

Effectiveness of nuclear deterrence against Russia

Original article

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Abstract

Objectives: The objective is to answer three research, policy, and strategy questions: 1. Is and will be the NATO and US strategy of nuclear deterrence effective against Russia? 2. Can the strategy of nuclear deterrence as the supreme guarantee of the security of NATO have a lasting public acceptance in the member states? 3. Is it necessary to complement the NATO and US strategy of nuclear deterrence with another, also strong but different, guarantee of security?

Methods: Qualitative methodology is used. Official documents and scientific publications provide the basis for analysis.

Results: The answer to question 1 is mostly but not fully positive: Against Russia, the NATO and US strategy of nuclear deterrence probably has and will have high although not absolute effectiveness. Evaluated are five necessary conditions of effectiveness. Negative is the answer to question 2 if concerning Poland and other countries of the eastern flank of NATO that have little knowledge of and historical experience in nuclear arms and strategy: The strategy of nuclear deterrence based on the threat of nuclear retaliation against nuclear-armed nations will probably not gain a lasting public acceptance. Affirmative is the answer to question 3: The NATO and US strategy of nuclear deterrence requires a complementary strong security guarantee.

Conclusions: Scientific and technological progress will likely allow NATO to create a complementary guarantee by realizing the concept – which was unattainable in the past, including during the Cold War – of an impenetrable shield against nuclear weapon delivery means in airspace and outer space.

Introduction

The article asks three research questions – which are also policy and strategy questions – about nuclear weapons, the North Atlantic Treaty Organization, the United States of America, and Russia¹. A less or more preliminary hypothesis is next provided as an answer to each of the three questions. Question number one reads: Is and will be the NATO and US strategy of nuclear deterrence effective against Russia? This is the main question. It involves the security of the member states of the North Atlantic Alliance, including Poland (Kostrzewa-Zorbas 2015, pp. 114-119, 121-122). It does not directly concern the security of Ukraine and other countries that are not NATO member states and have no allied nuclear guarantee or their own nuclear forces. Indirectly, however, the main question involves Ukraine and all other nations of Europe and the world, because NATO is warning Russia against any use of nuclear weapons anywhere, also outside the North Atlantic area protected directly according to Articles 5 and 6 of the North Atlantic Treaty. The security of the North Atlantic area is necessary for the credibility of any geographically wider warnings.

Closely related to the first question and to each other are the second and third questions, respectively: Can the strategy of nuclear deterrence as the supreme guarantee of the security of NATO have a lasting public acceptance in the member states? Is it necessary to complement the NATO and US strategy of nuclear deterrence with another, also strong but different, guarantee of security?

¹ In this article, the author applies the knowledge and experience gained while studying nuclear weapons, strategy, and policy in Washington, DC, United States: in Georgetown University (National Security Studies, School of Foreign Service) and The Johns Hopkins University (Strategic Studies, School of Advanced International Studies). The topic of the author's Johns Hopkins University PhD dissertation, written and defended in under the supervision of Eliot A. Cohen and Zbigniew Brzezinski, was nuclear weapons, policy, and strategy in the world from World War II to the post-Cold War era. In the Johns Hopkins University Applied Physics Laboratory, the author conducted, for the US Strategic Command (USSTRATCOM), research on forecasts of nuclear wars. The article is partly based on the author's presentation at the scientific conference Dilemmas in Contemporary Security and Defence: Security of Central and Eastern Europe, Institute of Security and Defence, Faculty of Security, Logistics and Management, Military University of Technology in Warsaw, Poland, 25 May 2022.

Question 1: Is and will be the NATO and US strategy of nuclear deterrence effective against Russia?

