

# Nuclear Deterrence, Strategic Stability, Missile Defense

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## **Abstract**

The article addresses a set of problems pertaining to nuclear deterrence, strategic stability, and missile defense. The author states that as a derivative of nuclear deterrence strategic stability can only be applied to military-strategic relations between Russia and the United States. This concept “does not work” in all other cases, including the multilateral format of relations. Nuclear deterrence is more universal and impacts, among other things, the decision-making process in relatively strong and weak nuclear states that oppose each other. The effectiveness of nuclear deterrence is not determined solely by the balance of opposing forces. No less important is the assessment by a potential aggressor of all the negative consequences of its decision to strike first, which creates the “self-deterrence” effect that outweighs even the aggressor’s absolute confidence in the complete military success of its nuclear attack. The author also insists that missile defense is undeservedly considered a “destabilizing” weapons system, because the

baseline scenario involving a massive exchange of nuclear strikes, which is used for estimating the effectiveness of nuclear deterrence and the level of strategic stability, is completely far-fetched.

**Keywords:** nuclear deterrence, strategic stability, nuclear weapons, first strike, targeting of nuclear weapons, missile defense.

## **RELATIONSHIP BETWEEN NUCLEAR DETERRENCE AND STRATEGIC STABILITY**

Nuclear deterrence and strategic stability are two inextricably connected concepts. Moreover, the latter is a direct product of the former, since the concept of strategic stability seemed to have “grown” out of intensive theoretical studies conducted immediately after the creation of the atomic bomb in the late 1940s, primarily in the United States. The purpose of those studies was to adapt the U.S. strategy and policy to the new military-political conditions of the “first” nuclear age, when the United States created a new, super destructive arsenal of atomic bombs, but soon lost its nuclear monopoly due to the Soviet Union’s progress in this area.

In these conditions American military-political circles gradually advanced the view that the main task of the U.S. armed forces should be preventing nuclear war rather than winning it. This vision was stated in 1946 by Bernard Brodie, a Yale University professor (later an employee of the RAND Corporation), who cautioned that the U.S. atomic monopoly would not last long and the United States should develop an effective strategy that would help avoid a global nuclear catastrophe. He believed that this could be done by creating such a nuclear force that would be able to deliver a disabling retaliatory nuclear strike on a “potential enemy” in the event of a nuclear attack on the United States (Brodie et al., 1946).

The principle of retaliatory strike was not immediately accepted by the U.S. military-political circles, especially since many U.S. leaders, including President Truman, believed that the American nuclear

monopoly would continue for a fairly long time. Nevertheless, when the United States lost it in 1949, and then became vulnerable to a Soviet nuclear missile attack, the question of adopting a new deterrence concept became particularly relevant.

Strategic stability became a sort of “derivative” of the nuclear deterrence concept. Experts came to the conclusion that deterrence could be considered effective (stable) if both sides in a nuclear confrontation (the USSR and the United States) had approximately the same ability to strike back. It is this awareness by the military-political leadership of the two countries, supported by the corresponding structure of the nuclear forces, that minimizes the risk of a deliberate attack in the hope of avoiding a retaliatory strike or dramatically impairing it. This effect manifests itself particularly vividly in a crisis by reducing incentives for delivering a first strike, which in the theory of strategic stability is called “crisis stability.” The other side of the problem is to reduce incentives for escalating an arms race. To achieve this goal (strengthening the “stability of the arms race”), various mechanisms can be used, the main of which is arms control, that is, international agreements severely restricting the quantitative and qualitative composition of the nuclear forces of the parties involved.

### **LIMITATIONS OF STRATEGIC STABILITY CONCEPT**

All of the above issues have been studied most thoroughly by numerous Russian and Western researchers of military-political problems. For this reason, there is no need to analyze the essence and content of strategic stability in detail again. However it should be noted that both the theory of nuclear deterrence and the theory of strategic stability were developed for relations between the USSR/Russia and the United States—the two great nuclear powers with approximately equal military-strategic capabilities. For a fairly long period of time, each of them considered the opponent a “potential adversary.” This is why, in most cases, the security problem is considered to be military, and directly dependent on the ability of opponents to strike back and maintain this force posture indefinitely long. This is precisely the essence and content of strategic stability as such.

