-26) Elsewhere in the book he also mentioned the many safety precautions against accidents and irresponsibility as contributing to stability. (p. 43)

Following are the chief conditions Scoville says contribute to the first, crucial factor, the existence of no incentive for a first strike:

- Invulnerability, or survivability, of the retaliatory force. Scoville saw 1970 as a time of stability largely because ICBMs were hardened in silos, while in the 1950s and early 1960s the retaliatory force had consisted of bombers, highly vulnerable on the ground. The first US ICBMs had also been vulnerable. (pp. 30-31, 35)

- No ABM protection of populations against "the major threat of which the Soviets are capable." Attempting such protection could arouse fears in the other nation that its assured deterrence was eroding and thus cause arms racing (which Scoville implicitly identifies with instability). Protection of ICBM sites by ABMs, on the other hand, should not give special concern to the other side, and thus should not endanger stability, so long as populations are not protected. (p. 22)

- Inaccuracy of missiles. Accurate missiles may be able to destroy missiles hardened in silos. This makes them suitable for a first strike. (p. 58)

- No deployment of MIRVs (missiles with multiple warheads). If both sides have missiles with six warheads each, and the two

sides have equal numbers of missiles, the advantage to the side striking first against missiles (i.e., making a first-strike counterforce attack) could be as great as 72 to 1. (pp. 58-59) Although MIRVs could have certain stabilizing effects, in that they would make it easier to penetrate ABM defenses in carrying out a second strike, on balance, Scoville wrote, they were the most serious and immediate threat to stability. (pp. 57-58, 75)

Scoville devoted a good deal of attention to the destabilizing effects of ABMs. Not only would they make the other side doubt the efficacy of its second-strike force against cities and industry and thus lead to arms racing, they would be likely to lead specifically to MIRVs, with their own destabilizing attributes. Also, because they would be more effective when fully alerted and prepared for the coming attack, they would be more effective in the hands of a power striking first than of one retaliating; thus, if both sides have ABMs, there will be an added incentive to strike first. (p. 47)

Yet, although he found ABMs on balance destabilizing, Scoville pointed out a number of ways in which they could be stabilizing. By making a small nuclear force less likely to do any significant damage to a major nuclear power, they could discourage proliferation of nuclear weapons; small countries would be less tempted to acquire a few bombs to serve as a minimum deterrent. Also, if a real threat to the survivability of a nation's ICBMs existed, deploying ABMs to protect them,

without deploying any to protect populations, could strengthen stability. However, a very large ABM force would be necessary to provide any real protection. Protecting a capital city, along with key personnel and command-and-control centers, could also be stabilizing, since it would protect the ability to retaliate. Again, however, the ABM force would have to be extremely large to be effective. (p. 51)

In summary, Scoville clearly and effectively presented what had become the arms control community's -- and part of the defense community's -- position on stability: Stability is the key to effective deterrence, and thus to effective prevention of nuclear war. Stability is, in fact, by implication, equal to a low probability of nuclear war. The capability and temptation to deliver a first strike are destabilizing. The capability to deliver a second strike is stabilizing. Everything that facilitates a first strike, and specifically all weapons and weapons characteristics that do so, are destabilizing, while all weapons and weapons characteristics that insure a successful second strike are stabilizing. The corollary of this maxim was that whatever can attack weapons is bad, and whatever can attack only populations is good.

The "first strike -- bad; second strike -- good" approach seems to have been accepted by a majority in Congress in the early 1970s. Scoville had pointed out in 1970: "Recently funds have been sought to increase still further these accuracies [of MIRVed missiles] to the point that they cannot be reasonably

justified for industrial targets. Even though the U.S. has no intention of launching a first-strike, the Soviets could easily misread these signals and become convinced that this was the intention." (p. 58) The following year the Senate voted down funds to improve the accuracy of US missiles and in doing so specifically referred to the arms-control concept that making missiles accurate enough to destroy enemy missiles is consistent with a first-strike force and therefore destabilizing and undesirable. (Iklé 1973:277)

The SALT I anti-ABM treaty of 1972 was a more conspicuous materialization of stability doctrine. As Iklé wrote,

Indeed, our nuclear strategy is supposed to work the better, the larger the number of hostages that would pay with their lives should the strategy fail. This view has become so ingrained that the number of hostages who could be killed through a "second strike" by either side is often used as a measure of the "stability" of deterrence. Our very motive behind the recent treaty curbing the deployment of missile defenses is to keep this number reliably high. (Iklé 1973:281)

This, of course, was only true from the US point of view. There is no evidence that the Soviets saw the treaty as primarily intended to insure the success of an anti-people-and-industry second strike. Soviet attitudes on stability are discussed below. (pp. 75-81).

Kahan's work. A book which may have been even more influential than Scoville's, because of its comprehensive treatment of nuclear strategy, its scholarly and skillful presentation, and its consequent wide use in colleges and universities, is

Jerome Kahan's 1975 book Security in the Nuclear Age. As indicated above, this book grew out of a joint study group of the Brookings Institution and the Carnegie Endowment for International Peace. It is a full, balanced presentation of deterrence and related strategic matters. The second half of the book is entitled "The Search for Stability," and the book is strongly focused on the stability concept. Kahan favors "stable deterrence" as the best US arms control and defense policy. He accepts the term MAD, identifying himself with the position it represents, but stressing that assured, rather than destruction, must be emphasized; that is, it is the sureness of destruction rather than the quantity that is most important. Kahan's concept of stability is basically the same as Scoville's, and in a direct line from Schelling and Halperin's 1960 work. In Kahan's book the concept has been compressed and codified into such clear guidelines for stability that a one-page chart can readily be prepared from his book for rating weapons, weapons characteristics, and defense programs as to their theoretical impact on stability.

In presenting his concept of stability, Kahan first makes clear that under the concept of "mutual stability," which he advocates, "the United States benefits if the Soviet Union maintains a strategic deterrent capability comparable in overall strength to our own." Mutual assured destruction and Soviet numerical parity with the United States were to be considered in the US interest. The logic behind this position is the belief

that the Soviet Union will be less likely to attack if it has confidence in its own ability to survive a US first strike and retaliate effectively. Thus the United States should avoid posing a threat to the Soviet deterrent (retaliatory force) and should avoid giving the impression that the United States is seeking strategic superiority. To establish mutual stability, strategic systems must be classified as either stabilizing or destabilizing. Those that are destabilizing must be avoided.

(p. 272) Systems that increase the survivability of the US retaliatory force are stabilizing, as are systems that increase countervalue effectiveness (effectiveness against cities and industries) without threatening Soviet missiles. Systems that are designed to negate an opponent's retaliatory capability (counterforce systems) are destabilizing. Following is a listing of stabilizing and destabilizing factors, drawn from pages 272-74, 280, and 304, of Kahan's book:

Stabilizing Factors

- factors that insure invulnerability of the retaliatory force
 - mobility of unfired missiles
 - hardening of unfired missiles
 - dispersion of unfired missiles
 - concealment of unfired missiles
 - warning system excellence
 - command-control-communications survivability
 - active defense of missiles by ABMs

- factors that insure ability to retaliate
 - penetration aids (including MARVs -- maneuverable reentry vehicles -- if these are inaccurate)
 - multiple warheads, including inaccurate MIRVs
- factors that make weapons useless against the opponent's retaliatory force
 - long flight time (because missiles in silos are "time-urgent" targets)
- safeguards against accidental or impulsive launching of retaliatory force

Destabilizing Factors

- factors that threaten the opponent's strategic missile forces
 - large numbers of missiles
 - accuracy of missiles
 - high yield of warheads
 - strategic antisubmarine warfare (ASW) programs
- other factors that threaten the opponent's ability to retaliate
 - ABM or bomber-network protection for one's population
- factors that make one's retaliatory force vulnerable and thus tempt a first strike by the opponent
 - unhardened ICBMs; shipborne missiles

Factors That Are Either Stabilizing or Destabilizing Depending on Specific Characteristics

- new weapons systems
- arms reductions
- arms control negotiations and agreements

- flexible targeting options (would be destabilizing if they included counterforce targeting)

Factors That Are Both Stabilizing and Destabilizing

- land-mobile missiles, which strengthen stability through their mobility but could create instability because the missiles cannot be accurately counted and could appear more numerous than they are
- selective targeting options, which improve US retaliatory capabilities but could appear to the Soviets to indicate a first-strike policy
- ABMs for hard-point defense, which could appear to be the first step in a program to protect populations
- MARVs, whose penetrability aids retaliation, but which could be counterforce weapons if they were accurate
- many other weapons with comparable stabilizing and destabilizing features

Although so-called passive defense of populations through such civil defense measures as fallout shelters and evacuation plans would appear to be destabilizing according to Kahan's guidelines, he does not specifically mention measures of this kind.

It may be noted also that in the five years between Scoville's book and Kahan's book MIRVs had become a fact. Kahan thus naturally focuses on the positive, stabilizing effect they may have and on the importance of their accuracy being kept low.

Kahan recognized that it would not always be possible to carry out the goal of an assured US deterrent (a survivable retaliatory force capable of assured destruction of Soviet society) without seeming to threaten the Soviet deterrent. To that end, however, he urged that numerical equality not be sought for its own sake and that all aspects of weapons procurement programs be "systematically evaluated with likely Soviet reactions in mind." (pp. 274, 275)

The ACISSs. The impact of this advice, and other similar advice, upon public policy may be most clearly seen in the Arms Control Impact Statements presented to Congress by the Executive Branch since 1976. The ACISSs also show the impact of the codification of stability doctrine as a whole.

The idea for these impact statements, required by 1975 legislation, was presumably an extension of the concept of the environmental impact statements required for public works. The stability concept was an important part of the ACIS idea, even before the legislation was passed. A study by former ACDA official Philip Farley, prepared for a subcommittee of the House Committee on International Relations and submitted in 1974, found that one problem in arms control was "the sense of urgency in the development of new weapons systems even when they seem to add to instability, rather than strategic stability." (US Congress 1977a:17; emphasis added)

The 1975 legislation required the Executive Branch to submit "a complete statment analyzing the impact of [four categories of programs] on arms control and disarmament policy and negotiations." (US Congress 1977a:vii) Both the Senate Committee on Foreign Relations and the House Committee on International Relations found the first two sets of ACISs, those prepared for Fiscal Years 1977 and 1978, to be unsatisfactory. The House Committee, according to its chairman, was "frankly appalled" at the 1977 statements as "not analytical," dealing with impact of new weapons on negotiations "only at the shallowest level," and not dealing at all with their impact on policy. (US Congress 1977a:vii) The two committees asked the Congressional Research Service (CRS) of the Library of Congress to prepare a comprehensive analysis of the ACISs that had been submitted; develop standards for ACISs; identify the specific questions the statements ought to answer; and produce several model impact statements.

This the CRS team did, guided in their work, in part, by the 1974 Farley study. (US Congress 1977a:17) It seems likely that they also made use of Kahan's 1975 book in establishing the specific questions that should be asked about each weapons system. In any case, these CRS critiques and model ACISs are an excellent archive for exploration of the question, "What was the relationship of arms control, weapons/defense policy, and stability in the mid-1970s?" Following are some of the questions that the CRS proposed be asked about all new weapons:

1. Factual information and issues related to military considerations. . . .

b. What effect might the proposed system have on the military stability of the relevant environment (e.g., specific regional military forces, U.S.-Soviet strategic balance, etc.)? In the case of strategic weapons, could it be viewed as a threat to strategic equivalence? Could acquisition of the proposed system contribute to an adversary's perception of his own position as being inferior? Under what circumstances could the system be viewed as one which granted the United States an advantage over an adversary?

d. If this system were actively developed and/or deployed, how might one expect an adversary to respond in his own weapons program? To what extent would the development of similar weapons become an adversary's goal? To what extent would an adversary develop countermeasures? . . .

g. To what extent could the proposed system be viewed as enhancing a first-strike capability? What is the extent of its technical capability to be used in a counterforce role? . . .

2. Arms control policy

a. How is the weapons program consistent with arms control policy? In what ways could it reduce the likelihood of war or enhance crisis stability? . . . (US Congress 1977a:20; emphasis added)

Several points may be made about these questions. First, the CRS team had taken very seriously the injunction of Kahan and others to examine every new weapons development with a view to how it would appear to the Soviet Union. The clear implication that if a new weapon might be viewed as giving the United States an advantage over an adversary, then a black mark should be chalked up against it, seems a ludicrous, if logical, application of this principle. The emphasis on stability may also be noted. Stability as mentioned in paragraph 1b. seems to

mean equivalence, rather than stability as it had been codified in the early 1970s, but paragraph 1g., with its clear implication that for a weapon to contribute to a first-strike capability or a counterforce role was undesirable shows that the basic principles of codified stability were being followed.

Later ACISSs followed, in general, the outline laid down by the CRS. By 1979, the specific questions about whether the weapons system might make the adversary see his position as inferior, and about its contributions to a first-strike capability, had been dropped. However, all ACISSs included a section in which the probable effect of the proposed weapons system on global and regional stability was discussed, and these discussions reflect fully the codified concept of stability. Following are a few examples from the ACISSs for Fiscal Year 1980:

The B83 program is not considered to be destabilizing, since manned bombers cannot be used effectively as a first-strike system. To the degree that the B83 program maintains or enhances the retaliatory capability of the U.S. strategic bomber force, the program may be considered to be stabilizing. (US Congress 1979:173)

These improvements in U.S. airborne strategic offensive forces could contribute to greater crisis stability. The addition of new E-4 aircraft improves command, control, and communications necessary for maintaining the strategic forces under full coordination by National Command Authorities during acute crises or strategic nuclear war. Moreover, the developments of ALCMs and ASALMs on stand-off platforms would help to maintain the viability of the U.S. airborne strategic offensive forces in the face of improving Soviet air defenses. (US Congress 1979:37)

For the following passage, letters have been added in the margin beside a number of statements, as an aid in analyzing

the passage for references to codified stability doctrine, as presented in concise form on pp. 52-54 , above:

- (a) Over the long term, extensive improvements to U.S. hard-target kill capabilities [i.e., greater payload and accuracy], starting with the current MM III modernization program, might prompt a variety of Soviet responses, some of which could affect strategic stability.