In the beginning of the second stage of Russia's war on Ukraine that erupted on 24 February 2022 – and during the entire first stage that started in 2014 and included the internationally not recognized annexation of Crimea – the North Atlantic Treaty Organization maintained its 2010 Strategic Concept. Consequently, it was in force when Russia made the first nuclear threats to Ukraine, Europe, and NATO related to this war. Considering military strategy, the principal point of the document read: “The supreme guarantee of the security of the Allies is provided by the strategic nuclear forces of the Alliance, particularly those of the United States; the independent strategic nuclear forces of the United Kingdom and France, which have a deterrent role of their own, contribute to the overall deterrence and security of the Allies.” (North Atlantic Treaty Organization 2010, point 18). Beside nuclear deterrence – but lower in the order of importance – the 2010 NATO Strategic Concept put conventional deterrence and then defense – including ballistic missile defense – in the sense of defensive combat in case deterrence fails. The North Atlantic Alliance always puts deterrence above defense in this sense, and nuclear deterrence above conventional deterrence.

So remains the order of importance of elements of military strategy in the NATO 2022 Strategic Concept that was approved during the second stage of Russia's war on Ukraine and entered into force on 29 June 2022. The new Strategic Concept repeats the 2010 statement about the supreme guarantee of NATO's security but elsewhere makes changes which strengthen the message. Added are important excerpts from final documents of NATO summits since 2014 – after Russia began the first stage of its war against Ukraine – particularly of the 2016 Warsaw Summit. In the principal point, the contribution of British and French strategic nuclear forces to the security of the North Atlantic Alliance is now recognized as “significant,” while the separate centers of decision-making in London and Paris are now praised as valuable to NATO's deterrence strategy. Also added to this point is an information – the first ever in the history of published Strategic Concepts of the North Atlantic Alliance – on the existence and importance of the NATO Nuclear Sharing Programme in which American nuclear weapons are shared with selected allies. Many changes directly or indirectly involving nuclear arms, strategy, and policy appear in other points of the new document. Among other changes, the 2022 Strategic Concept expands the program of ballistic missile defense to transform it into a program of integrated air and missile defense covering therefore crewed and uncrewed aircraft, and cruise missiles – major kinds of actual or (considering drones) potential delivery

means, different from ballistic missiles, of nuclear bombs or warheads. The principal point of the new Strategic Concept reads:

The strategic nuclear forces of the Alliance, particularly those of the United States, are the supreme guarantee of the security of the Alliance. The independent strategic nuclear forces of the United Kingdom and France have a deterrent role of their own and contribute significantly to the overall security of the Alliance. These Allies' separate centres of decision-making contribute to deterrence by complicating the calculations of potential adversaries. NATO's nuclear deterrence posture also relies on the United States' nuclear weapons forward-deployed in Europe and the contributions of Allies concerned. National contributions of dual-capable aircraft to NATO's nuclear deterrence mission remain central to this effort." (North Atlantic Treaty Organization 2022, point 29)

Is the North Atlantic Alliance's reliance on nuclear deterrence as the supreme guarantee of security justified? Is it the best possible strategic choice?

There exists a strong empirical proof of effectiveness of nuclear deterrence – a proof provided by the history of the world since the invention of nuclear weapons: no nation possessing its own nuclear forces or a nuclear guarantee from an ally or allies has been the object of a full-scale regular armed attack on its internationally recognized territory. Irregular warfare, including attacks by terrorists, or by intelligence agencies or special forces of other countries operating in a covert way, were, are, and will likely be conducted on both classes of nations. Such attacks, however, do not pose clear existential threats. Neither do regular military attacks that happen against armed forces, civilian citizens, and material assets of nuclear-armed states or their allies outside the internationally recognized boundaries of all such states. The newest related – but clearly different – development is the transfer of regular conventional warfare by a victim of aggression into the territory of the nuclear-armed aggressor. After the outbreak of the second stage of Russia's war on Ukraine in 2022, Ukraine – exercising its inherent right of self-defense confirmed by the United Nations Charter – started to partly transfer hostilities into the internationally recognized territory of Russia (in addition to striking Russian forces in Crimea, Donbas, and other Ukrainian lands occupied by Russia). But Ukraine does so very cautiously, in small scale, and without official acknowledgment.