Now it seems appropriate to ask whether the basic principles of the concept of strategic stability in relations between Russia and the United States can be applied to other countries. To answer this question, it is advisable to refer to some international documents directly related to the issue of strategic stability. On June 1, 1990, the presidents of the USSR and the United States signed the Soviet-United States Joint Statement on Future Negotiations on Nuclear and Space Arms and Further Enhancing Strategic Stability. The document said: “The objectives of these negotiations will be to reduce further the risk of outbreak of war, particularly nuclear war, and to ensure strategic stability, transparency and predictability through further stabilizing reductions in the strategic arsenals of both countries. This will be achieved by seeking agreements that improve survivability, remove incentives for a nuclear first strike and implement an appropriate relationship between strategic offenses and defenses” (Joint Statement, 1990).

This document states the most detailed understanding of strategic stability agreed by Russia and the United States, which includes improving the survivability of the parties’ strategic forces, eliminating incentives for a nuclear first strike, and emphasizing the need to take into account the relationship between strategic offensive and defensive weapons. There are many ambiguities in the proposed wording, of course; for example, it is not clear how exactly the relationship between strategic offensive and defensive weapons should be implemented in future agreements, and what is meant by “incentives for a nuclear first strike.” Nevertheless, the document reflects a common understanding of the essence and content of strategic stability.

As for other countries, it is completely impossible to imagine that a similar statement would be adopted for strategic relations between China and the United States, or between Russia and China. Naturally, if China builds up its strategic nuclear arsenal to the level of Russia and the United States, estimated effectiveness of nuclear deterrence in each of these “pairs” of states can suggest strategic stability. But in our opinion, this is far from enough for the parties to officially agree to accept this concept as the basis for their strategic relations. This is especially true of Russian-Chinese relations. Indeed, to make such a

decision, the parties will have to agree, albeit tacitly, that under certain conditions they would contemplate the consequences of an exchange of nuclear strikes between them, i.e., view each other as “potential adversaries.” It seems such consent would be absolutely unacceptable either for Russia or for China. As for the United States and China, in order to adopt such an agreement, the United States would have to recognize the PRC as an equal competitor in strategic terms, and the PRC would have to agree with the fact that under certain conditions it could be considered a “nuclear aggressor.” As for all other nuclear-armed states, both recognized and unrecognized, the possibility of following the basic provisions of the concept of strategic stability can be considered purely theoretically only in the India-Pakistan “pair,” albeit with many reservations. It is also clear that there can be no strategic stability between a nuclear state and a non-nuclear state, as well as in a multilateral format, even when trying to conclude a multilateral treaty on nuclear arms control (Savelyev, 2014).

The term ‘strategic stability’ can be used (and is often used) for characterizing strategic relations between any states and even groups of states. But this is a “different” kind of stability, the meaning and content of which is interpreted in a completely different way than its “classical” definition. It seems that the reason for that is the attractiveness of this term, a well-chosen combination of words, and a positive meaning. But, unfortunately, its frequent use in relation to various conditions often leads to misunderstandings and makes it difficult to find “common ground” in academic and political discourse. It is hard to disagree with American security researcher Michael Gerson, who says that “... strategic stability is—and has always been—a widely used concept without a common understanding. There is no single, universally accepted definition of stability, which factors contribute to and detract from it, or agreed upon metrics for how to measure it. Consequently, there are significant gaps in understanding in the United States and around the world about how nuclear-armed countries view and define the requirements of stability.”

In my opinion, it is worth adding that the concept of strategic stability is not universal, it was developed for, and applied solely to, strategic relations between Russia and the United States, and can hardly

serve as a basis for establishing predictable security relations with any other country. This applies to both Russia and the United States.

### **CONDITIONS FOR INVOKING STRATEGIC STABILITY CONCEPT**

There are several conditions when relations between the parties can be built on the principles of strategic stability. The most important of them is the political relations between these countries. They cannot be allies; otherwise these countries (Russia and the United States) would hardly rely on the effectiveness of nuclear deterrence in their relations and, as a result, on the strengthening of strategic stability as such. In other words, these countries admit that under certain conditions they can get the aforementioned “incentives for a nuclear first strike” with all the ensuing consequences. Such scenarios are impossible to imagine in allied relations, for example, between the United States and Great Britain or France, or between the latter two.

Another condition for following the principles of strategic stability is that the parties should have approximately equal strategic offensive capabilities. This condition stems directly from this concept and requires each of the named parties to rely in their national security policy and strategy on the effectiveness and inevitability of a retaliatory nuclear strike even in the event of a surprise massive attack from the adversary. But it is quite obvious that in strategic relations between a weak nuclear state and a strong nuclear state, only the strong party can count on a retaliatory strike. Therefore the main condition for strategic stability in relations between such states cannot be met, which means that there can be no relationship between them based on the concept of strategic stability.