- (b) Such improvements might reinforce the Soviet interest in a "launch-on-warning" or "launch-under-attack" strategy to prevent destruction of their silo-based ICBMs if the U.S. struck first. . . .

- (c) The increasing vulnerability of current Soviet ICBMs also may heighten their interest in deploying more survivable systems (e.g., SLBMs and/or land-mobile ICBMs), although reduced emphasis on ICBMs would represent a significant departure from past Soviet strategic force strategy. The net effect of the [Soviet] deployment of land-mobile ICBMs is difficult to assess. It could increase crisis stability in three ways: (1) a Soviet conversion to land-mobile ICBMs (or to SLBMs) within fixed SALT limits on numbers of launchers could reduce the current large asymmetry in throw-weight, and (2) the new missiles might be less suitable or adaptable to use in a time-urgent hard-target counterforce role, but (3) primarily, it could reassure Soviet leaders of the survivability of their ICBM force. Depending on the basing mode selected, it also could make more difficult the assessment of Soviet capabilities and the negotiation and verification of arms control agreements. In addition, Soviet adoption of a multiple protective structures type of basing for some portion of its ICBM force could raise concern about the possibility of a rapid force build-up in the event a SALT agreement was abrogated and vacant shelters filled. . . .
- (d) Less likely, the increasing vulnerability of current Soviet ICBMs may also increase their incentives to negotiate further mutual reductions in the number of ICBM launchers. (US Congress 1979:18-19; letters in margin added)

The last passage may be paraphrased as follows, with the references to stability doctrine spelled out:

- (a) Greater payload and accuracy of US missiles (such as the proposed MX) could threaten the invulnerability of the Soviet retaliatory force, and thus are destabilizing. Specifically,

(b) they could lead the Soviet Union to make plans to carry out a preemptive first strike.

On the other hand, (c) these bigger and more accurate US missiles could have a stabilizing effect if the Soviets, in response, made their own missiles more survivable. (d) If they chose to make the missiles survivable by putting them in a land-mobile basing mode (similar to the "shell game" deployment proposed for the MX), this action could have the following specific stabilizing effects: (e) It could reduce the total yield of Soviet warheads, if the Soviets replaced massive older missiles with smaller new ones, and this would not only be stabilizing in itself but would make the two superpowers more equal in total nuclear yield. (Although not part of codified stability doctrine, rough equivalence in weapons is considered desirable by many stability advocates [See Kahan 1975:305-08] and is often loosely said to favor stability, as it is here.) (f) Another stabilizing effect Soviet land-mobile deployment of ICBMs could have would be that these new missiles might not be large enough and accurate enough to knock out US ICBMs, and thus their deployment would increase the survivability of the US retaliatory force (although why the Soviets would respond to US missiles that threatened the survivability of Soviet missiles by deploying missiles that did not threaten the survivability of US missiles to the same extent that previous Soviet missiles had is hard to understand). (g) But primarily, the land-mobile deployment would reassure Soviet leaders as to

the survivability of their ICBM force, and survivability of the retaliatory force is the most basic requirement for stability.

But, on the other hand, (h) even if the Soviets did respond to larger and more accurate US missiles by putting their own missiles in a land-mobile deployment, there could be some destabilizing effects. This deployment would make it possible for the Soviets (i) to greatly increase the number of their missiles, and also might make it appear that they had increased the number, whether or not they had. Both large numbers of missiles and the appearance of large numbers of missiles are destabilizing.

On the other hand again, it is possible, though not likely, that (j) the US deployment of the larger and more accurate missiles and consequent threat to the survivability of Soviet ICBMs might lead the Soviets to join in negotiating further limits on the numbers of both US and Soviet missile launchers.

This, then, is the logical result of attempting to make weapons decisions on the basis of stability doctrine. Almost every weapon characteristic can be seen as either stabilizing or destabilizing, and each weapons system has a large number of characteristics. For example, the two pages of the ACIS that follow the quoted passage deal with the mobility of the MX in much the same way in which the quoted passage deals with its payload and accuracy. It becomes impossible to say with any confidence whether a system is, overall, stabilizing or

destabilizing. Kahan recognized this problem to some extent, saying, "it may not always be possible to avoid seeming to threaten the Soviet Union's deterrent while improving our own deterrent," (1975:274), but the problem seems more pervasive than he envisioned. In fairness to the ACIS writers, it must be pointed out that they were not commissioned to make decisions or even to weigh factors, but only to give legislators the information on stability factors on which to base a decision. It is thus proper that they should present all the possible impacts upon stability of each characteristic of each weapons system, especially since the Congressional committees involved had repeatedly demanded extremely detailed analysis of this kind. (US Congress 1977a; US Congress 1977b) However, it is hard to see how the kind of analysis provided by the ACISs could offer a more rational guide to decision making on weapons than would a policy, for example, of simply assuring the invulnerability of the US retaliatory force and allowing the Soviet leadership to provide for the invulnerability of its own force.

The Vulnerability/Invulnerability Grid

Implicit in the summary of codified stability doctrine given above, which is largely based on Kahan's presentation, are two factors which should perhaps be made explicit. One is the symmetry of stability doctrine. It is assumed that both nuclear superpowers should behave in the same way, as

to offensive and defensive dispositions. It is also assumed that the benefits of seeking stability are reciprocal. If the United States does what is best for itself, this will also be best for the Soviet Union, and if it does what is best for the Soviet Union, this will also be best for the United States. For example, the United States works for stability both by insuring the survivability of its own retaliatory force and by attempting to insure the survivability of the Soviet retaliatory force.

The second implicit factor is the necessity that populations be vulnerable -- that is, unprotected against nuclear attack. This is what is implied in Kahan's statement that factors that "can directly negate an opponent's deterrent capability", such as ABM systems and bomber defense networks deployed to protect populations, are destabilizing and should be avoided. (1975:273) Stability, as codified, can thus be concisely expressed as a situation in which both adversaries have invulnerable retaliatory forces and vulnerable populations. The basic logic of the theory may be illustrated by the vulnerability/invulnerability matrix below (Figure 1):

United States Soviet Union	Society vulnerable Retaliatory force invulnerable	Society vulnerable Retaliatory force vulnerable
	No advantage to either side <u>Stable</u>	Political and military advantage to Soviet Union; Soviet first-strike counterforce attack possible
Society vulnerable Retaliatory force vulnerable	Political and military advantage to US; US first- strike counterforce attack possible	Strong temptation for surprise counterforce attack by both sides <u>Highly Unstable</u>

Figure 1: US-Soviet Nuclear Strategic Stability as Expressed in a Vulnerability/Invulnerability Matrix

 = most desirable condition for both sides

CATEGORIES OF STRATEGIC NUCLEAR STABILITY

During the past five years, several efforts have been made to distinguish among various categories, or dimensions, of strategic nuclear stability.

In a 1976 paper, John P. Coyle listed these types of stability:

- nuclear strategic stability in which one side alone has a secure second-strike capability.
- nuclear strategic stability in which both sides have secure second-strike capabilities -- mutual deterrence.
- crisis stability. A situation in which neither side sees an advantage in going first in a crisis.
- arms race stability. This stability exists, Coyle says,

when "The situation as perceived does not encourage increased nuclear force buildup to take advantage of a weakness or rectify one." (1976:15)

It may be noted that, in his listing, Coyle recognizes stability in which only one side has an invulnerable retaliatory force, and that this recognition differs from the symmetrical requirements of codified stability.

C. Johnston Conover, in a 1977 paper reviewing a great mass of literature on deterrence, noted the failure of analysts to distinguish between various categories of stability. His categories are these:

- arms race stability
- crisis stability
- escalation stability (intrawar stability)

Conover pointed out that arms race stability cannot be treated as identical with crisis stability, because there is no clear evidence that the Soviets are "really more likely to launch an attack because they have been arms racing." (Conover 1977: 39) Conover also pointed out that there are tradeoffs between these different kinds of stability. Flexible targeting options may lower crisis stability by making nuclear war less unthinkable, but they lessen the likelihood of all-out nuclear war, if war should begin. (p. 40) Likewise, the land-mobile MX missile may be bad for arms race stability because of its verification problems, but as a weapon with high survivability and relatively low provocativeness, it is very good for crisis stability.

Colin Gray, who has written far more than anyone else on the concept of stability, began his stability work in 1979 with a listing of the many ways in which he found the term used. Following is this 1979 list, abbreviated, and with its category labels slightly modified:

- international political stability (precrisis stability)
- crisis stability
- arms race stability
- strategic political stability (no pressures on either side to increase strategic programs greatly)
- weapons stability (stability or instability believed to inhere in certain weapons)
- strategic stability (first-strike bonus negative or very low)

In his 1980 critique of stability, Gray chose different categories in several cases. All his 1980 categories relate to strategic nuclear stability, not international political stability:

- arms race stability
- deterrence stability
- crisis stability
- weapons stability
- command stability
- stability in perception

Of these categories, international political stability is what has been termed stability of the international system in

the present paper, and discussed in an earlier section. The phrase weapons stability reflects the fact that certain weapons and weapons characteristics are believed to be stabilizing or destabilizing, and this belief is part of stability doctrine as codified. However, "weapons stability" does not really seem to be a separate category of stability. The same can be said for command stability (a concept presented in Steinbrunner 1978). Good command, control, and communication are needed for stability, but is this a separate category of stability? Stability in perception refers to the fact that world perceptions of relative power are believed to affect stability. Strategic political stability seems to be an influence upon, or subcategory of, arms race stability.

Finally, strategic stability in Gray's 1979 list and deterrence stability in his 1980 list seem to refer to the same concept, and this concept seems to be basic strategic nuclear stability, as described and analyzed above -- stability as codified in the period 1970-1975, stability which may be most succinctly described as a situation in which neither side can gain from striking first or as a situation in which both sides have invulnerable retaliatory forces and vulnerable populations. Crisis stability fits this same definition, except that it applies specifically to times of heightened tension and presumed danger of war. Thus deterrence stability may be a useful term to denote nuclear strategic stability in noncrisis situations, or a low probability of surprise attack.

It may also be noted that not only Gray's two lists, but Coyle's and Conover's, all include crisis stability and arms race stability as separate categories. And it may be added that there is considerable discussion in the stability literature in general on these two stability categories.

Drawing then, on the work of the various analysts who have considered the question of distinct categories of strategic nuclear stability, the following may be listed as separate, nonoverlapping categories which are in some sense subsets of strategic nuclear stability and not simply requirements for stability or different ways of looking at it:

- deterrence stability (low probability of surprise attack)
- crisis stability
- arms race stability
- escalation stability

Deterrence stability is here defined to be strategic nuclear stability when this is separated from the other three categories of stability that are also subsumed under that heading, and specifically from crisis stability. Deterrence stability exists when neither side can gain by a first strike.

Escalation stability may be defined as a low probability of increased levels of violence and destruction, once a nuclear war exists. This would appear to be a useful concept. The concept, although not the term, was dealt with in the escalation and war termination literature of the 1960s. However,

since there is little in the stability literature on escalation stability, it will not be further dealt with in the present paper.

Crisis stability and arms race stability have been fairly extensively treated in the literature, and will be discussed separately below.

Crisis Stability.

If strategic nuclear stability may be defined as a low probability of strategic nuclear war, crisis stability may be defined as a high probability of avoiding a nuclear strategic war that appears in danger of breaking out despite the fact that neither side actively wishes it. To put it another way, crisis stability is the low probability that one side will launch a first-strike attack under the special circumstances of heightened tension and hostility between the two sides. Among analysts and officials who write about crisis stability, it seems generally agreed that more is required to achieve it than to achieve ordinary strategic nuclear stability (or deterrence stability) -- more invulnerability, more management skill, more effective intelligence and C³, and perhaps additional missiles for a side inferior in numbers.

Although the term crisis stability is not found before the 1970s, Schelling discussed the concept in 1961 with perception and subtlety. His was not a simple "more" approach. Schelling suggested that there is a dynamic dimension to stability that appears if one or both sides move toward war. Writing in the context of 1961 weaponry, he said that if there is a move toward war, and one side as a result becomes more vulnerable, or at a

disadvantage--if, for instance, its bombers will lose effectiveness if they are dispatched toward targets and kept airborne, or recalled-- then this makes the situation less stable in time of crisis. It tempts the vulnerable side to attack rather than lose effectiveness or the other side to attack to take advantage of the vulnerability. (Schelling 1961:236) Thus, presumably a situation in which neither side would become appreciably more vulnerable when steps toward war were taken would be a situation of crisis stability.

Crisis stability became an officially distinct concept, and a US policy goal, when President Nixon listed it as one of his four criteria for strategic nuclear "sufficiency" in 1971. Nixon, his National Security Advisor, Henry Kissinger, and his Secretary of Defense, Melvin Laird, suggested that although an invulnerable US retaliatory force might assure stability as far as a deliberate Soviet attack was concerned, since the gain to the Soviet Union could not be worth the cost in destruction of Soviet society, still, such a force might not be adequate to preserve stability in a crisis, when the Soviet Union might believe that the United States was likely to attack, and might therefore be willing to take greater risks. Under such circumstances, they argued, the Soviet Union, if it had the capability to destroy most US land-based ICBMs, might do so, even knowing that the United States in response could do great damage to Soviet society with submarine-launched missiles. In a crisis, the Soviets could reason that by destroying the US missiles they would gain the upper hand in a war that was likely to break out in some way, could limit damage to their own society, and might well avoid any US attack at all, since they

could hold back enough missiles to threaten an attack on US cities.*

What this official doctrine of crisis stability meant in practice, then, was the need to preserve a "triad" of strategic nuclear forces -- land-based ICBMs, bombers, and submarine-launched missiles -- rather than counting on the SLBMs alone. This meant, in turn, that when ICBMs were threatened by the size, accuracy, and numbers of Soviet missiles, they had to be protected by further hardening, some kind of mobile-basing deployment, or ABMs.

