

The Concept of Stability in the Context of Conventional War in Europe*

ROBERT AXELROD

Institute of Public Policy Studies, University of Michigan

'Stability' is a widely used concept in strategic analysis, especially in the context of nuclear strategy. This article examines the meaning of the term, and shows how it can be usefully applied to problems of conventional war, especially as these problems apply to Europe. In scientific usage, stability is the condition in which a slight disturbance in a system does not produce too disturbing an effect on that system. Traditionally, military writings in both East and West have been more deeply concerned with balance than with stability. In Europe today there is a paradox of strategic stability: the danger of instability at high levels of conflict promotes stability at low levels. Nevertheless, there are many political problems in Europe that are potential causes of instability and that should not be ignored. Attending to the problems of strategic stability also means a concern with linkages between conventional and nuclear war, vulnerabilities of armies to surprise attacks, maintenance of command and control, the relative strength of the defense compared to the offense, and the subtle interacting effects of dispersal, alert, and mobilization.

1. Introduction

'Stability' is a widely used concept in strategic analysis, especially in the context of nuclear strategy. The purpose of this article is to examine the meaning of the term, and then to show how it can be usefully applied to the problems of conventional war, especially as these problems apply to Europe. Without doubt, the recent interest in broader applications of the concept of stability is based upon a growing realization of the fact that when it comes to security we are all interdependent.

There is a growing realization in both Western and Soviet strategic analysis that stability is just as important in conventional war as in nuclear war. This realization has probably been due to two factors. The first is that stability at the nuclear level seems relatively secure, except for the danger of escalation from a conventional war. The second factor, growing out of the first, is the increased attention being paid to the import-

ance and potential of conventional arms control for promoting stability.

The article will first show how the concept of stability is used in mathematics, biology, and game theory – all areas where the meaning is quite precise and fully shared between Western and Soviet scholars. Next, the article will show how the concept has been used in nuclear affairs, where there are somewhat differing perspectives between Western and Soviet specialists. Finally, the usefulness of the concept will be explored for the problems of conventional war in Europe.

Before proceeding, however, it is worth pointing out that studying conventional warfare is important not only for its own sake, but also for the avoidance of nuclear war. The outbreak of conventional war in Europe would certainly entail a risk of escalation to nuclear war. The risk would be substantial because the stakes in Europe are so high, the combat could be very intense from the very beginning, thousands of tactical nuclear weapons makes command and control difficult, and in any case NATO is pledged to use nuclear weapons if necessary to prevent a Warsaw Pact victory.

2. 'Stability' in Scientific Usage

Unlike many concepts in strategic analysis, 'stability' has a quite specific meaning de-

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rived from scientific usage. The general idea is that stability is the 'condition in which a slight disturbance in a system does not produce too disturbing an effect on that system' (*Encyclopedia Britannica*, 1986, s.v. 'stability'). As an ecologist uses the concept, stability is measured 'by the tendency for population perturbations to damp out, returning the system to some persistent configuration' (May, 1974, p. 3).

The same basic idea is used in engineering: 'The equilibrium of a mechanical system is stable if after a small perturbation (displacement or push) the points of the system forever afterward differ but little from their equilibrium position; otherwise the system is unstable.'¹

An important distinction is between local (or neighborhood) stability and global stability. *Local stability* refers to stability in the vicinity of an equilibrium point. *Global stability* means that the system will return to the same point even after a very large disturbance. These concepts are best illustrated with the idea of an *energy landscape*: an imaginary terrain in which the system can move, always downhill. Thus a system with a global equilibrium would have one large valley. A system with a local equilibrium might have a locally stable valley nestled in the tip of a volcano-like peak (May, 1974, p. 15).² The idea of an energy landscape helps distinguish between two quite different aspects of stability: the height of the hills that separate one state of the system from another, and the amount of disruption that the current state is subject to. These correspond to the ability of the system to resist disturbances, and the extent to which the system is subject to disturbances.

Stability is a widely used concept. It is vital to biology because living organisms must be able to restore their internal conditions after disturbances from the outside, an idea that is labeled *homeostasis*. Stability is central to cybernetics since the problem of control can be stated as how to maintain a desirable condition in the face of shocks to the system. As a final example, stability is used in game theory to study where the oscillations of an interaction between players will end up. For example, a *Nash equilibrium* is an outcome

in which none of the players has an incentive to change if no one else changes.