There are still a number of significant, although not always mandatory, conditions for establishing and developing strategic relations on the basis of strategic stability. One of them is strategic nuclear arms control agreements. Such agreements can contribute quite effectively to strengthening both types of strategic stability: “crisis” and “arms race.” Crisis stability is strengthened by “stabilizing reductions in strategic arsenals” under agreements, as mentioned above. An arms race (at least quantitative) can be stopped or even reversed by specific terms of such agreements. This is exactly what has been happening

since the second half of the 1980s when, as a result of several treaties between the USSR/Russia and the United States, the two countries have reduced their strategic nuclear arsenals by more than 80 percent. In addition, strategic nuclear arms control agreements increase the predictability of strategic relations between the parties, and provide them with complete information on the current state, and quantitative and qualitative composition of their nuclear forces by establishing a strict verification mechanism, including onsite inspections.

### **NEGATIVE ASPECTS OF STRATEGIC STABILITY CONCEPT AND MISSILE DEFENSE PROBLEM**

Over years much has been said by the leaders of Russia and the United States, as well as experts and political commentators about the positive features of strategic stability. But few have addressed serious negative aspects of this concept. We will try to name some of them.

As has already been said, this concept applies specifically to strategic relations between two states: Russia and the United States. It can hardly serve as a basis for a reliable relationship in a multilateral format or even a trilateral format, if China is also included (Savelyev, 2014). Moreover, when abiding by this concept, the two great nuclear powers focus their attention, including relevant military programs, on bilateral relations, practically not taking into account the nuclear capabilities of third countries. As we know, repeated attempts by the USSR and then Russia to include such capabilities of U.S. allies (UK and France) in the balance of nuclear forces have proved abortive. Attempts to engage China in the nuclear arms control negotiations have also failed, because Beijing does not perceive the philosophy of nuclear deterrence and strategic stability the way the U.S. and Russian strategic culture does. As a result, the enthusiasm of the parties to take further steps in nuclear disarmament is gradually fading. Moreover, there is practically none of it left today.

Another negative side of the concept of strategic stability is that non-strategic nuclear weapons are left outside because they do not conform to its main provisions. When the effectiveness of a nuclear first strike or a retaliatory strike is estimated, non-strategic nuclear systems are not taken into account at all, or are considered quite relatively as having

only a slight impact on both deterrence and strategic stability as such. This is why these nuclear weapons are not mentioned in strategic arms limitation and reduction agreements. This follows, among other things, from the very name of such agreements, which almost always include the term 'strategic.' The only exception is the INF Treaty, which required complete elimination of intermediate-range ballistic missiles by the United States and Russia. But this is just an exception to the common approaches of the two countries to solving strategic stability problems, practiced since 1972. And the exception itself can be considered partial because by signing the INF Treaty, the USSR pursued precisely strategic goals in a bid to eliminate threats to its own strategic facilities.

The most important drawback of the concept of strategic stability is unrealistic scenarios involving an exchange of nuclear strikes, which underlie the entire structure of strategic relations between the two leading nuclear powers. In fact, with the appropriate calculations and strategic stability modeling, it is assumed that the parties will alternately deliver a surprise nuclear strike on the opponent's strategic offensive weapons, first acting as the "aggressor," and then as the "victim" of such aggression. If, as a result of such a hypothetical first strike, each party acting as a "victim" still retains the ability to deliver a crushing blow and inflict unacceptable ("predetermined") damage on the "aggressor," then nuclear deterrence is considered effective. As for strategic stability, it is considered stable if a similar result is obtained with various configurations of strategic offensive weapons of the parties, both existing at the time of consideration and future. Such new configurations may arise due to the fulfilment of obligations under the relevant agreements, or due to the modernization of the nuclear forces of each of the states.

The baseline scenario for assessing the level of strategic stability, which implies a surprise massive nuclear strike on the enemy with approximately equal capabilities, is absolutely far-fetched. Such a scenario is completely improbable in real life. Leaving aside the question of why the leader of a particular country may make such a suicidal decision, preparations for a nuclear first strike would require certain military-technical measures, which cannot go unnoticed by a potential victim of the aggression, especially if such a decision is made amid



deteriorating relations between the countries or an ongoing direct clash between them. It is clear that in this case each party will take measures to increase the survivability of its own nuclear forces by preparing to disperse or even dispersing heavy bombers, sending nuclear submarines out to sea, and taking other steps. All this will significantly enhance the ability to deliver a retaliatory strike and increase its hypothetical scale. Therefore, all scenarios based on a “surprise” massive U.S. attack on Russia or Russia’s attack against the United States should, in our opinion, be considered implausible and having nothing to do with reality.