John Coyle, in his 1976 paper, implicitly reinforced the idea that crisis stability is like ordinary strategic nuclear stability, but with higher requirements for invulnerability of the retaliatory force. The point is that even in a crisis neither side must see enough advantage in going first

to seize the opportunity to make a preemptive strike nor to assume an accident-prone state of readiness.

(Coyle 1976:15) Coyle stressed the point that in a crisis the weaker side is just as likely to initiate war as the stronger side, since it may feel the urgency of tipping the balance by preemption. (Coyle 1976:5)

Sometimes, however, crisis stability is used simply as

* Richard M. Nixon, U.S. Foreign Policy for the 1970's: Building for Peace, a report to the Congress, February 25, 1971, pp. 172-73, and William Beecher, New York Times, October 19, 1970, as cited in Kahan 1975:156.

a synonym for ordinary strategic nuclear stability. This seems to be what Paul Nitze was doing when he defined crisis stability as "a situation where neither side could gain from a first strike, and of 'mutual assured destruction,' where each side would have a fully adequate second-strike capability to deter the other." (Nitze 1976a:214) In arms control impact statements, crisis stability and strategic stability are sometimes used interchangeably. (US Congress 1979:18) It seems safe to say that this practice should be avoided, if crisis stability is to mean anything.*

Ever since crisis stability was first dealt with officially in 1971, the question of a possible "launch-on-warning" firing doctrine for ICBMs has been mentioned in connection with it. It has been widely agreed that the acceptance of such a doctrine, as a solution to ICBM vulnerability to Soviet attack, would be dangerous, if not disastrous, to crisis stability. The Nixon administration rejected it in 1971. (Kahan 1975:157) Fred Iklé excoriated the launch-on-warning idea in 1973, and again as recently as June 1980. (Iklé 1973; Iklé 1980) And a Defense Department official said in 1979

While we will continue to maintain a technical capability to launch our ICBM force on warning of an attack, we cannot rely on such an option, since it lacks the stability required in a crisis and depends on warning systems which may themselves be vulnerable. (Zeiberg 1979:28; emphasis added)

Not everyone is agreed that crisis stability is an entirely good thing. An Institute for Foreign Policy Analysis report raises the question as to whether stability is what is wanted in a crisis. It suggests that in future crises the Soviet Union would have a "political edge" because it would have less to lose in a nuclear exchange than the United States would -- as a result of its current civil defense programs and "rapidly deployable BMD technology."

*In another article, Nitze was much more specific on requirements for crisis stability. See bibliographic entry on Nitze 1976b.

Thus, the IFPA report implies, there could be crisis stability, but at the price of whatever concessions the Soviet Union might exact. (Institute for Foreign Policy Analysis 1978)

Colin Gray, in his recent critique of the stability concept, has specific criticisms of crisis stability. Pointing out what he sees as the US defense and arms control communities' proclivity for a managerial, rather than a strategic approach, he says that crisis stability and crisis management go hand in hand. Neither seeks to turn a situation to US advantage, he says, but rather both seek primarily to avoid a violent confrontation. Neither crisis management nor crisis stability, Gray suggests, would be of any help in, for example, dissuading the Soviet Union from invading Yugoslavia. (Gray 1980)

Gray also questions whether crisis stability has ever been tested, even in its limited function of avoiding accidental war. He suggests that there never has been a time since 1945 when either the Soviet Union or the United States had to consider seriously a decision on whether or not to go to war with the other. (Gray 1980:58)

Arms Race Stability

"Arms racing", especially in naval building, was widely supposed to have been a major cause of World War I, and there has been considerable scholarly attention devoted to it since. There are several ways of seeking to determine whether an arms race is in fact going on, all of them based on expenditures for arms. Deutsch and Singer quote Lewis Richardson's definition of an "arms race proper" as "one

in which the rival states stimulate one another to divert increasing proportions of their national income to military preparations." (1964:391) What each rival power is actually aiming at, of course, is not outdoing the other in spending money, but rather acquiring a comfortable balance of weapons superiority. However, since arms expenditures are easier to measure than effectiveness of armed forces, arms races tend to be seen in terms of expenditure.

If arms racing is understood in terms of expenditure for weapons, it is hard to see what essential connection it has with strategic nuclear stability. As indicated above, Conover has suggested that the connection is not demonstrated. (1977:39) Many analysts, however, have assumed that increasing arms expenditures is per se destabilizing. For example, Henry Kissinger wrote in The Necessity for Choice that seeking invulnerability through sheer numbers could cause the other side to launch a preemptive blow, "or, more likely, the result would be a spiraling arms race. In either case, the result is to increase instability." (Kissinger 1960:216)

Under the canon of stability doctrine, there would appear to be one, and only one, logical connection between arms racing and strategic nuclear stability. It is that arms racing, at least theoretically, might be expected to produce from time to time a first-strike, or approaching-first-strike, or what appeared to be a first-strike, capability for one side or the other.

Thus arms expenditures, whether in dollars or rubles, in absolute figures or in proportion of the gross national product, should not be considered an index of arms racing, or of danger to stability, in a nuclear strategic context. No matter how much money both sides are spending, the only time arms acquisition could threaten stability -- even under the codified rules of stability -- would be if it provided, or appeared to provide, one side with a first-strike capability.

ALTERNATIVE VIEWS ON STRATEGIC NUCLEAR STABILITY

The concept of stability has become so firmly identified with stability as codified in the early 1970s -- no first strike capability, invulnerable retaliatory forces and vulnerable populations, assuring one's own ability to retaliate and not interfering with the opponent's ability to retaliate -- that it is easy to forget that there are other possible approaches to stability.

Soviet Attitudes and Behavior on Stability

Codified stability doctrine calls for reciprocal actions by two nuclear opponents. If either side acquires a first-strike force (which means that the other side's retaliatory force would not be survivable), stability is undermined. Theoretically, it is better for maintaining stability for only one side to have an invulnerable retaliatory force than for neither side to have one, but if the side that is vulnerable is one's own, this situation can hardly be acceptable. As even the authors of the Fiscal Year 1980 ACIS on the MX missile, writing from an orthodox stability point of view, say, "Taking political and practical consider-

ations into account, a situation in which US. ICBMs were vulnerable while Soviet ICBMs were not, from the U.S. point of view would hardly be preferable to one in which the ICBMs of both sides were vulnerable." (US Congress 1979:19-20)

The question then arises as to what Soviet attitudes and behavior on stability have been. Kahan considered the problem in his influential 1975 book:

If the USSR's strategic outlook were dramatically different from ours or if Soviet policies could not be understood by American leaders, the United States would clearly find it difficult to predict Moscow's reactions or to influence Soviet strategic policies through its own stabilizing unilateral decisions. (Kahan 1975:270)

Kahan concluded that, although there was some evidence that the Soviets did view strategic matters very differently from the United States, "a persuasive case can be made that U.S. and Soviet policies often have much in common," and that "the USSR's strategic doctrine is largely understandable and somewhat comparable to ours." He therefore felt it was "possible to establish a relatively effective U.S. policy of mutual stability," and went on to outline the principles of "first-strike-bad" stability.

Since 1975, however, a considerable and persuasive literature has appeared that makes it hard to accept Kahan's judgment on Soviet attitudes. Some of the most persuasive has been the US Department of Defense Annual Reports and Posture Statements of recent years, with their graphs showing rapidly approaching Soviet superiority in many

strategic weapons categories.* While open to various interpretations, available data seem to show that the Soviet Union is continuing the buildup in strategic nuclear weaponry (as well as in general-purpose forces and force-projection capabilities) that has been going on since the early 1960s, and is not stopping with achievement of an invulnerable second-strike force capable of doing unacceptable damage to the US population. There is now a general consensus that the Soviet Union will be able, by the mid-1980s, to destroy a large part of the land-based US ICBM force.

Richard Pipes, in 1977, first introduced to a general informed audience outside the defense community the idea, and some of the evidence, that the Soviet Union has a policy of achieving the capability to fight and win a nuclear war, has a strategy for such a war, and has increasing capabilities for it. Pipes suggested: "There is something innately destabilizing in the very fact that we consider nuclear war unfeasible and suicidal for both, and our chief adversary views it as feasible and winnable for himself." (Pipes 1977:34)

Jack L. Snyder, also in 1977, presented a concept that is especially helpful in evaluating Soviet attitudes, the concept of a Soviet military culture -- using culture in the anthropological sense -- that molds the attitudes of Soviet

* See especially the Posture Statement for Fiscal Year 1979, pp. 7, 27, and Posture Statement for Fiscal Year 1981, pp. 9-12.

leaders. Snyder says that when Soviet writers refer to "destabilizing" innovations they are talking about a challenge to strategic parity rather than a threat to the invulnerability of retaliatory forces. In other words, they equate stability with parity or rough equivalence, rather than accepting the orthodox US "first strike--bad; second strike--good" doctrine on stability. These Soviet writers, Snyder says, see the Trident submarine as destabilizing, whereas for US analysts it is the ideal stabilizing weapons system, since it is highly invulnerable and not accurate enough to be used for a first strike. (J. Snyder 1977:18) Likewise, Richard Burt has suggested that the Soviets probably see the vulnerability of US ICBMs as stabilizing, since it means the United States can no longer use them as an implicit threat, as in the Cuba missiles crisis. (Burt 1979:36-38)

Fritz Ermarth in a 1978 paper, outlined contrasting US and Soviet views on strategic thought, including stability. He stated that because of their Marxist-Leninist view of history and the place of the Soviet Union in it, the Soviet leadership has to believe that nuclear war can be managed, survived, and won. History, for the Soviets, cannot be derailed by nuclear technology. Stability exists for them, in the sense of approximate equivalence and a low level of tension. They would even grant that certain systems make for greater stability in that they make it hard for either

side to acquire a major advantage. But they reject the idea that it is possible or desirable to halt competition in strategic nuclear capabilities. (Ermarth 1978:146)

The Soviet Union has not only developed a considerable hard-target kill capability that will threaten the invulnerability of the US retaliatory force within a few years. It has also planned and to a considerable, though disputed, extent carried out a massive civil defense program that would make its population far less vulnerable than that of the United States. According to Leon Gouré, who has specialized in this field, most estimates agree that, with some warning, Soviet population fatalities could be held to about 20 million, in comparison to an estimated 120 to 140 million US casualties from a Soviet attack. (Gouré 1979:10-F) This Soviet civil defense program has been under way since the 1950s and has not been decreased or slowed in response to US stability doctrine calling for no interference with the opponent's ability to retaliate.

Thus, even under the rules of codified stability doctrine, there are serious problems in continuing to adhere to that doctrine. The vulnerability/invulnerability matrix presented as Figure 1 does not provide enough possibilities to reflect the real world. Figure 2 shows the matrix with a new row and column to allow for highly possible future circumstances.

Of course, all invulnerability is only relative, and the expectation of 20 million fatalities is a bizarre description

United States Soviet Union	Society vulnerable Retaliatory force invulnerable	Society vulnerable Retaliatory force vulnerable	Society invulnerable Retaliatory force invulnerable
Society vulnerable Retaliatory force invulnerable	no advantage to either side <u>stable</u>	political & military advantage to Soviet Union; Soviet 1st-strike counterforce attack possible	strong US political & military advantage
Society vulnerable Retaliatory force vulnerable	political & military advantage to US; US 1st-strike counterforce attack possible	strong temptation for surprise counterforce attack by both sides highly unstable	US political & military hegemony*
Society invulnerable Retaliatory force invulnerable	strong Soviet political & military advantage; US attack virtually impossible	Soviet political & military hegemony*	<u>stable</u> high cost

Figure 2: U.S.-Soviet Strategic Stability as Expressed in a Vulnerability/Invulnerability Matrix; Expanded to Show Possibility of Society Invulnerability

 = most desirable condition for both sides according to orthodox stability doctrine

 = increased vulnerability/invulnerability combinations produced by considering possibility of society invulnerability

* Hegemony is used in the sense in which it was defined by Richard Pipes (Pipes 1980:3-F): Hegemony signifies the ability of the hegemonal power to assert its interests within the area over which it claims hegemony by the threat of coercion, or, if that fails, to produce the desired effect by actual application.

of an invulnerable society. However, with priority given, as the Soviets do give it, to protecting government officials and persons essential to the functioning of society and restoration of vital services, Soviet invulnerability appears great compared to the almost absolute vulnerability of US society. During the next five years it seems clear that the invulnerability of the US retaliatory force will become uncertain, while US society will remain highly vulnerable, Soviet society will have considerable protection, and the Soviet retaliatory force will remain highly invulnerable -- unless new US weapons with counterforce capabilities are deployed. It is difficult to see how a stability doctrine that requires vulnerable societies and invulnerable retaliatory forces on both sides can survive these five years.

Approaches to Stability outside Orthodox Doctrine

It is logically quite possible to accept the idea that stability, i.e., a low probability of strategic nuclear war and/or a preservation of the relative power positions of the major powers as they are, is a desirable goal, and yet not accept orthodox stability doctrine. Several writers have treated stability in a different way, not attacking, arguing against, or even mentioning, the widely accepted view, but simply taking different approaches to stability.