Other exceptions from the rule of inviolability of territories protected by nuclear deterrence are unessential or illusory. The United States did not successfully defend South Vietnam, an ally, from North Vietnam aided by the Eastern Bloc, but the war of that time was in half a domestic war and the South Vietnamese state was falling apart from within. Argentina managed, by the means of a regular attack, to temporarily capture the Falkland Islands, but this archipelago was subject of an Argentinian-British territorial dispute acknowledged by, among others, the United Nations. Military incidents between China (the People's Republic of China) and India, since both states acquired nuclear weapons, were in reality fist and stick fights, because the governments of both sides, fearing an escalation of the conflict, acted in harmony to prohibit their forces from using not only nuclear arms – even tactical ones – but also plain firearms.

However, history does not determine the present and the future. Therefore, the first and main question – Is and will be the NATO and US strategy of nuclear deterrence effective against Russia? – requires not only a historical but also a strategic analysis. There are five necessary conditions of effective nuclear deterrence. Two of them apply to the deterring side – in this case, the North Atlantic Alliance and the United States – and the remaining three to apply the side being deterred, that is, Russia (Freedman 2004, pp. 26-29, 75-79, 116-130, and others; Morgan 2003, pp. 42-79, 172-202, 238-284, and others).

Among the two conditions applying to the deterring side, the first and more important is as follows: The deterring side must have a technologically and politically credible capability to deal a second – that is, retaliatory – nuclear strike with delivery means having a high survivability of a first strike by the side being deterred. NATO meets this condition due mostly to the United States, but France and Great Britain also have a second-strike capability. All the three nations possess delivery systems regarded as the most survivable: nuclear-propulsion submarines able to launch ballistic missiles with nuclear warheads while submerged (equally high is the survivability in the case of cruise missiles if they are also launched from under the surface of the sea). Differently from the United States and France, Great Britain possess now no other delivery means, but it intends to add them to its arsenal for many reasons, including the second condition. The North Atlantic Alliance and the United States fulfill the first condition.

In the world, the second condition that applies to the deterring side is sometimes considered necessary and sometimes only optional. This condition can be defined as: The deterring side must – or may – have a technologically and politically credible capability of nuclear flexible response to a limited use of nuclear weapons by an adversary. Thanks to this, the deterring side

is not forced to automatically escalate a nuclear war. To the contrary, the deterring side retains the strategic initiative, including the choice of the level of escalation. Flexible response is possible but difficult to implement only with nuclear weapons dedicated and optimized for the strategic second strike. Less powerful weapons, called either substrategic or tactical, give more flexibility. Within NATO, the United States and France consider nuclear flexible response capability necessary and they both maintain it, mostly in the form of weapons carried by air forces. All French nuclear forces, including their components providing the flexible response capability, serve mainly national and not multinational purposes, but the importance of these forces to NATO is increasing. Even if combined, however, the substrategic and tactical weapons of France and – much more numerous – of the United States are quantitatively dwarfed by the enormous Russian arsenal of similar weapons. For this reason, the US and allied capability of flexible response to Russia is now questioned by some observers, including many Americans. An American strategic debate on this issue is continuing. In recent years, the United States already decreased the yield of warheads on some submarine-launched ballistic missiles (SLBM), and now considers developing for the US Navy a new cruise missile as a substrategic or tactical nuclear weapon (nuclear was the original Cold War era mission of the Tomahawk cruise missile which presently has only a conventional role). Anyway, a quantitative comparison to Russia is less essential than a qualitative one. Now the North Atlantic Alliance and the United States fulfill the second condition at least in large part.