The adoption of the concept of strategic stability also has a direct impact on the military programs of the parties, and seriously hampers nuclear disarmament. After all, it bolsters security mainly by strengthening the potential for a retaliatory strike, rather than by weakening and eliminating the potential for an attack, thereby setting the limit to strategic nuclear arms cuts by the two countries.

The most controversial provision in the concept of strategic stability is that it assesses extremely negatively the role of missile defense in ensuring national security. The baseline scenario behind this concept implies that a country with missile defense can use it to intercept the enemy’s retaliatory strike, thus getting an incentive for a preemptive strike. At the same time, the opposite side may get an even stronger incentive for a nuclear first strike since it cannot be sure that its response will be effective. If both sides have missile defense systems, the situation becomes even less stable because at a time of crisis each of them will seek to pre-empt a first strike, thus sharply increasing the risk of nuclear war.

Let us say again that this scenario is completely implausible and has nothing to do with reality, but there is one caveat: the leaders of the great nuclear powers that oppose each other should be reasonable and not inclined to make guaranteedly suicidal decisions. After all, the country subjected to a surprise massive nuclear attack will almost certainly strike back at the aggressor’s decision-making centers, i.e., the leadership that initiated the nuclear attack, since it is absolutely illogical to strike back at the empty ICBM silos, from which the missiles have already been launched.

In addition, hypothetical hopes that the missile defense system will be able to intercept the victim's retaliatory strike, already impaired by the preemptive attack, are also unfounded. No missile defense system can guarantee a 100 percent success rate. However such a guarantee is necessary in the case of strategic nuclear weapons because each ICBM or SLBM warhead hitting a target has a yield of several hundred kilotons. The consequences of such a strike can be catastrophic, especially if it hits the capital and, possibly, a number of other large administrative and industrial centers of the aggressor state. It should also be added that it is almost impossible to effectively protect the entire territory of a large state with a missile defense system for a number of reasons, including economic (financial) ones. In any case, an attempt to implement such a program could take decades. Therefore, the concerns of those who advocate the "traditional" approach to nuclear deterrence and strategic stability cannot be considered justified.

#### **DETERRENCE: STRONG VS. WEAK**

Let me stress once again that the concept of strategic stability only applies to strategic relations between two states—Russia and the United States. As for other countries with nuclear weapons, their relations can be and are, in fact, based, among other things, on nuclear deterrence. Many believe that such deterrence works both ways: by a strong state against a weak one, and vice versa. A country that has even a small nuclear arsenal can deter a major nuclear power from aggressive actions by threatening its vital interests, in particular, critical facilities on its territory. Nuclear forces are unlikely to be among them. Most likely these will be the capital of the state and key centers.

Let us take a look at the mechanism of nuclear deterrence used by a weak state against a strong one. First of all, we should note that, as in the case of the great nuclear powers, the phenomenon of nuclear deterrence occurs if several important conditions are met. One of them is a serious military-political confrontation between these states when the settlement of the conflict by political (or non-military) methods cannot be guaranteed. The second condition is that a weak state should have nuclear weapons delivery vehicles capable of reaching

the potential adversary's capital and vital centers. The third condition is the psychological state of the parties and their readiness to use nuclear weapons if they see no other way to settle the conflict.

It would seem senseless to seriously talk about a weak state's ability to pursue an effective deterrence policy with a small arsenal of nuclear weapons against a much more powerful adversary. But in our opinion this is not so. After all, nuclear deterrence is not a simple force ratio of the conflicting parties, according to which the strongest of them will win the war under any scenario, and can dictate its will to the opposite side, without even resorting to armed violence. Nuclear deterrence is primarily a psychological category, and its goal, as has already been mentioned above, is to prevent war, not win it. This can be done by showing a potential aggressor that even if it can achieve its goals, it will pay an exorbitant price for that. It is the presence of even a small nuclear arsenal that acts as a means of preventing an attack in the event of confrontation between a major nuclear power and a weak adversary.

From a purely military point of view, a small nuclear arsenal of the opposing side should not have a deterrent effect on a major nuclear power. This problem is "solved" by a preemptive strike on this nuclear arsenal in order to destroy it completely, which is quite likely if plans are based solely on mathematical models. But in reality, in order to make such a decision, it will be necessary to assess the entire range of consequences that this move may entail.

So, the aggressor, even more powerful than its potential victim, must have absolute guarantees that its preemptive strike will destroy all nuclear weapons of the opposing side. In the face of a disarming strike, the likely victim of aggression will, of course, take all measures to make sure that at least part of its weapons, albeit very small, retains the ability to strike back. Unable to protect its forces directly, it will most likely resort to all possible means of disguise, disinformation, decoying, and so on in order to retain the ability to deliver a retaliatory strike. In such a situation, a potential aggressor may still consider the use of nuclear rather than conventional weapons in order to assuredly destroy the adversary's nuclear forces. In other words, nuclear deterrence may "not work" in this case.