Betts's Work. Of special interest, because it has been rather fully thought through, is some work Richard Betts presented in connection with a paper on nuclear proliferation in South Asia. (Betts 1979:50) Betts is unusual among recent

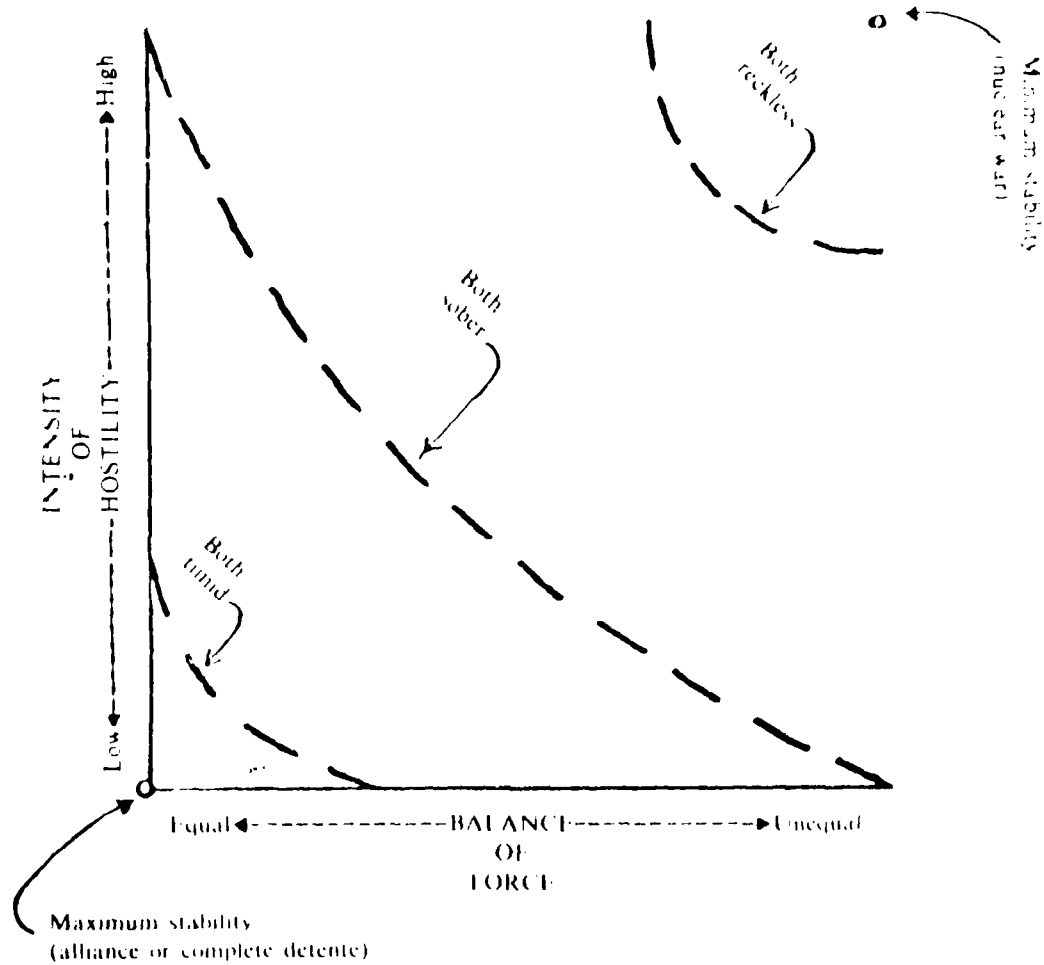
analysts in treating both international political stability and nuclear strategic stability (which he terms military stability.) Betts defines military stability as a low probability of use of nuclear weapons and political stability as a low probability of alteration of the status quo. His parameters for stability are intensity of hostility (low to high), balance of force (equal to very unequal), and impulsiveness of leadership (timid to sober to reckless).

Betts's graphic representations of his analysis are reproduced here as Figure 3. It will be noted, on the top graph, that Betts shows the greatest stability occurring when the two sides are evenly matched, hostility is low, and leadership is timid on both sides. Then, differentiating between military and political stability, and assuming that one side is weaker and the other stronger, he finds that the danger of military instability (nuclear weapon use) is greatest when the leadership of both sides is reckless, while the danger of political instability (alteration in the status quo) is greatest when the stronger side is reckless and the weaker timid, a situation which, on the other hand, produces considerable military stability. (This analysis is shown on the matrices at the bottom of the page.)

Betts's work provides a useful corrective for the narrow view that stability can be defined entirely in terms of absence of first-strike capability.

Nitze's Approach. Paul Nitze has, in effect, presented another alternative position on the requirements for stability

FORCES, HOSTILITIES, LEADERSHIPS, AND STABILITY



MILITARY STABILITY *

		Stronger		
		R	S	T
Weaker	R	9	7	8
	S	5	4	6
	T	3	2	1

- * Probability of use of nuclear weapons
- ** Probability of alteration of status quo

POLITICAL STABILITY **

		Stronger		
		R	S	T
Weaker	R	6	4	3
	S	8	5	2
	T	9	7	1

- 1 - lowest probability
- 9 - highest probability
- R - reckless S - sober T = timid leader

Figure 3: Botz's Representations of Stability

Source: Botz, 1979:50

to that codified in the early 1970s. By implication, he has defined stability as a situation in which neither side can expect to increase its ratio of advantage by attacking the other (1976b). This is a more subtle analysis than judging stability on a standard of "first strike -- bad; second strike -- good." Nitze does not seem to believe that "assured destruction capability" is especially relevant to stability.

In another paper Nitze says specifically that the best way to compare relative capability is to compare the strategic nuclear strength each side would have after a nuclear exchange, that is, after a first strike by one side and a second strike by the other side. He states that this is the method of comparison that most clearly brings out the stability or potential instability of the relationship, and specifically urges it as a measure of crisis stability. (Nitze 1976b) John Coyle also says "For stability, one wants as little difference as possible between the relative throwweight surviving [after a first and second strike] no matter which side goes first." (Coyle 1976:37; Coyle is also speaking of crisis stability.)

It is noteworthy that Nitze, a critic of recent US strategic nuclear policy, does not reject the stability concept, but rather urges a different and, he believes, more sophisticated measure for stability.

Uncertainty. Uncertainty is a factor in stability that has been mentioned from time to time in the past but is not included in the orthodox listings of stabilizing and destabilizing items. Stanley Sienkiewicz has suggested that the greatly

increased uncertainties that affect strategic planning now, in contrast to the late 1950s, when Wohlstetter saw the "balance of terror" as extremely delicate, have greatly increased stability. Today, Sienkiewicz says, any leadership contemplating a first strike would have to have grave uncertainties as to how it would actually work out in practice. (Sienkiewicz 1979:107-08)

Predictability. Edward L. Rowny, former Joint Chiefs of Staff representative to the SALT negotiations and now an opponent of SALT II, has stressed the importance of predictability to stability. He suggests that SALT, by "forcing the Soviet efforts into unconstrained and unverifiable qualitative improvements, will undermine predictability and hence stability." However, Rowny does not make clear what he means by stability. He sees it as depending on essential nuclear equivalence, as well as on predictability, and for him it seems to include some elements of stability of the political system, such as no diminution in US ability to exert influence and initiative in international crises. In any case, Rowny's stability is clearly not the same as that reflected in the ACISs. (Rowny 1979)

Asymmetrical stability. Another view at variance with orthodox stability comes from John Coyle. As noted above (pp. 64-65), Coyle sees stability in the possession by at least one side of a secure second-strike capability. This, however, does not rule out, for Coyle, a stable situation in which one side has both a first and second-strike capability.

This is not mutual deterrence, but it is still stability, in his analysis. Coyle also disagrees with the orthodox stability view on counterforce capability, saying that although it has become "conventional to infer that counterforce is the only objective of a hard target capability, and to associate both with first-strike intentions," this is not necessarily true. (Coyle 1976:17)

Two points may be made about most of these alternative views. One is that, whatever the logic of their analysis or the validity of their insights, they cannot provide the clear, relatively easy-to-use yardstick for weapons system development and Congressional funding that orthodox stability doctrine -- for better or worse -- can provide. Sobriety of leadership, uncertainty, and predictability are all difficult to measure, and sobriety of leadership is strikingly difficult to alter, especially sobriety of the opponent's leadership. Nitze's approach is based on quantifiable factors, but calls for complex calculations and decisions based on expert judgment.

The other point is one already mentioned above, but perhaps worth reiterating: None of these writers is attacking orthodox stability doctrine, or even referring to it -- except, very obliquely, Nitze and Coyle. The fact is that until Colin Gray's work in 1979 and 1980, the existence of a hardened stability doctrine, as codified by analysts like Scoville and Kahan, and as reflected in the ACISs of the late 1970s, does not seem to have been explicitly recognized. Many people used

the term, but each had his own implicit definition which he saw no need to explain or defend. There was, and is, no official definition. The orthodox doctrine, with its lists of stabilizing and destabilizing characteristics, seems to have become the tacitly acknowledged official doctrine of Congress and the Arms Control and Disarmament Agency without being formally defined or defended.

The Problem of Responsibilities to US Allies

There is one crucial dilemma at the heart of stability, and that is the possible necessity for a first strike by the United States in retaliation for attacks on US allies. Colin Gray remarked in a 1977 letter to the New York Times on the MX missile: "The U.S. is almost certain to be the first superpower to need to launch strategic weapons (particularly, if not exclusively, in response to some galloping disaster in Europe)." Gray undoubtedly realized that this seemingly casual statement might seem a frontal attack on the core of accepted stability doctrine -- the doctrine that a first strike is bad and that any weapon or strategy that could enable either superpower to launch a first strike is to be avoided. (Gray did make clear that he was speaking of a "very limited" first strike (emphasis in original, not a massive effort to disarm the Soviet Union.) Kissinger dramatized the same point in a different way in Brussels in 1979 by telling Western European military specialists that the United States

* October 19, 1977.

couldn't possibly carry out any assurances it might give of nuclear strikes against the Soviet Union in retaliation for Soviet attacks on Europe, because this would bring a Soviet attack on the United States.*

For years stability doctrine with its injunction "first strike -- bad; second strike -- good" has been moving along in a parallel track with assurances of a nuclear umbrella for US allies, with no possibility of the two policies ever coinciding. Perhaps it is best to have policy positions a little unclear and illogical, and it may well be that President Eisenhower's rather vague-sounding method of dealing with the question of whether we really would strike the Soviet Union in retaliation for a conventional Soviet attack on West Germany was the best way, under the circumstances, to scare the Soviets away from such an attack.** It may be noted, incidentally, that during the Eisenhower period the question was whether the United States would strike first and invite nuclear devastation of its own country. It had not yet become accepted doctrine that it was a bad thing to possess the capability to strike first.

In any case, the fuzzy approach cannot be taken indefinitely. By now it must be clear to adversaries and allies that the two policies do not mesh. If the United

* New York Times, September 2, 1979, p. 8

** George Quester makes a convincing case for Eisenhower's skill in defense and foreign affairs matters in "Was Eisenhower a Genius?" International Security 4:159-79 (fall 1979).

States continues to pursue a policy of bilateral stable mutual deterrence, one which, by definition, leaves Europe out of consideration, there is only one logical solution. There has to be a separate stable balance for Europe, with invulnerable strategic missiles -- strategic in European terms -- targeted on the Soviet Union.

STRENGTHS AND WEAKNESSES OF STABILITY AS A US GOAL

Before summarizing the strengths and weaknesses of the concepts of stability of the international system and of strategic nuclear stability, something may be said about the strengths and weaknesses of stability, in the broadest sense, the sense that encompasses both these meanings, as a national goal.

First, the United States is by its ideology and circumstances a status quo power, with little to gain and much to lose from change, and stability thus fits its aims. Second, stability is a relatively neutral term, not carrying a heavy burden of principle or emotion, and therefore well suited to identify a goal that will be rationally discussed and rationally pursued. Peace, justice, honor, superiority, supremacy, and victory are words that arouse emotions that can make rational choices difficult, especially in a democracy.

Security is another relatively neutral term which has much to recommend it as an expression of US defense and foreign policy, and one which might be used more if stability should be retired. Security is focused somewhat more on the requirements of the United States than stability, which implies a concern

about the whole world, and about the relationship with the adversary, that security does not. Security may be a healthier and less ambitious term -- and goal -- for this reason. On the other hand, security, which implies certainty, may be even less attainable in the present world than it has been in the past. Stability may be easier to achieve and maintain. These are philosophical questions to which no answers can be given here, but policy makers should at least be aware of these kinds of implications of the terms that are chosen for official pronouncements, and of the concepts to which they refer.

Stability of the International System

The strengths and weaknesses of the stability concept as applied to the international system depend largely on how it is defined. If stability is defined to include not only a low probability of war but the preservation of the major actors on the international scene and the prevention of major changes in their relative power, it is, almost by definition, a highly desirable goal for a strong status quo power like the United States. It must always be remembered, however, that the traditional balance-of-power approach to stability, and the theoretical political-science approach also, require that stability be achieved by self-help, that is, by each power acting to maintain its own strength.

The great danger in making stability of the international system a national goal is in forgetting that it is only a means

to the end of preserving values that now exist and are of crucial value to the United States. If stability is understood to mean only no war and a low probability of war, and if this is made a prime national goal, then stability hampers action. It robs the nation of leverage in international affairs, making the use of power, either by violence, by threat, or by knowledge of the possibility that power will be used, impossible.

Strategic Nuclear Stability

Much of what has just been said also applies to strategic nuclear stability. However, as codified in the early 1970s, strategic nuclear stability represents a closed system that allows for no initiative. For that reason, not all defense analysts have paid even lip service to it. One of the ablest, Andre Beaufre, has written that strategic nuclear stability is a positive danger. Beaufre said, in 1966, that the fear of a possible first strike was fundamental to deterrence, and that the disappearance of that fear would be a great loss. Precisely because US strategy is basically defensive, he saw the need for offensive potential, including counterforce capability, to keep the Soviet Union within limits. (Beaufre:1966) Beaufre, of course, is a European, and has a special concern for whatever protection the US strategic nuclear force may offer Europe. However, what he is asking is only what the United States has promised its allies, and what it can hardly expect to provide with a closed, completely stable strategic nuclear system -- even if the Soviets would make such a system possible.