3. 'Stability' in Political and Strategic Usage

The concept of stability has carried over into political and strategic usage with two important modifications. First, the scientific usage does not imply a lack of change, but only the ability to restore the system after a perturbation. In political usage this distinction is often blurred. Second, in strategic usage stability usually refers to the maintenance of peace, rather than any other possible state of the system. Thus, in political usage the concept takes on a positive connotation: stability is assumed to be a good thing. This connotation is so strong that often the meaning of the term gets lost and the word is simply used to indicate approval of a policy by saying that it promotes stability.

Just because stability usually has such a strong positive connotation in politics, it is worth pointing out that sometimes national leaders go to great lengths to overturn the stability that exists. A good example is Sadat's frustration with the Israeli occupation of Sinai after 1967, a situation that looked all too stable due to the lack of effective international pressure on Israel to evacuate. In order to upset this stability, Sadat attacked across the Suez Canal in 1973. From a military point of view the attack was successful at first, but then was met with a counter-stroke that surrounded the Egyptian Third Army. From a political point of view it was very successful, destroying the stability that existed and eventually leading to an Israeli evacuation of the Sinai and a new (more or less) stable relationship between Egypt and Israel.

4. 'Stability' vs. 'Balance'

In the strategic context, the concern for stability reflects a concern with the avoidance of war, rather than victory in war. As such, it represents a choice in a central issue in strategic debate, whether to place a greater emphasis on avoidance of war or victory should war occur.

This issue is clarified by examining the contrast between the concepts of 'stability'

and 'balance'. The Western concept of *balance* (as in 'balance of power' or 'balance of forces') measures the relative strengths of the two sides in an actual or potential conflict.³ The term evokes the image of the balance beam, a device to measure relative weights. Interestingly, the balance beam is designed to be unstable, so that slight differences in the weights on the two sides can be detected. The image of 'balance of forces' often suggests the same degree of instability, implying that a small difference in forces might lead to a large difference in the military outcome.

The Soviet concept of *correlation of forces* does not necessarily imply the instability of the balance beam, but it does provide the same function as balance of power. It is meant to measure the relative strengths of two sides in a real or potential war, and thereby provide information useful in predicting the outcome. The concept of correlation of forces is often used to evaluate shifts that take place over time, suggesting that equality is at best a temporary phenomenon.

Traditionally, military writings in both East and West have been deeply concerned with issues of balance, and not with issues of stability. For example, the authoritative Soviet text on military strategy from the 1960s emphasizes the requirements for victory, but not the requirements for stability (Sokolovskiy, 1968).

Military writings on both sides often define the important task as winning rather than avoiding war. They see avoiding war as being achieved by deterrence, which they define as the threat of being able to win. This accounts for the slogan in the West of 'peace through strength'. A common view is that the more the balance favors one's own side, the less likely is war. This follows from the assumption that one's own side does not want war and only the other side would start one. But this view ignores two aspects that need to be carefully examined: crisis stability and arms race stability.

5. Aspects of 'Stability' in Nuclear Affairs

The separate aspects of stability have been developed mainly in the context of nuclear

issues. In the Western literature on nuclear affairs, 'stability' is typically considered in terms of either 'crisis stability' or 'arms race stability'. The clearest statement of these two types comes from Leon Sigal, who also distinguishes them from 'strategic stability' and calls the overall term 'military stability'. *Strategic stability* results when both sides have sufficient invulnerable nuclear weapons to inflict unacceptable damage on the other side even after suffering a nuclear attack. *Crisis stability* signifies that neither side's weapons present vulnerabilities that could attract a pre-emptive strike. *Arms race stability* prevails when neither side fears that its opponent is developing weapons that could endanger strategic stability or crisis stability (Sigal, 1983).⁴

Thus, in Sigal's usage strategic stability means that an effective second strike is always possible, crisis stability means that there are no targets which would tempt a first strike, and arms race stability means that neither of the other two problems is feared from the other side's weapons development. In much of the Western literature the terms are used more broadly, with crisis stability referring to a disincentive to attack in a crisis, and arms race stability referring to a disincentive to match the peacetime arms expenditure efforts of the other side.