The condition that apply to the side being deterred – the adversary – involve not its arsenal or technology, but its civilizational identity and affiliation, national (state) culture, strategic culture, and patterns of behavior in international relations. Assessment of the fulfilment of such conditions is especially prone to the danger of ethnocentric and symmetrical thinking: “they are (must be) just like us.” Russia itself is proud of not belonging to the West. The three conditions pertain to the value system, rationality of behavior, and risk propensity of the side being deterred.

First, the side being deterred must put its survival and the preservation of its essential resources at the very top of its value system. The value of human life and health is very low in Russia, but the Russian ruling and governing class has a strong will to survive and is also strongly attached to its wealth. Nationalism and imperialism of a nationalistic foundation, which dominate in Russia, together with the constant anxiety about dangers looming in all geographical directions, do not allow to sacrifice the state on the altar of any other idea or ideology.

Second, the decisions and actions of the side being deterred must be rational. Rationality is often confused with Western civilization: rational equals Western. In reality both rational and irrational actions can be undertaken in the framework of different civilizations and value systems. President Vladimir Putin acts irrationally from the point of view of the Russian Federation. However, the use of nuclear weapons against NATO and the United States, even if formally dependent on a single individual, requires in fact the participation of many people in the institutions of government and in the armed forces. Collective irrationality is possible but with a low likelihood.

Third, the side being deterred must have a limited propensity to take risks. In the two-player Game of Chicken, known from basic probability theory and used to analyze strategy (Freedman and Michaels, 2019, pp. 236-239, 446), the player of a higher risk propensity always wins because he or she can longer withstand a rising probability of death (if both players have an unlimited risk propensity, then both lose by simultaneously dying). As a rule, Russia's strategic culture allows to attack only weaker entities and to launch war only if victory is certain. Errors are still possible in the evaluation of the balance of power and Russia's own chances of success, as in the case of Afghanistan during the Soviet era (but the Soviet strategic culture only partly overlaps with the Russian one) and in the case of Ukraine in 2022. Moderate is the probability, however, of Russia wrongly evaluating NATO's nuclear forces and political will in case of a nuclear attack on the Alliance.

All of the three conditions applying to the side being deterred are fulfilled with different probabilities, always prevailing but without certainty. The analysis of the degree of fulfillment of all of the five conditions – including the two applying to the deterring side – leads to a conclusion that the strategy of nuclear deterrence, established by the NATO, including the United States, as the supreme guarantee of the security of Alliance, probably has and will have a high, although not absolute effectiveness against Russia. Presently NATO has no better alternative to nuclear deterrence but may create one in the future.

Question 2: Can the strategy of nuclear deterrence as the supreme guarantee of the security of NATO have a lasting public acceptance in the member states?

For the public opinion in many countries of the North Atlantic Alliance – especially in the countries of Central and Eastern Europe, including Poland and NATO's entire eastern flank – it is and will be difficult to permanently accept the strategy of nuclear deterrence with its low but perceivable risk of ineffectiveness, and with the necessity to launch a retaliatory strike. This difficulty stems from, among other sources, those countries' small historical experience,

knowledge, and awareness in the matters of nuclear weapons and strategy (an apparent program of nuclear sharing introduced by the Soviet Union in the Warsaw Pact in response to the real program of NATO, and the secret deployment of Soviet tactical nuclear weapons in Central Europe during the Cold War, are increasingly perceived as historical curiosities rather than strong experiences of the peoples of the area and therefore as factors influencing knowledge and conscience). Most difficult to gain a lasting public acceptance is the strategy of Mutual Assured Destruction (MAD) that exists between the United States – and NATO as a result – and Russia on the other side of the equation. MAD makes each side the hostage of the other side. Particularly in the former member states of the Eastern Bloc and the former Soviet republics in Europe, there are and will be few candidates for hostages.

Moreover, because of the second stage of Russia's war on Ukraine, a change of attitude toward Russia will begin in NATO, the entire West, and a major part of the rest of the world. No longer agreed to will be the privileged position of Russia in international relations based on the Russian strategic nuclear forces that are nominally the world's largest and that actually have a potential approximately equal to the American one for the purposes of MAD (this approximate symmetry excludes substrategic and tactical nuclear weapons). The West together with its allies and partners in different world regions will seek a way to substantially transform the present international order, inherited partly from the Cold War, in which Russia can intimidate – rather than deter – Europe, America and the whole world.