The question of Soviet cooperation leads to a second weakness of the strategic nuclear stability concept. Although some pro-stability analysts recognize that carrying out a stability policy would be difficult without a US-USSR consensus (Kahan 1975:270), there is a tendency among others to believe that stability will work automatically if the United States follows the rules. The ACISs devote very little attention to what the Soviet Union has done about weapons development and deployment, and a good deal of attention to what "a conservative Soviet planner" might fear from US weapon innovations. (For example, US Congress 1979:17.) There is a widespread failure to realize that if the Soviets develop or deploy new weapons, or add significant protection for their populations, as they are doing, then stability, even as defined in orthodox fashion, will no longer exist. The United States has to be ready with responses that can restore stability very quickly. (Rona 1977:5) Changes in stability as a result of altered deployments are shown in schematic form in Figure 2, p. 80, above.

With all its weaknesses, however, the stability concept does provide some kind of guidelines for a coherent strategic nuclear policy. It offers a standard by which weapons can be judged, and choices made, even though, as has been shown above, the same weapon may be found to be stabilizing in several ways and destabilizing in several others. The stability-based approach may have much to recommend it over a system without

guidelines, a system that could result in a free-for-all fight among individuals and interest groups -- arms control, military, industrial, and political -- over each new weapons system.

The question is, upon what would another coherent set of guidelines be based? Some would say that effectiveness in fighting a war should be the guide, and that such a policy would produce not only the nation's best hope if war should be forced upon it, but also the most effective deterrent to war. (Gray 1979c)

It might also be argued strongly that stability itself is an adequate guide, at least for avoiding war, but that it must have its own prerequisites remembered and fulfilled if it is to work. An invulnerable retaliatory force, capable of penetrating enemy defenses and doing damage that is unacceptable to the enemy (which may or may not mean the destruction of cities), is absolutely necessary to orthodox stability doctrine. The assuredness of this capability is more important than the extent of destruction. (Kahan 1975:205)

If the Soviets do not accept the rules of the stability game -- if, for example, they cannot be convinced that for the United States to have invulnerable ICBMs is in Soviet interests -- then the United States, under the rules of the same game, has to preserve or re-establish stability by self-help. And it may have to do it quickly, since, by definition, periods of instability are periods when the danger of war is great.

CONCLUSIONS

Drawing conclusions from the mass of material that deals with the stability concept is not easy. Perhaps the best approach is to suggest the questions that must be asked in order to reach significant conclusions. Following are listed such questions, together with the answers this paper suggests should be given to them.

1. Does stability signify only a low probability of war or can it be defined, as it has been in the past, to comprise both a low probability of war and the maintenance of current power relationships? (The latter.)
2. Specifically, can strategic nuclear stability be defined to mean not only a low probability of strategic nuclear war but also the preservation of current power relationships? (Yes.)
3. If maintenance of current power relationships is an important aspect of stability, can the United States work to maintain them by maximizing US strength, leaving it to the Soviet Union to see that it is not unduly threatened? (Probably.)
4. Orthodox stability doctrine, as codified in the early 1970s, categorizes weapons characteristics as stabilizing or destabilizing on the basis of whether they contribute to an invulnerable retaliatory force for both sides (stabilizing) or contribute to a first-strike force for either side (destabilizing). Under this doctrine, counterforce weapons

characteristics -- that is, characteristics that would make it possible for a weapon to destroy a relatively small, well-protected target quickly -- are considered first-strike characteristics and therefore destabilizing.

If strategic nuclear stability is understood to mean simply a low probability of war, can it be achieved by means other than this orthodox stability doctrine?

(Probably.)

5. If obeying orthodox doctrine on strategic nuclear stability is the most desirable way of achieving a low probability of war, can stability be achieved by unilateral US decisions in accord with stability doctrine, or must US weapons decisions be constantly attuned to Soviet behavior, and adjustments made to preserve or restore stability? (The latter.) Is educating the Soviets in the advantages of US orthodox stability doctrine a luxury that could only be afforded during the period of US superiority? (Possibly.)
6. If a first-strike force is provocative and thus endangers stability, does it necessarily follow that a counterforce capability is provocative and endangers stability? (No.) Does a counterforce capability have to be associated with a first-strike force? (No.) Need such a force be provocative as long as it is well protected? (No.) If confronted by such a force, would an opponent have sufficient incentive to strike preemptively, exchanging the possibility of war for the certainty of war? (No.)

These conclusions may be summarized as follows:

The destructiveness of nuclear weapons is so great, and has so strongly impressed itself on the consciousness of leadership groups and publics, at least in the United States and other industrialized democracies, that the traditional, pre-1945 concept of international stability has been altered. Stability has come to mean, not the preservation of the principal actors on the international scene and the prevention of hegemony, together with a low probability of war, but rather simply a low probability of war alone. This narrowed view of stability has become a principal goal of the United States in international affairs, and appears to have become the only goal of the United States in the management of strategic nuclear weapons.

Furthermore, much of the US arms control community, defense community, and Congress appears to have adopted a specific doctrine of strategic nuclear stability during the past 15 years. This doctrine is based on the belief that any policy, weapons system, or weapons characteristic that contributes to possession of a first-strike capability by either the United States or the Soviet Union is destabilizing, and any policy, weapons system, or weapons characteristic that contributes to possession of a secure retaliatory force with the capability of destroying a sizable portion of the other side's population and industry is stabilizing. Since stability is the goal, and since, according to this stability

doctrine, it is stabilizing for each side to have no first-strike force and each side to have a secure retaliatory force, following this policy has meant that the United States has consciously unilaterally renounced increased accuracy for its missiles (on at least one occasion) and unilaterally renounced civil defense protection for its population,* in order to preserve the survival and effectiveness of the Soviet "retaliatory force."

There is, however, only very slight evidence that the Soviet leadership accepts this stability doctrine, and there is much evidence that it does not. Thus, even if this specific doctrine is sound, it appears that the United States must focus in the proximate future on maintaining stability by ensuring the invulnerability and effectiveness of its own retaliatory force.

The possibility should also be considered that the current stability doctrine does not in fact best produce stability, whether that concept is understood to include the preservation of existing power relationships or is understood to denote only a low probability of war. Specifically, the balance of forces that would exist following hypothetical first and

* With, in all fairness, considerable help from a population resistant to the expense and unpleasantness of civil defense preparations.

second strikes may be a sounder guide to stability.

Also, although counterforce weapons and strategies have long been associated with first-strike policies (for example, Kissinger 1960:27), simply because it was assumed, in the early, pre-MIRV days of a relatively simple nuclear technology, that a second-strike force would have only empty silos to hit and would thus have to be used against people, there is no logical reason for not hitting military targets, including missiles, on a second strike, if these are available. In any case targeting that takes into account what is of most value to the opponent is more important in planning second strikes than either traditional counterforce (missiles) or traditional countervalue (cities and industries) targets. Presidential Directive 59, revealed in the summer of 1980, makes it clear that the United States now plans to provide this kind of flexible targeting.

Finally, there is the possibility that a first-strike capability and contingency plans should not be ruled out even if stability is acknowledged to be of crucial importance. The United States's responsibilities for its closest allies, especially the NATO countries, have led to nuclear commitments that do not fit into a closed-system strategic nuclear stability relationship with the Soviet Union. The stability of the international system, including the prevention of Soviet hegemony, may well require opening up a theoretically

air-tight bilateral superpower stability, which, in any case, has been shown to have serious leaks in the form of asymmetries favoring the Soviet Union.

In brief, stability has much to recommend it as a US goal -- notably its emotional neutrality, its focus on the attainable, its freedom from connotations of self-aggrandizement, and its suitability for a status quo power that wishes above all to protect existing values. However, if it is understood to mean nothing but the avoidance of war, it can hamstring all use of power and produce a rigidity that is contrary to the shifting resiliency, the continuous regaining of equilibrium, that is at the heart of the basic concept of stability. Further, if stability is limited to the rigid doctrine codified for strategic nuclear stability in the early 1970s, the restrictive rules of this doctrine could immobilize the process of developing, acquiring, and planning to use weapons in the defense of the United States.

APPENDIX A: TERMINOLOGY RECOMMENDATIONS

On the basis of this report, the following recommendations may be made as to terminology:

1. It should be recognized that stability of the international system and strategic nuclear stability (stability of the US-USSR strategic nuclear balance) are two discrete concepts.

2. Stability of the international system may also be called international political stability. The former term is more precise from a political-science point of view; the latter is probably more readily understood by nonacademic audiences.

3. It would be desirable to use stability -- both of the international system and the US-USSR strategic nuclear balance -- to include the preservation of current power relationships, within limits, as well as the prevention of war. This usage may not be practical, because of the general use of stability to mean only a low probability of war. In that case, it should be recognized that stability is being used to mean only a low probability of war, and that other values, such as the prevention of Soviet hegemony, must be considered in addition to "stability."

4. Strategic nuclear stability is often referred to as deterrence stability or strategic stability. Strategic nuclear stability, although somewhat cumbersome, is the more

(Appendix A - Cont'd)

precise term, and is to be preferred, but it is probably not practical to attempt to standardize usage in this case.

5. Strategic nuclear stability, as codified in the early 1970s, is achieved when each of two opposing sides has an invulnerable retaliatory (second-strike) force, capable of the assured destruction of an unacceptable portion of the other side's population and industry, and when both sides lack the capability of delivering a first strike against the other side's missiles. According to this doctrine, all weapons characteristics can be described as stabilizing, destabilizing, or both, on the basis of the extent to which they contribute to second- or first-strike capabilities, respectively.

It should be recognized that this is what is usually meant when stability, strategic nuclear stability, deterrence stability, or strategic stability is used. It should also be recognized that strategic nuclear stability as codified in this way is only one theory of how nuclear strategic stability can best be achieved.

6. Crisis stability should be used only to denote a low probability of war in a time of heightened tension, and not used as a synonym for strategic nuclear stability, of which it is a subset.

Appendix A - cont'd)

7. Arms race stability should be recognized as a separate category of stability, a condition of little change or expectation of change in arms expenditures by two opponents. It is not identical with strategic nuclear stability and does not necessarily directly affect strategic nuclear stability.

BIBLIOGRAPHY

BEAUFRE, Andre

1966 Deterrence and Strategy, trans. R.H. Barry
Frederick A. Praeger: New York

[A lucid, thoughtful work on deterrence that deals briefly with stability. Beaufre sees absolute nuclear stability as a danger, believing that the desired goal is rather stability of the international system through nuclear deterrence. He wants to prevent war, not just nuclear war, and believes that a US first-strike capability is important in restraining Soviet expansion.]

BELOFF, Max

1967 The Balance of Power
McGill University Press: Montreal

[The theme of this small book of lectures by a distinguished British scholar is that the balance-of-power phenomenon is a reality and can be used for constructive ends. The opposite of balance of power is not utopia but imbalance of power. The successive balances struck in 19th and early 20th Century Europe helped restrain conflict. There has been a balance of power in Europe since 1945, maintained, basically, by the United States.]

BETTS, Richard K.

1979 "Regional Nuclearization and Political Tensions:
South Asia"
John Kerry King, ed., International Political Effects
of the Spread of Nuclear Weapons, papers for a
colloquium sponsored by the Central Intelligence
Agency and the Office of the Assistant Secretary
of Defense for International Security Affairs.
GPO: Washington (Stock Number 041-015-00105-1),
pp. 43-59

[Betts suggests that nuclearization may not have a destabilizing effect in South Asia, that probably there will be a multipolar deterrence and consequent stability, or India will exercise hegemony, with consequent stability. The paper includes graphs and matrices on military and political stability (50-51). Betts's treatment of stability is of especial interest, because, unlike most writers, he distinguishes between military stability (low

probability of the use of nuclear weapons) and political stability (low probability of alteration of the status quo). His work is also unusual in taking into consideration leadership characteristics (a continuum from reckless to timid) and intensity of hostility, as well as equality of the balance of forces, as parameters of stability. Betts's graphic materials demonstrate that it is possible to visualize stability in terms other than vulnerable populations and invulnerable retaliatory forces. Page 51 of his paper is reproduced as Figure 3 of the present report.]

BRODIE, Bernard

1959

Strategy in the Missile Age

Princeton University Press: Princeton, N.J.

[This important, relatively early, work on nuclear strategy includes a brief but useful section on stability, pp. 302-04. Brodie stresses that deterrence is achieved not by having forces symmetrical to those of the adversary, but rather through stability, and says that "stability is achieved when each nation believes that the strategic advantage of striking first is overshadowed by the tremendous cost of doing so." (303)]

BURT, Richard

1979

"The Future of Arms Control: A Glass Half Empty"

Foreign Policy, No. 36 (fall 1979), pp. 33-48

[Includes a discussion of stability (36-38). Burt points out the lack of consensus on stability between the United States and the Soviet Union.]

COLLINS, John M.

1973

Grand Strategy: Principles and Practices

Naval Institute Press: Annapolis, Md.

[A compendium of thoughts on strategy, many of them stimulating. Collins defines stability as a state of strategic equilibrium or stalemate that encourages restraint and prudence by opponents, and states that it is a prime goal of deterrence. (278) Elsewhere he states that stability is the goal of deterrence and says that it does not signify the ability of belligerents to inflict equal damage on one another but rather reflects their ability to visit unacceptable punishment on each other if deterrence should fail. Stability, he says, thus implies that neither party enjoys a rational first-strike option. (82) This is virtually all that is said specifically on stability in the book.]