Recent Soviet literature also uses the concept of stability primarily in the context of nuclear affairs. The general concept is usually called 'strategic stability'. A useful definition is provided by Kokoshin & Kortunov (1987). This definition provides three *conditions of strategic stability*:

- (1) The political and military-strategic situation provides no stimuli for either side to use nuclear weapons first. Retaliatory actions of the side attacked rule out rational exploitation of a first strike.
- (2) Neither side has the ability to deal a disarming first strike. Any version of attack leaves the attacked side a potential for dealing unacceptable and comparable damage to the aggressor.
- (3) There are no conditions for an unsanctioned and accidental use of nuclear weapons which, in turn, presupposes that the

sides have a reliable and survivable system of command and communication for warning of rocket attacks.

A comparison of the Western and Soviet usages shows that the Soviets use 'strategic stability' in a manner similar to the Western concept of incentives that create 'crisis stability', but with added concern about the dangers of uncontrolled escalation (Gottfried & Blair, 1988). In recent years, US scholars have also begun to move beyond the concern with incentives that affect rational actors and have emphasized the importance of command and control for the maintenance of stability. See for example Steinbruner (1978), Bracken (1983), and Blair (1987). On the other hand, the Soviets do not appear to make much explicit use of the concept of arms race stability, although they do discuss the issue in specific contexts, such as nuclear weapons in space and the relationship between the offense and the defense.

6. *Stability in Conventional War*

The concept of stability has not been widely used in the analysis of contemporary conventional war. The likely reason is that most writing on contemporary conventional war has been concerned with issues of victory, such as predicting the outcome of a hypothetical war (as in the literature on 'balance of forces' or 'correlation of forces'), or the merits of particular weapons or doctrines in attaining some military goal. For these questions, stability is less important than strength.

The outbreak of World War I provides a good example of a stability problem in the context of conventional war. The erroneous belief that the offense was stronger than the defense provided a strong incentive to escalate (Snyder, 1984). The relative strengths of the major powers of the era were heavily influenced by their degrees of mobilization. Mobilization, in turn, required weeks or months, with the time required varying from one country to the next. Thus once Austria-Hungary started to mobilize, the USSR felt the need to mobilize. And then Germany feared that it would have to mobilize. And

not only would Germany have to mobilize but its war plans called for a quick attack on France so that Germany would be able to defeat one enemy before having to deal with the fully mobilized power of the other (namely the USSR). Thus the interactions of the mobilization plans led to a serious crisis instability whereby a precipitating event led directly to the outbreak of war.⁵

In terms of the energy-landscape image, the outbreak of World War I suggests that the dynamics of mobilization made the hills between war and peace not very high. The disturbance caused by the assassination of Archduke Ferdinand was enough to push the system over this hill. But since the hill was not very high, some other disturbance might well have been enough to do the same.

7. *The Paradox of Stability in Europe*

Ironically, Europe is both highly stable and highly unstable. At low levels of disturbance, Europe is largely immune from the problems of crisis stability. But at high levels of disturbance Europe is highly unstable. The fundamental feature of the current situation is worth exploring. The ability to resist low levels of disturbance is due to the following factors: the presence of large and highly capable forces, the recognition by both sides of important interests of the other, and forty years of precedent that nothing essential will change. These very same factors which promote 'local stability' through clarity, fear, and precedence also imply that if the situation begins to unravel there are no clear guidelines about how conflict would develop or be restrained.

In fact, the situation is best seen the other way around: the danger of instability at high levels of disturbance causes the stability at low levels. This is what I call the *paradox of strategic stability*. The inherent danger that any serious conflict in Europe may escalate to nuclear warfare means that there is a very strong incentive to prevent any disturbance from causing a military conflict.

There is an important implication of the paradox of strategic stability that helps explain some of the major policy differences within the NATO alliance. Many West Euro-

peans see little effective distinction for themselves between a large conventional war and a nuclear war. Therefore they wish to avoid any sort of war by policies that would tighten the link between the outbreak of fighting and the danger of escalation to nuclear weapons. Conversely, Americans tend to be much more concerned about nuclear war than conventional war, and are therefore more willing to pursue policies that would lessen the chance that a conventional war would escalate out of control. In effect, West Europeans want to rely on the paradox of strategic stability to avoid any kind of war, and US citizens are willing to consider lessening the paradox by partially decoupling the risk of conventional war from the risk of nuclear war.⁵

8. *Political Threats to the Stability of Europe*

Since stability refers to the ability to restore the situation in the face of disturbances, it is important to assess the potential for disturbances in any given context. Unfortunately, this is generally not done for strategic stability because the concept is usually used in an apolitical context, whereas many of the potential disturbances are themselves highly political.

