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Stability-Instability Paradox

Contributors: S. Paul Kapur

Edited by: Fathali M. Moghaddam

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As the likelihood of nuclear conflict declines, the risk of conventional war increases and as the likelihood of nuclear conflict increases, the risk of conventional war declines. This inverse relationship between the probability of nuclear and conventional military conflict is known as the *stability-instability paradox*. This article discusses the logic of the stability-instability paradox in detail, explaining its central role in nuclear deterrence. It then explores policy challenges that the stability-instability paradox has created for nuclear-armed states. Finally, it explains why the stability-instability paradox will remain an inescapable problem for nuclear states in the future.

The Logic of the Stability-Instability Paradox

States may seek to acquire nuclear weapons for a variety of reasons. For example, they may covet the international prestige that they believe comes with the possession of a nuclear capability. Alternatively, they may develop a nuclear capacity to satisfy the bureaucratic interests of politically powerful military or scientific research organizations. The central reason that states seek to acquire nuclear weapons, however, is straightforward—to enhance their security. A state armed with nuclear weapons should be safer from attack by adversaries than a state without nuclear weapons. Potential enemies know that any conflict with a nuclear-armed opponent could result in a nuclear exchange, with possibly catastrophic results. Consequently, they are likely to view such conflict as being prohibitively costly and to avoid it. Thus, by acquiring nuclear weapons and creating a danger of nuclear conflict, states achieve deterrence and lower the risk of conventional war.

Deterrence is the use of conditional threats to prevent an adversary from taking undesirable action and upsetting the status quo. Deterrence will hold, and the status quo will be preserved, if the expected cost of an action (cost X the probability of suffering the cost) outweighs the action's expected benefit (benefit X the probability of realizing the benefit). Nuclear weapons enhance deterrence because they greatly increase the expected cost of upsetting the status quo, all but ensuring that it will outweigh the expected benefit of doing so. It is difficult to imagine that any benefit states seek, no matter how great, could outweigh the cost of nuclear devastation.

By acquiring nuclear weapons, then, states create a paradoxical situation. At one level, they lower nuclear stability. Nuclear stability is a measure of the likelihood that nuclear weapons will be used; as the likelihood of nuclear use increases, nuclear stability decreases. States necessarily reduce nuclear stability when they acquire nuclear weapons because nuclear acquisition increases the likelihood of nuclear use. Previously, nuclear use was impossible, but it becomes possible after states acquire nuclear weapons.

Even as they lower nuclear stability, however, states acquiring nuclear weapons increase conventional stability. Conventional stability is a measure of the likelihood of conventional military conflict; as the likelihood of conventional conflict decreases, conventional stability increases. A state's development of a nuclear weapons capability increases conventional stability by lowering the likelihood that the state will have to engage in a conventional war.

Nuclear and conventional stability, then, are inversely related. As the likelihood of nuclear use increases and reduces nuclear stability, the likelihood of conventional conflict declines and increases conventional stability. And as the likelihood of nuclear use declines and increases nuclear stability, the likelihood of conventional conflict rises and reduces conventional stability. This is the core logic of the stability-instability paradox.

What accounts for the stability-instability paradox? Why would a reduction in nuclear stability lead to an increase in conventional stability? A state uses nuclear weapons to deter conventional military aggression by threatening nuclear retaliation against a conventional attacker. The efficacy of this threat depends in part on its credibility; the more credible the threat, the greater its expected cost and deterrent effect. Reduced nuclear stability, by making nuclear use more likely, would enhance the credibility of a nuclear-armed state's deterrent threat, thereby increasing the threat's expected cost. As expected cost increased, potential adversaries would become less willing to flout the threat and attack the nuclear-armed state. Conventional war would therefore become less likely, and conventional stability would rise.

By the same logic, increasing nuclear stability would decrease conventional stability, making conventional war more likely. As nuclear stability increased, the likelihood of nuclear use would decline. This would lower the credibility of the nuclear-armed state's deterrent threat, thereby reducing its expected cost. As the deterrent threat's expected cost declined, potential adversaries would become more willing to flout it, since doing so would be less likely to lead to catastrophe. As a result, the risk of conventional war would increase.

The stability–instability paradox shows that to be effective, nuclear deterrence requires a measure of nuclear instability. If the nuclear realm were entirely stable, the likelihood of nuclear use would be zero, states' nuclear deterrent threats would be wholly incredible and cost free, and other states would ignore them. It is only because of nuclear instability and the attendant possibility of escalation that nuclear threats become credible and potentially costly, and other states, which might otherwise consider challenging the status quo, respect those threats. Stability-instability logic thus suggests that, ironically, attaining a very high degree of nuclear stability might not make the world safer. Rather, doing so could make the world more dangerous by undercutting deterrence and making conventional conflict more likely.