CONOVER, C. Johnston

1977

US Strategic Nuclear Weapons and Deterrence

Rand Paper P-5967, August 1977

Rand Corporation: Santa Monica, Calif.

[This is a survey of the literature on the subject indicated by the title, with pp. 36-40 devoted to stability. Although few of the many works Conover cites in that section have much to offer on stability, Conover's own observations are valuable. He points out the failure of analysts to distinguish between arms race stability, crisis stability, and escalation stability, and suggests that there are trade-offs among these, that what produces one does not necessarily produce another. A striking example is the MX missile, which, with its verification problems, is not good for arms race stability but which, as a highly survivable force, nonprovocative in relation to its survivability, should be extremely valuable for crisis stability.]

COYLE, John P.

1976

"SSBNs and the Strategic Balance"

In Measuring the Strategic Balance, Anthony H.

Cordesman, ed., pp. 3-105

Prepared by Office of Civilian Assistant to the
Deputy Secretary of Defense

Prepared for the International Institute for Strategic
Studies, June 24, 1976

[Valuable for Appendix A, which includes an excellent brief history of nuclear strategic thinking, definitions of selected concepts, and some discussion of stability. Coyle lists the following kinds of stability:

- nuclear strategic stability in which one side alone has a secure second-strike capability
- nuclear strategic stability in which both sides have a secure second-strike capability -- mutual deterrence
- crisis stability. Neither side sees an advantage in striking first in a crisis
- arms race stability. "The situation as perceived does not encourage increased nuclear force buildup to take advantage of a weakness or rectify one." (15)

It may be noted, from his first kind of stability, that Coyle does not limit nuclear strategic stability to a mutual-deterrence situation, as many analysts do.

Coyle mentions the "inherent stability" analysts found in the late 1950s, in the assumed fact that if two sides had equal numbers of missiles, reliability failures would mean that any preemptive attack "would disarm the attacker faster than the defender." MIRVs have erased this phenomenon. (16)]

DEUTSCH, Karl W., and J. David Singer
1964 "Multipolar Power Systems and International Stability"
World Politics 16:390-406

[The authors define stability of the international system as a probabilistic concept: "We shall define stability as the probability that the system retains all its essential characteristics; that no single nation becomes dominant; that most of its members continue to survive; and that large-scale war does not occur." (390) They say that a probability of 90%, 95%, or 99% seems to be intuitively felt by political decision makers to be the acceptable level of probability. The authors attempt to show, by logical analysis, that multipolar systems are more stable than bipolar systems. However, they acknowledge that their analysis may not be readily applicable to the real world and that, for example, a bipolar system with two moderate, cautious rival powers is likely to be much more stable than a system made up of several well-armed, reckless powers.]

ELLSWORTH, Robert
1978 "New Imperatives for the Old Alliance"
International Security 2:132-48

[An article on NATO that includes a brief, nontechnical discussion of the shifting strategic balance, and also a discussion of the balance of power as it has worked in the past and the reasons why the author sees it not working now.]

ERMARTH, Fritz
1978 "Contrasts in American and Soviet Strategic Thought"
International Security, Vol. 3, No. 2, pp. 138-55

[Perhaps the best readily available discussion of differences between US and Soviet approaches to strategic matters. Deals specifically with stability, pp. 144-45. Definition: "In US thinking, strategic stability has meant a condition in which incentives inherent in the arms balance to initiate the use of strategic nuclear forces and, closely related, to acquire new or additional forces are weak or absent." (145) This was thought to be achievable "on the

basis of a contract of mutually vulnerable societies and survivable offensive forces." (145) Gives example of results of US consensus on stability: "The main reason [that we lack counter-silo capabilities] is that we have abided by a conscious judgment that a serious counter-silo capability, because it threatens strategic stability, is a bad thing for the United States to possess." (143; emphasis added) The Soviets, on the other hand, must believe that nuclear war can be managed, survived, and won. The basic processes of history, on which their ideology and political legitimacy depend, cannot be derailed by either technology or an opponent. "Soviet failure to embrace US strategic stability notions as strategic norms does not mean . . . that the Soviets fail to see certain constellations of weapons technology and forces as having an intrinsic stability, in that they make the acquisition of major advantages very difficult. What they reject is the notion that . . . those constellations can be frozen and the strategic competition dimension thereby factored out of the East-West struggle permanently or for long periods." (146)]

FAY, Sidney B.

1930

"Balance of Power"

Encyclopedia of the Social Sciences, 2:395-399

ed. Edwin R.A. Seligman and Alvin Johnson, Macmillan: New York.

[In addition to presenting the dominant attitude toward balance-of-power policies during the inter-war period, Fay's article is an excellent, concise, historical treatment of the concept. He traces the modern conscious use of the balance-of-power principle to 16th Century continental Europe, and describes the role of statesmen and writers, especially Francois de Salignac de la Mothe Fenelon, in delineating the concept in the late 17th and early 18th centuries.]

FOSTER, Richard B.

1980 "From Assured Destruction to Assured Survival"
Comparative Strategy 2:53-74

[An important paper on US overall strategy, dealing with the concepts of deterrence, parity, equivalence, and sufficiency, and contrasting US and USSR approaches to them. Foster makes a significant point on stability, noting the US conviction that strategic stability has already been achieved. Thus, it is the aim of US strategic policy to maintain stability, and any new or additional strategic weapons or measures, offensive or defensive, are suspect because they could be "destabilizing." (58)]

GOURE, Leon

1979 "The Civil Defense Factor in the Strategic Balance"
National Defense, September/October 1979, p. 45
Reprinted in US Air Force, Current News, main edition,
Part II, October 22, 1979

[Gouré stresses the Soviet goal of achieving a war-waging capability and the role civil defense plays in this effort. He summarizes and comments on a 1978 report by the Director of Central Intelligence on Soviet civil defense. Noting that estimates of probable US population casualties from a Soviet strategic nuclear attack are far higher than those

for Soviet casualties from a US attack, he suggests that this asymmetry threatens the basis for stability in "assured destruction" and urges that the Soviet civil defense capability not be ignored.]

GRAY, Colin S.

1979a "Soviet-American Strategic Interaction in a Proliferated World"

In US Defense Planning for a More Proliferated World, ed. Lewis A. Dunn, Hudson Institute, Croton-on-Hudson, N.Y., April 1979

[In pp. 161-63 Gray makes a first effort at a systematic look at the stability concept, listing ten different ways in which the term is used and discussing each briefly.]

1979b "The MX ICBM: Why We Need It"

Air Force Magazine, August 1979

Reprinted in US Air Force, Current News, Main Edition, Part II, pp. 7F - 9F

[In making a case for the MX, Gray discusses stability, stressing that the Soviets do not recognize the Western concept of stability.]

1979c "Nuclear Strategy: The Case for a Theory of Victory" International Security 4:54-87

[This paper, focused on the need for an overall US strategy that includes a strategy for waging war and winning a war, includes significant thinking on stability. Gray says there are now two schools of thought on nuclear deterrence: (1) roughly, those who believe in security through a stability that is based on the logic of technology, and (2) roughly, those who believe in deterrence through "expectation of a militarily effective prosecution of war." (73) Allying himself with the second group, Gray urges that fear of "instability" has driven us off course, and that we must have civil defense, air defense, and ballistic missile defense.]

1980 "The Concept of a Stable Military Balance"

Hudson Institute Paper HI-3151-P, April 1980

Hudson Institute: Croton-on-Hudson, N.Y.

[By far the most extensive treatment of the stability concept, in the current military/strategic context.]

The author stresses his conclusion that Soviet military policy makers have no category of thought corresponding to US strategic thinking, in the post-1945 sense, and no strategic concepts -- including stability -- in the current US sense. The paper includes an excellent discussion of the close relationship between US arms control policy and the stability concept. Gray suggests that the US emphasis on stability makes it difficult to make any use of military power: "Stability, as a term loosely employed, is fully compatible with policy paralysis." (36) He lists six categories of stability: arms race stability; deterrence stability; crisis stability; weapon stability; command stability; and stability in perception.]

HERZ, John H.

1960 "Balance System and Balance Policies in a Nuclear and Bipolar Age"
Journal of International Affairs 14:35-48

[Herz presents an interesting thesis, relevant to the concepts of stability and balance. He suggests that a balance of power became possible only when feudalism disappeared and modern states developed. The fact that modern states were penetrable only by war, that is, through frontal attack on "the outer shell of their military establishment," gave them a stability, known as independence or sovereignty that made it possible for them to form coalitions that produced a balance of power. Now, with air war, and especially nuclear strategic war, states are no longer impenetrable, and the balance of power no longer works. Herz describes the current (1960) bipolar balance as crude, rigid, and precarious, and disagrees with those who feel it has made war impossible. (39-40)]

HOAG, Malcolm W.

1961 "On Stability in Deterrent Races"
World Politics 13:505-27

[A relatively early theoretical work that distinguishes between deterrence, defense, and victory, and contrasts the kinds of arms each might be expected to require and the different kinds of arms races each might be expected to produce. Hoag states clearly the reason for believing that a situation in which two opponents have sizable and equal numbers of vulnerable missiles is extremely unstable: "It is not enough that each side prefers peace to war. Each must so much prefer peace to war, even on advantageous terms, that it is willing to live with the risk of catastrophe."

(513) (For a different analysis of this pre-MIRV situation, see bibliographic entry for Coyle 1976.) Since no one can tolerate this kind of instability, stable deterrence is sought through greatly reduced vulnerability of the retaliatory force. Hoag makes the excellent point that invulnerability is relative, approachable but not attainable, and thus minimum deterrence can never be acceptable. He gives an excellent, sympathetic summary of the theory of stable mutual deterrence, and suggests that it is theoretically quite possible to have stable mutual deterrence and also have some damage-limitation capability, without having enough to look like a first-strike threat. Hoag also points out that if a stable deterrence posture, including vulnerable populations, is adopted, it will be easy to detect civil defense preparations by the other side. The implication is that if such preparations are detected, the United States should carry out similar preparations.]

IKLE, Fred Charles
1973

"Can Nuclear Deterrence Last Out the Century?"
Foreign Affairs 51:267-85

[The portion of this significant article most relevant to stability describes the interaction between arms control aims and nuclear deterrence strategy. (277-78) For example, because stability (i.e., deterrence stability and crisis stability) was felt to depend on mutual vulnerability of populations and mutual invulnerability of missile forces, the Senate in 1971 voted down funds for increasing the accuracy of US missiles, specifically citing the arms control argument: If we threatened the vulnerability of Soviet missiles, the Soviets would engage in arms racing; if we did not, they might reciprocate by not threatening the vulnerability of US missiles.]

1980

"The Growing Risk of War by Accident"
The Washington Post, June 24, 1980, p. 15

[This article deals with the threat to stability, and specifically crisis stability, of the declining US strategic position and the SALT strictures. Iklé suggests that the SALT requirements for fewer missiles, which lead to larger missiles; SALT encouragement for ballistic missiles over slow-moving cruise missiles; and SALT impairment of mobility for land-based missiles all breed instability rather than stability.]

He expresses special concern about the possibility of a launch-on-warning policy, which he believes could result from US strategic inferiority, and the danger of accidental war he believes it would bring.]

INSTITUTE FOR DEFENSE ANALYSES

1960 Lexicon of Terms Relevant to National Security Studies
on Arms and Arms Control

Proceedings of the Seminar on Deterrence and Arms Control, Washington, D.C., July 25-27, 1960, Paper No. 1, Annex I

IDA:SS(P)-1

Prepared by Joseph I. Coffey, John Everett, and James E. King, Jr.

Institute for Defense Analyses: Washington

[A useful pioneer effort to provide standard definitions for terms used in nuclear-age strategic discourse. Especially useful is the Appendix, listed separately in this bibliography under the name of its author, James E. King, Jr.]

1961a Project VULCAN: Arms Control and a Stable Military Environment

Prepared for the Department of State, Contract No. SCC 28270, February 24, 1961

Unclassified papers

See also separate listings under Institute for Defense Analyses 1961b, Schelling 1961, and Tucker 1961

Institute for Defense Analyses: Washington

[One of the earliest explorations of the relationship between stability, arms control, and military policy.]

1961b Project VULCAN: working paper

IDA 63-1640, prepared by Joseph I. Coffey, January 23, 1961

Institute for Defense Analyses: Washington

[Includes an outline for the project that indicates it will deal with such matters as the meaning of "stability" and what factors make for stability; the question of whether stable strategic deterrence can exist if one side has a preponderance of strength; the question of whether stable strategic deterrence can exist if one side has first-strike capabilities; the question of whether stability of strategic deterrence is an optimum condition; how arms control measures can be used to enhance stability; and the probable effects on stability of a number of possible new weapons systems and civil defense measures.]

INSTITUTE FOR FOREIGN POLICY ANALYSIS

1978

US Strategic-Nuclear Policy and Ballistic Missile
Defense: The 1980s and Beyond

Summary of a conference held in Washington, D.C.,
July 27-28, 1978

Institute for Foreign Policy Analysis: Cambridge,
Mass., and Washington

[This report includes a good, concise presentation of US strategic doctrine and concerns, updated to 1978, with special attention to the problem of extended deterrence for Europe. One third of the report's 22 pages are devoted to ballistic missile defense technologies. There is no discussion of stability as such, but the general strategic background is unusually good.]

KAHAN, Jerome H.

1975

Security in the Nuclear Age: Developing US Strategic
Arms Policy

Brookings Institution: Washington

[Very full, balanced presentation of deterrence and related strategic matters, probably the best and most comprehensive since Kissinger 1960. Includes excellent bibliographic footnotes. This is a clear, sympathetic presentation of the concept of stable deterrence. Kahan accepts the MAD designation, and appears to support the MAD position, although he also presents some of the arguments against it. A concise presentation of the rationale for seeking stability is included, together with specific listings of "stabilizing" and "destabilizing" weapons characteristics. (272-73, 303-04) This book grew out of a Brookings Institution and Carnegie Endowment for International Peace working group, the Brookings-Carnegie Strategic Arms Policy Study Group.]