The common view is that Europe possesses little or none of the volatility that affects so many crisis-prone areas of the Third World. In Europe, the boundaries are well established, and earlier sources of dispute (such as the status of Berlin) have been regularized.

Nevertheless, there are many possible reasons why a government or a nongovernmental group might want to disrupt the status quo in Europe. Consider these facts.

1. Within Europe, Germany's unification and the new Central European regimes have unlocked the rigid bipolar alliance structures, leaving each country freer to pursue its own interests. Military planning can no longer rely on simple assumptions of friend and enemy in any future possible conflict.
2. National and religious minorities feel a

strong sense of discrimination and alienation in many countries. Examples include Hungarians in Rumania, Turks in Bulgaria, and Catholics in Northern Ireland. In some cases, there is a great deal of sympathy for these minorities in the neighboring homeland nation. Threats to national unity are not beyond the realm of the possible, especially in a small state where one group or another would be tempted to call on foreign assistance to establish or maintain its position.

3. Separatist movements exist, as in the Basque region of Spain.
4. The intrusiveness of foreign military presence is a smoldering political issue (e.g. against ground and air exercises in West Germany and against nuclear naval visits in Denmark).
5. Anger at the limited sovereignty implied by lack of control over one's own armed forces could increase as national assertiveness grows. The US effort in the 1960s to develop a multilateral nuclear force for NATO was directed at this danger, but proved unnecessary. Nevertheless, the problem could arise again in either alliance.
6. Mass-based politics leading to civil turmoil (including large-scale strikes) have occurred in France, Poland, and elsewhere.

Over the last forty years, none of these historical problems have caused a war, probably due largely to the strength of the stability paradox in Europe. But with so many potential sources of political difficulties there is no guarantee that one or another old problem (or even a brand new one) might not get out of control.

9. *Crisis Stability in Europe*

If a serious political disturbance were to arise in Europe, a key determinant of whether a major war would develop or not would be the extent of crisis stability at the conventional level. Since crisis stability is so strong at the nuclear level, there would be little incentive to immediately use nuclear weapons in a European political conflict. But whether conventional war would break out would be

heavily influenced by the crisis stability at the conventional level, including the degree of linkage between conventional and nuclear war.

Crisis stability at the conventional level in Europe is much weaker than at the nuclear level. At the nuclear level each alliance has a secure second strike, and the most tempting nuclear targets (such as missile submarines in port) are not enough to change that fact. However, at the conventional level there are several powerful advantages in striking first, especially if done before the other side has undertaken basic preparations such as dispersal and combat alert. Among these advantages are the following.

1. Air bases are vulnerable to attack. Even a temporary disruption can be important because it would allow follow-on attacks to be made under more favorable conditions.
2. Command and control facilities, especially the most centralized ones, are subject to disruption.
3. Initial operations can be planned in great detail, but reactions to them by disrupted forces are likely to be somewhat sporadic.
4. The value of chemical weapons is greatest in an initial surprise attack.

The degree to which these factors provide an incentive to strike first is dramatically reduced once the defender has had a few days to go on full alert. This is because alert procedures not only raise the general readiness of forces, but include measures to make forces less vulnerable. An example of how alerts reduce vulnerability is the dispersal of forces from their peacetime locations which are concentrated and known.

Alerts not only reduce vulnerability, they also increase the overall capacity to wage war. Therefore a heightened level of alert by one side can easily lead to a heightened level by the other out of a sense of caution. Thus alerting forces can have the ironic effects of directly increasing crisis stability (by making forces less vulnerable), while causing a chain of events that dramatically decreases crisis stability (by leading to reciprocal increases in force readiness) (Blair, 1987; see also Betts, 1982).

Dispersal is only one dimension of the problem. Command and control is another. For example, the dispersal of nuclear weapons in Europe will make them less vulnerable to attack, but will also make them much harder to control should fighting begin. This reduced ability to control further escalation is another example of the stability paradox discussed earlier: it makes conventional combat less likely precisely by making escalation to nuclear war more likely (Bracken, 1983).

Yet another dimension of the crisis stability problem in Europe is the mobilization of forces. As in World War I, each side would feel pressure to mobilize its reserves if the other side began to mobilize in the context of a threatening crisis. Presumably, plans are more flexible than they were in 1914, but the underlying dynamics contain some of the same instabilities based upon the mutual fear of getting too far behind the other side in the mobilizing of forces during a crisis.