Whether or not nuclear deterrence will “work” depends entirely on the decision of the potential aggressor. But in our opinion it would be totally wrong to say that such a decision will be based solely on its ability to deliver a disarming strike. Even with a fully guaranteed success of a nuclear attack, deterrence will continue to work. But in this case, priority will be given not to the military potential of the opposing side, but to the aggressor’s assessment of a wide range of consequences—military, political, legal, and others—that will inevitably befall the state that delivered a nuclear first strike against a knowingly weak adversary. In our opinion, this phenomenon can be described as “self-deterrence.” This factor can be no less effective than the threat of a retaliatory strike. I would not make a bold assertion, but I would assume that it was “self-deterrence” that played an important role in dissuading the U.S. from using nuclear weapons against North Vietnam and now against North Korea, and the Soviet Union against using them during the war in Afghanistan. Both the USSR (Afghanistan) and the United States (Vietnam) decided that it would be better to withdraw their troops and actually admit their defeat than to use nuclear weapons in order to achieve military victory. Let me stress once again that this is just my assumption because there is no direct evidence and proof of this in open sources.

It should also be noted that most researches into nuclear deterrence and strategic stability, both in the USSR/Russia and abroad, do not touch on the “psychological” side of the matter at all, concentrating mainly on the “technological” aspects of the problem, such as the quantitative and qualitative composition of the strategic nuclear forces opposing each other, and individual factors (again of a “technological” nature) that, in their opinion, affect strategic stability (high-precision weapons, space weapons, etc.). Rare exceptions to this “rule” are the works of Thomas Schelling (1960; 1967), Albert Wohlstetter (1959); Albert Wohlstetter and Richard Brody (1987) and a few other researchers.

### **STABILIZING EFFECT OF MISSILE DEFENSE**

Going back to missile defense, we can hardly talk about its destabilizing effect under the deterrence scenario we have considered above. On the contrary, missile defense can have an additional deterrent effect. In

fact, in the above scenario implying a deterrent mechanism in relations between a strong country and a weak country, missile defense can have a positive effect on both sides. For a strong country, the adversary's missile defense will complicate preparations for a nuclear first strike and reduce the chances for destroying all of its nuclear weapons. For a weak opponent, the opposing missile defense will also sharply reduce hopes for the success of its offensive because its strike, quite minor in magnitude, can be effectively intercepted by the strong state's defenses. At the same time, an attempt, even a failed one, to strike first will unambiguously put the weak party in the position of a nuclear aggressor with all the ensuing consequences.

It would be totally wrong to assume that effective defenses of a strong state sort of give it a free hand in undertaking aggressive actions, that is, delivering a nuclear first strike and intercepting a retaliatory strike, if there is any. Let us stress once again that the nuclear deterrence effect is not a direct continuation of combat capabilities, or of the quantitative and qualitative structure of the opposing forces. This effect is stronger and much more complex, and is more psychological than military-technical in nature. As mentioned above, the party considering a nuclear first strike must think about the consequences it will inevitably face after this move and also about whether a military victory over the enemy can make up for these consequences, each of which will predictably be extremely negative.

Likewise, consequences can be no less negative for a country that seeks to obtain nuclear weapons, no matter how it justifies its pursuits. The presence of these weapons does not automatically strengthen the security of such a state. On the contrary, if mutual confrontation deepens, both states will seek to deliver a nuclear first strike (the strong party will target nuclear weapons, and the weak party will aim at the strong state's decision-making centers). Clearly, the presence of nuclear weapons in each state involved in a conflict can lead to irreversible consequences if one of them makes a rash decision. A defense system, including missile defense, can only slightly reduce the threat of such decisions, but it cannot rule it out completely.

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Unfortunately, some nuclear-free states believe that only the possession of nuclear weapons ensures real security. It must be admitted that the advocates of this point of view have certain arguments in support of their position, although in many cases these arguments are purely emotional. In reality, the choice is between solving the security problem by political means and following the path of North Korea, with all the ensuing consequences.

All of the above indicates that there are no clear answers to a number of questions concerning strategic stability, nuclear deterrence, and the nuclear status of states. All these problems are the subject of serious discussions and debates among experts in many countries. We have touched upon some of them just cursorily. An in-depth study of the entire range of security issues can undoubtedly be of not only theoretical, but also serious practical interest.

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