KAPLAN, Morton A.

1957

System and Process in International Politics

John Wiley & Sons: New York

[A fundamental work in the field of international relations theory, with an excellent treatment of the theory of stability and the "balance of power" system, this book is a good place to begin a study of stability. Kaplan is precise in his definitions, rigorous in his approach. He suggests that the stability mechanisms operating on political systems are homeostatic, or steady-state, stability mechanisms, and notes that the thermostat and automatic aircraft pilot are physical examples of this homeostatic stability. If the system moves too far in

one direction, forces are automatically brought into play that move it back in the other, correcting the imbalance. Kaplan lists six theoretically possible types of international systems, of which, he says, only two, the "balance of power" system and the loose bipolar system, have existed historically. Kaplan presents rules for each of these two systems, rules which he believes must be followed if the system is to achieve stability. In either system, each actor must work to increase its own capabilities if stability is to be maintained. As Kaplan points out in discussing the "balance of power" system, "There is no external policeman who will or can act to restore the situation if the participants do not take countervailing action in time." (27)]

1958

"The Calculus of Nuclear Deterrence"
World Politics 11:20-43

[An article based on a logical, theory-of-games-based approach to deterrence and stability that has provocative implications. Kaplan suggests that Dulles's "massive retaliation" doctrine was a more rational approach to stopping aggression than were the views of those of his critics who favored limited war -- war limited in objectives, area of combat, or weapons employed. His analysis shows that the threat of counterattack, and specifically nuclear counterattack, as a response to aggressions affecting US interests, is logically more effective in restoring stability than is local defense through limited war. "Restrictions represent failures of will, and evidence of such failure reduces the costs to the non-restrictor of extensions of the conflict." (34) Unwillingness to extend a war to prevent an enemy victory is "inherently unstable if resources are equivalent." (35) Only if the goals of a war are insignificant to one or both of the parties is limitation of war possible.]

KING, James E., Jr.

1960

Lexicon of Terms Relevant to National Security Studies
on Arms and Arms Control, Appendix

IDA:SS(P)-1, Annex 1

Prepared for Seminar on Deterrence and Arms Control,
 Washington, D.C., July 25-27, 1960, sponsored by
 Institute for Defense Analyses

Institute for Defense Analyses: Washington

[Extremely useful brief essays on strategic terms.]

KISSINGER, Henry A.

1960 The Necessity for Choice
Harper & Brothers: New York

[Although Kissinger does not define stability or instability, he provides an extremely clear discussion of the kind of stability that is the antithesis of a quick-draw psychology of nuclear missile management. (22-23, 34 [chart], 216-17) Invulnerability of the retaliatory force is necessary to avoid a surprise attack, but to achieve stability, invulnerability must not be attained by numbers alone, which would make the invulnerable retaliatory force look like a first-strike force and would thus invite a preemptive strike from the adversary. Kissinger also refers to arms race stability, but without distinguishing it from the kind of strategic stability described above. (216)]

LODAL, Jan M.

1976 "Assuring Strategic Stability: An Alternative View"
Foreign Affairs 54:462-81

[Lodal believes that considerable Soviet increases in strategic nuclear strength need not affect stability adversely. To a large extent, his article is a critical response to Nitze 1976a.]

MARTIN, Laurence.

1973 "The Utility of Military Force"
Force in Modern Societies: Its Place in International Politics,
Adelphi Papers 102:14-21
International Institute for Strategic Studies: London

[A excellent discussion of this topic.]

MORGENTHAU, Hans J.

1954 Politics Among Nations (2d ed.)
Alfred A. Knopf: New York

[A classic text on international relations that includes an excellent discussion of the balance-of-power concept. (155-201) Morgenthau describes the balance of power as a universal concept, applying throughout nature and social institutions. "The balance of power and policies aimed at its preservation are not only inevitable but are an essential stabilizing factor in a society of sovereign nations." (155) He makes the important point that if stability alone were sought, it could be achieved by allowing one element of the system to take over or destroy all the others. The goal of a balance-of-power system is "stability plus preservation of all the elements of the system." (157; emphasis added)]

NATIONAL DEFENSE UNIVERSITY

1980 Rethinking US Security Policy for the 1980s
 Proceedings of the Seventh Annual National Security
 Affairs Conference, July 20-23, 1980.
 National Defense University Press: 1980.

[Includes several relevant papers, including one
by Colin S. Gray, "Strategic Stability Reconsidered,"
pp. 161-87, a later version of the preliminary paper
cited herein as Gray 1980.]

NITZE, Paul H.

1976a "Assuring Strategic Stability in an Era of Detente"
 Foreign Affairs 54:207-32

[Nitze suggests a definition of stability by
speaking of "the maintenance of strategic stability
-- in terms of minimizing both the possibility of
nuclear war and the possibility that nuclear

arms may be used by either side as a means of decisive pressure in key areas of the world." (207) He seems to see essential equivalence, or an essentially even strategic balance, as the prerequisite for and sign of stability. Seeing the Soviet buildup, especially in throwweight, as a serious threat to stability (balance), Nitze urges US increases in accuracy and mobility (land-mobile emplacements, such as the MX) for US missiles. Nitze does not accept the views of those who see accuracy as inherently counter-stability.]

1976b

"Strategic Stability"
Foreign Affairs 54:820-23

[A rebuttal to Lodal 1976, this article clearly presents Nitze's reasoning on what is necessary for stability. He urges that the measure of relative strength, and of crisis stability, must be what relative strengths would be after a nuclear exchange, that is, after a first strike and a second strike. Only in this way, he says, can we tell whether the strategic balance is such that one adversary would be able to improve its position by such an exchange, and thus only in this way can we judge crisis stability.]

1976c

"Deterring Our Deterrent"
Foreign Policy, No. 25 (winter 1976-77), pp. 195-210

[This paper includes a full, but nontechnical, discussion of various ways of measuring relative nuclear capability. Nitze mentions stability and defines it by implication as a situation in which neither side can expect to increase its ratio of advantage by attacking the other. He makes a strong case for speedily and greatly increasing survivable US counter-force capability.]

1979

"Preserving the ICBM Leg of the Triad"
National Defense, Vol. 64, No. 355 (July/August),
pp. 30-34

[This article makes a strong argument for basing US ICBMs in multiple vertical protective shelters (MVPS), like the system proposed for the MX, as a means to preserve crisis stability. Nitze systematically examines all the alternative responses to the approaching Soviet threat to US ICBMs and finds none of them but MVPS satisfactory. The article includes a good critique of launch-under-attack proposals.]

PIPES, Richard E.

1977 "Why the Soviet Union Thinks It Could Fight and Win
a Nuclear War"

Commentary 64:21-34

[This important article first introduced to a wider informed audience, outside the defense community, the evidence that the Soviet Union has a policy of achieving the capability of fighting nuclear war, has a strategy for such a war, and has increasing capabilities for it. It includes only a brief mention of stability as such.]

1980 "Soviet Global Strategy"

Commentary, April 1980, pp. 31ff.

Reprinted in US Air Force, Current News, weekend edition, April 13, 1980, pp. 1-F - 11-F

[Pipes outlines a Soviet expansionist strategy in an article notable for extensive, convincingly marshaled economic data supporting and illustrating its arguments. He presents a clear statement of the Soviet view on stability, as he sees it: "The kind of "stability" [of which US leaders speak] can be attained, according to this doctrine, only after capitalism has been liquidated. The liquidation of capitalism, however, calls for a long period of instability, including international wars, which according to Lenin, are an inevitable concomitant of capitalism." (1-F) Pipes shows the extent of Western European and Japanese economic dependence on the Soviet Union, and makes a strong case for the USSR's having deliberately brought this situation about as part of a strategy for achieving world hegemony, a term he feels is appropriate and one he explains clearly.]

QUESTER, George H.

1978 "Can Europe Really be Defended"

Encounter 51:6-19

[A paper on the advantages of precision guided munitions (PGMs) and of the urbanization of the North German Plain for the defense of NATO. Includes a good deal of discussion of the inherent stability and instability of certain weapons. Quester sees weapons that can be made mobile (for example tanks, mobile artillery), and thus used effectively on "territory they might try to move into," as destabilizing, and immobile weapons (artillery in fixed positions) that are most effective on the "territory

they originally occupy" as stabilizing. He describes stability as "a way of reducing the likelihood of war."]

RONA, Thomas P.

1977 "Strategic Deterrence in the Time/Frequency Domain"
Unpublished working paper, November 1977 (revised May 1978)

Boeing Aerospace Company: Seattle, Wash.

[Rona presents the concept of the need for ways to maintain deterrence over a broad spectrum of destabilizing Soviet initiatives, e.g. -- in order from those requiring only a slow response to those requiring response within minutes -- development of a particle-beam ABM, unveiling of a cruise missile defense, city evacuation, and ICBM preemption. For stability of deterrence, he suggests what would in effect be US deterrence reserves, i.e., responses the United States could have ready in case of Soviet initiatives. He sees this approach as needed especially for initiatives in the central part of the spectrum, where it should be possible to restore the balance, but where time would be important -- that is, where the response would need to come within weeks or months. The paper thus presents a realistically dynamic view of stability.]

ROSE, John P.

1978 United States/Soviet Union Strategic Arms Limitations:
A Study of Arms Control and Strategic Stability
Master's thesis, US Army Command and General Staff
College, Fort Leavenworth, Kansas, June 9, 1978

[The author suggests that "instead of enhancing strategic stability and promoting moderation of competition in strategic armaments -- the SALT I accords and post SALT I Soviet behavior illustrate what may be a quest for Soviet strategic superiority rather than parity. . . ." (ii) However, the paper does not seem to include any definition of stability or discussion as to what constitutes it. There is some discussion of crisis stability (42-43), in connection with President Nixon's sufficiency criteria.]

ROWNY, Edward L.

1979 "SALT Would Codify US Strategic Inferiority"
Baltimore Sun, July 25, 1979

[This article, based on Rowny's testimony on SALT before the Senate Foreign Relations Committee, states his view that the treaty would not contribute to

stability and mentions predictability as a requirement for stability. He suggests that SALT's limits on quantities of weapons not only are inequitable to the United States but also, by forcing Soviet efforts at force improvement into unconstrained and unverifiable qualitative improvements, "undermine predictability and hence stability."]

SCHELLING, Thomas C.

1961

The Stability of Total Disarmament

IDA Study Memorandum No. 1

Prepared for Institute for Defense Analyses as part of "Project VULCAN: A Study of Arms Control and a Stable Military Environment," prepared for the Department of State, November 8, 1961. Project leader, Joseph I. Coffey

Institute for Defense Analyses: Washington

[Although this paper contains a brief chapter on "The Idea of Stability," it does not define stability. What Schelling seems to mean by stability is the unlikelihood of war, or the likelihood of controlling and halting war, if the frame of reference is an existing state of war. If there is a premium on initiative, on going first, this makes for instability, he says. If there is a premium on speed of response in replying to an enemy's initiative, instability is also encouraged, that is, in this case, there will be greater difficulty in halting a war than there would be if speed of response were not important.]

1966

Arms and Influence

Yale University Press: New Haven, Conn., and London

[Schelling discusses stability at some length (234-38, 244-51, 256-59). What he is talking about is the relationship of weapon stability to strategic stability (in Gray's terms, Gray 1980 and Gray 1979, respectively). He points out that the relative weapons strengths of two adversaries, measured in numbers and firepower, may provide an indication of balance (i.e., equivalence), or preponderance, but they cannot indicate whether war is likely or unlikely, or which side will win if war comes. The degree to which weapons depend on speed, initiative, and surprise are what affect the likelihood of war, because they determine how great a reward attaches to striking first. Bombers that can be caught on the ground are unstable. He defines stability, in contrast to strength, as follows: "The dimension of

stability [is] the assurance against being caught by surprise, the safety in waiting, the absence of a premium on jumping the gun." (235)]

SHELLING, Thomas C., and Morton H. Halperin
1961 Strategy and Arms Control
Twentieth Century Fund: New York

[Presents especially clearly the visualized congruence of arms control policy and military policy, which, it was hoped, in the early and mid-1960s, would produce stability in arms and stability in deterrence. Rather than arms control and military policy being antithetical, "Adjustments in military postures and doctrines that induce reciprocal adjustments by a potential opponent can be of mutual benefit if they reduce the danger of a war that neither side wants, or contain its violence, or otherwise serve the security of the nation. This is what we mean by arms control." (143) Chapters 1, 2, and 5 deal with the stability of deterrence.]

SCHWARZ, Urs, and Laszlo Hadik
1966 Strategic Terminology: A Trilingual Glossary
Praeger: New York

[Definitions for many strategic terms, including stability, in English, French, and German. Includes brief explanations and, in some cases, examples of the term's use. The editors made use of King 1960, but this glossary, although useful, does not have the full discussions that King's work presents.]

SCOVILLE, Herbert, and Robert Osborn
1970 Missile Madness
Houghton Mifflin: Boston

[This is a primer on strategic weapons, deterrence, and arms control for laymen, written from an arms control point of view. Although very informally presented, with cartoon illustrations, it is serious in intent, is solidly argued, and presents a good deal of information. Scoville defines deterrence, assured destruction, and survivability, and includes a chapter on stability. He sees the present (1970) as a time of relative stability, sees ABMs and MIRVs as crucial threats to that stability, and pleads urgently for arms control -- specifically, for not deploying MIRVs or ABMs and for getting some kind of agreement, informal or formal, from the Soviets to refrain also. He presents fully the arguments for the destabilizing effects of MIRVs and ABMs, and this discussion is applicable to strategic nuclear stability in general.]

SEABURY, Paul, ed.