10. *Offense and Defense in Europe*

The relative strengths of the offense and the defense are vital for the determination of stability (Jervis, 1978; Kokoshin & Lario-nov, 1988). Equally important for stability are beliefs about these relative strengths, because the beliefs affect force-planning, military doctrine, training, and ultimately the decisions about war itself. Unfortunately, beliefs on this subject are often at variance with the reality revealed by subsequent conflict. Once again, World War I is a prime example.

Recently, attention has focused on the relative strengths of the offense and defense in modern conventional war. NATO has long been concerned about the large number of tanks of the Warsaw Pact and the offensive doctrine that supports their use for seizing territory. Two things are new. First, the Warsaw Pact is losing its strength and coherence. Second, conventional arms control has become a high priority for both sides.

The Warsaw Pact has proposed negotiations 'to work out a procedure of reducing armed forces and conventional armaments where the process of reduction would lead to

lessening the danger of surprise attack and which would promote the consolidation of military-strategic stability on the European continent' (Warsaw Pact, 1986). The Soviet Union is changing its own doctrine to emphasize the avoidance of war, and will consequently stress defense. For a preliminary evaluation see Holden (1987).

Military organizations, when left to themselves, tend to prefer offensive doctrines for a variety of reasons, including: the need for standard scenarios, the incentive to deny an adversary his standard scenario, the inability to calculate comparative national wills as required by deterrence doctrines, gains in organizational size and funding, and enhancement of organizational independence from civilian authority (Posen, 1984; see also Snyder, 1984). Still another reason for favoring the offense is dubious belief that it is necessary for maintaining high morale (Kokoshin & Larionov, 1988).

The defense, however, has certain advantages in conventional war. At the strategic level, the defender is close to his own resources, and is more resolute in defending his own home.⁷ At the tactical level, defenders can better utilize the terrain, more widely use fortification work, and more fully exploit their fire.⁸

11. Conclusion

This article illustrates the point that concepts are important because they suggest what variables to attend to and what questions to ask. The concept of strategic stability suggests attending to the factors that would prevent a disturbance from escalating, and suggests asking about measures that would decrease incentives for arms races and for pre-emption in a crisis. These are very different questions that are suggested by concepts of balance of power or correlation of forces, where the emphasis is on how to improve one's own position relative to that of a potential enemy. In the context of conventional war in Europe, attending to problems of strategic stability means a concern with political factors that could cause disruptions, linkages between conventional and nuclear war, vulnerabilities of armies to surprise attacks,

maintenance of command and control, the relative strength of the defense compared to the offense, and the subtle interacting effects of dispersal, alert, and mobilization.

NOTES

1. *Great Soviet Encyclopedia* (1977), s.v. 'stability of equilibrium'. See also s.v. 'stability of an automatic control system'.
2. Other aspects of stability are *structural stability* and *quantitative stability*. They are defined in May (1974, pp. 17–18 and 113). *Stable cycles* are also possible. The mathematical theory of stability in ordinary differential equations was developed almost a century ago by A. M. Lyapunov (see Luenberger 1979).
3. For a theoretical treatment of balance of power, see Galtung (1964).
4. For theoretical treatments of arms stability in the context of arms races, see for example Liossatos (1980), Smith (1980) and Intriligator & Brito (1986).
5. A good account is in the first part of Tuchman (1962). This account influenced President Kennedy's thinking during the Cuban Missile Crisis (Kennedy, 1969, p. 62). However, Robert Kennedy stresses the errors of the decisionmakers, rather than the instability of the context. For a more detailed analysis of the relationship between the outbreak of World War I and the problems of nuclear war, see the special issue of *International Security*, Summer 1984 (vol. 9, no. 1).
6. Recently, the positions have become more complex, as indicated by the US desire to sustain the coupling by modernizing tactical nuclear weapons, and by the West German debate over weakening the coupling by adopting non-provocative defenses. On the latter, see Gates (1987).
7. General N. P. Mikhnevich in 1911 as cited by Kokoshin (1988).
8. A. Svechin (1928), p. 227 as cited by Kokoshin (1988).

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ROBERT AXELROD, b. 1943, PhD in Political Science (Yale University, 1969); Distinguished University Professor of Political Science and Public Policy, Institute of Public Policy Studies, University of Michigan. Published *The Evolution of Cooperation* (Basic Books, 1984) and other works on international security affairs, game theory, and decisionmaking.