Policy Challenges

The Cold War

The stability-instability paradox has created serious policy problems for nuclear-armed states since the early years of the nuclear era. The paradox first emerged during the cold war, as the Soviet Union reached nuclear parity with the United States in the mid-1950s. Parity meant that a nuclear conflict between the United States and the Soviets would be catastrophically costly not just for the Soviet Union, but for both sides. The United States could no longer hope that the Soviets' nuclear inferiority would limit the damage that the United States would suffer in the event of a nuclear exchange. This was especially problematic because the United States, which was conventionally inferior to the Soviet Union, used the threat of nuclear retaliation to extend deterrence to Western Europe against Soviet conventional aggression; in the event of a Soviet conventional invasion, the United States claimed that it would attack the Soviet Union with nuclear weapons. Increasing Soviet capabilities and the probability of massive mutual destruction, however, made nuclear use less likely and rendered the U.S. threat less credible. Reduced credibility, in turn, undermined deterrence and increased the likelihood that the Soviets would decide to invade. Increased stability at the nuclear level thus reduced stability at the conventional level in cold war Europe.

The United States addressed this problem by devising policies to lower nuclear stability and increase the likelihood of nuclear use in the event of a Soviet conventional attack. For example, the United States deployed ground forces and tactical nuclear weapons in Western

Europe to ensure that it would be directly engaged in any regional conflict, thereby triggering an escalatory process that could continue to the level of a strategic nuclear exchange. The United States also adopted limited nuclear options, which would expand U.S. targeting choices to include not just massive retaliation against the Soviet homeland, but also restricted attacks against discrete Soviet target sets. Because limited U.S. attacks would invite a similarly limited Soviet response, rather than all-out retaliation, U.S. strategists viewed their threat as more credible than the threat to launch a full-scale nuclear attack against the Soviet Union. Although such policies probably enhanced the credibility of U.S. nuclear threats and helped to protect Western Europe from conventional military attack, they increased the risk of nuclear catastrophe and did not wholly solve the problem of nuclear stability's deleterious effects on conventional stability. The stability-instability paradox and the problem of credibility continued to plague U. S. extended deterrence efforts throughout the cold war.

Nuclear South Asia

Following India's and Pakistan's acquisition of nuclear weapons in the late 1990s, problems related to the stability-instability paradox emerged in their security relationship. Indian conventional military improvements, as well as more proactive Indian conventional doctrine, have led Pakistan to rely more heavily on nuclear weapons for national defense. Pakistani strategists believe that they must threaten to use nuclear weapons first in the event of an Indian conventional attack, thereby convincing India that the expected costs of any contemplated aggression will outweigh the expected benefits.

Nuclear stability undermines Pakistani deterrent efforts, however. Both sides know that a nuclear exchange would be devastating, particularly in light of their growing and increasingly sophisticated nuclear arsenals. Nuclear conflict would be especially problematic for Pakistan, which, given its small size, could face existential danger in the event of significant Indian nuclear attacks. Nuclear use between the two adversaries is therefore viewed as being highly unlikely. This improbability of nuclear use lowers the expected cost of Pakistani deterrent threats, thereby making Indian conventional aggression cheaper and possibly more likely. As in cold war Europe, then, nuclear stability in South Asia undermines stability at the conventional level.

The Pakistanis have sought to address this problem in much the same way the United States did during the cold war—by lowering nuclear stability through the deployment of tactical nuclear weapons to be used against Indian forces on the battlefield rather than against Indian cities. Because Pakistani tactical nuclear weapons will be relatively small and employed against military targets, the threat to use them may be more believable than a threat to launch large-scale strikes against Indian civilian targets. And assuming that, at some point in a crisis, launch authority for the weapons is predelegated to field commanders, national leaders may be unable to prevent the escalation of an Indo-Pakistani conflict from the conventional to the nuclear level. The decision to escalate may instead lie in the hands of relatively junior military officers in the midst of combat, who may be more likely to use nuclear weapons than would their superiors in headquarters far from the battlefield. These developments could help to generate deterrence by making Pakistani nuclear threats more believable. But they also create considerable danger, increasing the likelihood that a conventional conflict between India and Pakistan will quickly escalate to the nuclear level. Given the massive damage that could occur in the event of an Indo-Pakistani nuclear exchange, this has major ramifications not just for India and Pakistan, but also for the region and the world.

The Inevitability of the Stability-Instability Paradox

The stability-instability paradox will continue to pose difficulties for nuclear-armed states in the future, regardless of their efforts to avoid it. The catastrophic danger of nuclear weapons makes threats to use them incredible, increasing nuclear stability and lowering the likelihood of nuclear conflict. This is particularly true as newly nuclear states' arsenals mature, becoming more sophisticated and deadly over time. Increased nuclear stability, however, erodes deterrence and makes conventional war more likely. Any attempt to counter this effect, enhance deterrence, and reduce the probability of conventional war increases the likelihood of nuclear use and invites disaster. There is no escape from this problem. For the inverse relationship between the likelihood of nuclear and conventional war, captured in the stability-instability paradox, is an essential characteristic of nuclear weapons. As long as nuclear weapons exist, the stability-instability paradox, and its attendant challenges, will remain with us.

See also [Defense Planning](#); [Deterrence and International Relations](#); [International Security](#); [Military Action](#); [Nuclear Taboo](#)

- stability
- paradox
- nuclear weapons
- deterrence
- deterrent threats
- weapons
- tactical nuclear weapon

S. Paul Kapur

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