1965 Balance of Power

Chandler: San Francisco

[A good introduction to the subject, beginning with selections from classic writers, moving on to an essay by Glenn Snyder on the balance of power and the "balance of terror" (see separate bibliographic entry), and ending with an essay by Seabury relating the idea of the status quo to the idea of the balance of power. Seabury means by the status quo not just "however things happen to be right now," but an ordered international system, such as that established by the Congress of Vienna in 1815. He seems to equate a status quo with a stable international system. He stresses the incompatibility between the Western status quo concept and the Communist Marxist-Leninist concept of "politics-as-movement which rules out any fixed and enduring constitutional relations between men [or] nations." (213)]

SIENKIEWICZ, Stanley

1979 "Observations on the Impact of Uncertainty in Strategic Analysis"

World Politics 32:90-110

[The author stresses the greatly increased uncertainties that affect strategic planning now, in contrast to the late 1950s, when Wohlstetter's "Delicate Balance of Terror" laid the foundations for later strategic analysis. The operational uncertainties -- uncertainties as to just how one's first-strike attempt would work out in practice -- have greatly increased stability, Sienkiewicz believes. (107-108) He states that for maximum stability one would wish for a balance composed of low operational-uncertainty (high confidence) second-strike forces and high operational-uncertainty first-strike forces. With regard to force-planning stability -- US uncertainty about Soviet forces -- on the other hand, the more uncertainty, the less stability, in general. (99) Sienkiewicz discusses the distinction between arms race stability and crisis stability. (98)]

SIGAL, Leon V.

1979 "Rethinking the Unthinkable"

Foreign Policy, No. 34 (spring 1979), pp. 35-51

[Sigal outlines what he describes as a current debate between "stable balancers" and "war fighters." He lists what he sees as the views of the "stable balancers," but does not say what he means by the term, or define either stable or balance.]

SNYDER, Glenn H.

1960

"Balance of Power in the Missile Age"

Journal of International Affairs 14:21-34 (No. 1)

[Good early presentation of the concept of strategic nuclear stability. Snyder's points include these: For this kind of stability, the striking forces exist not to fight each other but to pose for the other side the prospect of unacceptable costs. Stability is affected by the vulnerability of the striking forces, the accuracy of the striking forces, and the number of forces on each side. Numbers, however, are not very important, and Snyder specifically states that quantitatively matching the opponent's military capabilities is irrelevant. (27) Vulnerability and accuracy are much more important, and stability varies inversely with both of them. If both sides have very accurate and very vulnerable forces, the tendency for a first strike is very strong. Stability would be fairly great if one side had only a little more than a minimum invulnerable second-strike force, but in such a case there is always the danger that the other side could in some way, perhaps by a secret scientific breakthrough, quickly acquire a maximum first-strike force, one that would make a first strike rational. (26)]

1965

"The Balance of Power and the Balance of Terror"

Seabury 1965:185-201

[A very useful paper for the study of stability, balance, and the relationship between them. Snyder's analysis focuses on the concept of equilibrium, common to both international relations theory and military-strategic analysis, and common to both the balance of power concept and the strategic nuclear balance concept. The section on stability (196-201) is extremely useful. Snyder points out three "sub-dimensions" of stability: lack of a tendency toward an arms race; lack of a tendency toward war; and a tendency to preserve the independence of all the major actors in the system. He points out that in the past (before World War II) the focus has been on the last of these, with war and armament acquisition treated as ways of preserving the independence of all the actors. In the "balance of terror" (mutual deterrence) approach, Snyder sees the emphasis on the lack of propensity for the system to produce war, and says this is obviously due to the possibility of nuclear war, whose horrifying nature seems to outweigh all

other considerations. (197) He says that "the basic criterion of stability in the balance of terror is the 'distance' which both sides are from possessing a full first-strike capability." (197) Snyder sees the commitment to use nuclear weapons in defense of Western Europe as the most serious potential source of instability in the contemporary balance, the one place where provocation at low levels of violence could bring about a US strategic first strike or, more likely, a tactical nuclear response that could escalate. (198-99) More generally, if a great nuclear power has another power under its nuclear protection, as a substitute for the creation of a conventional equilibrium, there is probably a reduction of stability in the strategic nuclear balance, since deterring attacks on third parties theoretically requires something approaching a first-strike capability. (200) Snyder also discusses the impact of proliferation on stability and the question of whether a bipolar or multipolar system is more stable.]

SNYDER, Jack L.

1977 The Soviet Strategic Culture: Implications for Limited Nuclear Operations
Project AIR FORCE Report (Rand)
Rand Corporation: Santa Monica, Calif.

[This paper is extremely useful for an understanding of the differences in US and Soviet approaches to strategic matters, and includes a good brief discussion of Soviet views on stability (18).]

SPYKMAN, Nicholas John

1942 America's Strategy in World Politics: The United States and the Balance of Power
Harcourt, Brace: New York

[Many of the facts and assumptions of this premissile, prenuclear work on geopolitics are outdated, but the first 40 pages, on power and war, are extremely valuable. The chapter on the balance of power (20-25) is an excellent introduction to this concept.]

STEINBRUNER, John

1978 "National Security and the Concept of Strategic Stability"
Journal of Conflict Resolution 22:411-28

[Steinbruner discusses "command stability," which he presents as a distinct category of stability, but which presumably could be viewed as one of several components of nuclear strategic stability. He points out that command, control, and communications (C³)

are having a great and increasing influence on whether or not strategic weapons are actually fired. He notes that the most "stabilizing" weapons systems, SLBMs, are the least stabilizing as far as command is concerned, because of the difficulty of secure and speedy communications with them. He sees maintaining deterrence as less important than preventing accidental war through C³ failure. Until US strategy can be redirected toward preventing accidental war rather than maintaining deterrence, Steinbruner urges a moratorium on significant changes in US strategic forces, strategic doctrine, or arms limitation policy.]

TUCKER, Robert W.

1961

Stability and the Nth Country Problem

IDA Study Memorandum No. 5

Prepared for the Institute for Defense Analyses as part of "Project VULCAN: A Study of Arms Control and a Stable Military Environment," prepared for the Department of State, November 8, 1961. Project leader, Joseph I. Coffey

Institute for Defense Analyses: Washington

[Tucker does not define stability, but seems to use destabilizing to mean "making war more likely." Tucker makes the following statements or assumptions about stability, in the context of nuclear proliferation: Novelty is per se destabilizing. (4) Stability depends on our ability to understand and to control a situation. (5) Increased "insecurity," such as he suggests would be caused by nuclear proliferation, is destabilizing. (5)]

US CONGRESS

1977a

An Analysis of Arms Control Impact Statements Submitted in Connection with the Fiscal Year 1978 Budget Request

Joint Committee Print. 95th Congress, 1st Session, April 1977

Prepared for Senate Committee on Foreign Relations and House of Representatives Committee on International Relations by the Congressional Research Service, Library of Congress

[Arms control impact statements (ACISS) have been required, since legislation to this effect was passed in 1975, for all weapons systems for which appropriations are being sought. These critical evaluations of ACISSs, together with criteria and models for future ACISSs, appear to express the arms control philosophy of Schelling and Halperin (1961), as it became crystallized and established in the 1960s

and 1970s: Arms policy and arms control policy form one unified whole; stability is the goal of both. This philosophy is clearly and logically set forth in this document, but at some points in the analysis there appears to be a confusion between stability (or balance) in a static sense -- equal strength on both sides -- and stability in the dynamic sense of resilience to shock. Also, the unity of arms control and weapons policy is reduced to absurdity when questions like some of the following are recommended as guides for future ACISs: "What effect might the proposed system have on the military stability of the relevant environment? . . . Could acquisition of the proposed system contribute to an adversary's perception of his own position as being inferior? Under what circumstances could the system be viewed as one which granted the United States an advantage over an adversary?" (20)]

1977b

"The Neutron Bomb Arms Control Impact Statement"
Congressional Record, August 3, 1977, H8498-H8502

[This document includes both the ACIS and an evaluation of it by the Congressional Research Service of the Library of Congress. The CRS evaluation suggests that the ACIS for the neutron bomb should have considered its probable impact on stability, and should have asked the questions about whether the weapon might appear to give the United States an advantage over an adversary that are included in US Congress 1977a (see bibliographic entry). The implication appears to be that if the United States develops a weapon that could be perceived by an adversary as giving the United States an advantage over that adversary, then the weapon is a possible threat to stability, and this is an argument against its development. This approach may be contrasted with Kaplan's (1957) rules for making either a "loose bipolar" or "balance of power" system work. These include the necessity for each actor in the system working to increase its own capabilities if stability is to be maintained.]

1979

Fiscal Year 1980 Arms Control Impact Statements
Joint Committee Report, 96th Congress, 1st Session
March 1979
Senate Committee on Foreign Relations and House of
Representatives Committee on Foreign Affairs
Prepared by the US Arms Control and Disarmament Agency

[These statements include for each group of weapons a statement as to its probable effect on global and

regional stability, and thus provide many examples of the ways the term is used, and suggest what a body of government officials consider to be the characteristics and prerequisites of stability. Political stability, arms race stability, crisis stability, strategic stability, and deterrent stability are all mentioned. By implication, strategic stability, which seems to be synonymous with deterrent stability, depends on possession of (1) no first-strike capability and (2) a secure second-strike capability. It may be noted that the outline followed for these ACISs does not include the questions on whether the weapons system might make an adversary feel inferior that are cited in the bibliographic entries for US Congress 1977a and 1977b.]

US DEPARTMENT OF DEFENSE
1978-1980 Annual Report, Fiscal Years 1979-1981
Government Printing Office: Washington

[These documents, and the corresponding reports of earlier years, are important for their official mentions and treatments of stability and related concepts. The most recent report, for Fiscal Year 1981, includes a paragraph specifically devoted to "long-term stability in the strategic balance" and another on crisis stability. (69) Stability is not described in codified, vulnerability-matrix fashion, but rather as follows: "Long-term stability . . . is maintained by ensuring that the balance is not capable of being overturned by a sudden Soviet technological breakthrough, either by innovation or by the clandestine development of a 'break-out' potential." (69)]

US DEPARTMENT OF STATE
1980 US Foreign Policy: Our Broader Strategy
Statement by Secretary Cyrus R. Vance before the
Senate Committee on Foreign Relations, March 27,
1980
Department of State Current Policy No. 153

[In this document, the term stability is always used with reference to political stability, while balance is used consistently with regard to military matters. Four levels of stability are referred to in different parts of the paper -- international stability, the stability of the relationship between the United States and the Soviet Union, regional stability, and national stability. Although stability is not defined, it seems to carry the meaning of a permanence or resiliency possessed as a result of the

inherent nature or structure of the entity under consideration. National stability results when internal tensions are at a minimum, which happens when the expectations of people within a country are being met to a reasonable degree (3); real internal stability is not just the status quo rigidly enforced but rather comes from peaceful progress toward basic human rights. (8) This national stability, combined with lowered tensions between nations, leads to regional stability. International stability results from the same process, and is aided by other factors, including controlling the growth and spread of nuclear and other weapons. A stable relationship with the Soviet Union depends on both sides restraining competition and showing regard for each other's interests. (5) A careful reading of the text provides a definition, by inference, or stability as a low probability of future violence. The phrase "peace and stability" is used several times.]

US JOINT CHIEFS OF STAFF

1978-1980 United States Military Posture, Fiscal Years 1979-1980

Government Printing Office: Washington

[Source for official statements on strategic subjects, including stability. There is little on stability in these recent posture statements. The statement for 1979 states that deterrence and, by implication, stability depend on the vulnerability of the societies involved (8)]

US NATIONAL DEFENSE UNIVERSITY

1977 Toward Cooperation, Stability, and Balance

Proceedings of the National Security Affairs Conference, July 18-20, 1977

National Defense University: Washington

[The conference's panel on regional stability asked the question, "What is, in fact, the stability which [seems] taken as an a priori accepted objective of US policy?" (47) It answered its question as follows: "Regional stability, never questioned as a desirable US objective, was redefined as a more fluid situation than often assumed, amounting to regional change whose outcomes favor the United States. (49; emphasis added) It was agreed that influencing those outcomes required a US capability to intervene regionally. (40)]

WOHLSTETTER, Albert

1958

"The Delicate Balance of Terror"

Foreign Affairs 37 (No. 2, January)

Reprinted in Henry A. Kissinger, ed., Problems of National Strategy (New York: Frederick A. Praeger, 1965), pp. 34-58

[Wohlstetter does not discuss stability per se, but this is a landmark piece of thinking on what is necessary for a stable nuclear balance. In his introduction, Wohlstetter says: "I should like to examine the stability of the thermonuclear balance which, it is generally supposed, would make aggression irrational or even insane. The balance, I believe, is in fact precarious, and this fact has critical implications for policy." (35)]

WRIGHT, Quincy

1965

A Study of War, 2d ed.

University of Chicago Press: Chicago

[This is a reprinted edition of the massive 1942 book, with an appended commentary on war since 1942. The work includes a section on stability (387-405) in which the author classifies changes in the international system as either movements toward static stability, or movements involved in dynamic, oscillating, or adaptive stability, all of which terms he explains. The analysis is generally very abstract, and much of it does not transfer well to the present. Kaplan 1957 and Morgenthau 1954 are better for an introduction to concepts of stability and balance of power, and Spykman 1942, contemporary with Wright's work, is better on the concept of power itself.]

ZEIBERG, Seymour L.

1979

"Strategic Systems Outlook"

National Defense, Vol. 64, No. 355 (July/August), pp. 26-29

[This article by the Deputy Under Secretary of Defense for Research and Engineering (Strategic and Space Systems), gives an overview of the US strategic posture vis-a-vis the Soviet Union and outlines recommendations for US strategic systems. It discusses essential equivalence and mentions stability and balance.]

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