Question 3: Is it necessary to complement the NATO and US strategy of nuclear deterrence with another, also strong but different, guarantee of security?

Because nuclear deterrence based on the threat of retaliation – including mutual deterrence founded on an equilibrium of forces in the form of MAD – seems uncertain and insufficient as the supreme guarantee of the security of NATO, and because such deterrence has little chance of being permanently and universally accepted by the citizens of many member states, the strategy of nuclear deterrence requires a complementary, new, and less risky guarantee of security against dangers posed by Russia and other unfriendly nations possessing nuclear weapons today or in the future. Another important rationale for this requirement is the forthcoming change of the attitude of a large section of the world that no longer tolerates being subject to nuclear intimidation by a privileged Russia.

A new and better version of Strategic Defense Initiative (SDI) can become the complementary security guarantee. The original SDI proved to be unattainable in its era, but during forty years since US President Ronald Reagan announced its beginning on 23 March

1983, science and technology achieved a great progress (Freedman and Michaels, 2019, pp. 517-522). This continually accelerating progress and development, in which the West together with its global allies and partners well outruns Russia, would probably allow the realization of the concept of full defense (shield) against all nuclear weapons delivery means moving through airspace or outer space. A possible future shield should be even more impenetrable than in Cold War specifications – it should protect against not only ballistic missiles but also cruise missiles, crewed aircraft, and drones. NATO and the United States already have in Europe, and on the Atlantic and Pacific, anti-missile shields (including the anti-missile base at Redzikowo in Poland's Pomerania) of limited capabilities. They consist only of interceptor missiles without other technologies, and they are designed for defense against ballistic missiles not of Russia but of North Korea and potentially other states – like Iran – possessing small nuclear arsenals, quantitative and qualitative inferior to the Russian one. The West assures Russia that the existing shields are not designed to destabilize MAD, that is, to lower Russia's capability of destroying Western countries. If created, a complete shield would deprive Russia of exactly this capability.

The 2010 NATO Strategic Concept called ballistic missile defense a field of the desired cooperation with Russia. Omitted were other nuclear weapon delivery means. As indicated by the context, the then intended ballistic missile defense was directed not toward Russia but toward other countries considered in 2010 the main adversaries of NATO (North Atlantic Treaty Organization 2010, points 19, 34). The new Strategic Concept of 2022 – approved in response to Russia's war on Ukraine, Russian nuclear threats against the West, and the attempt by Russia to overthrow fundamental rules of international law – substantially changes NATO's attitude. The new document recognizes „strengthened integrated air and missile defence” as an inseparable element of deterrence and defense against any adversary of the Alliance (North Atlantic Treaty Organization 2022, point 18). On the conceptual level, the process of complementing deterrence – also toward Russia – with a defensive shield had already started.

Conclusions

The answer to the research, policy, and strategy question number one – Is and will be the NATO and US strategy of nuclear deterrence effective against Russia? – appears as mostly but not fully positive: Against Russia, the NATO and US strategy of nuclear deterrence probably has and will have high although not absolute effectiveness. Negative is the answer to question number two – Can the strategy of nuclear deterrence as the supreme guarantee of the security

of NATO have a lasting public acceptance in the member states? – if concerning these member states, including Poland and the whole eastern flank of the North Atlantic Alliance, that have little knowledge of and historical experience in nuclear arms and strategy: The strategy of nuclear deterrence based on the threat of nuclear retaliation against nuclear-armed nations will probably not gain a lasting public acceptance.

In relation to the answers to questions number one and two, the answer to question number three – Is it necessary to complement the NATO and US strategy of nuclear deterrence with another, also strong but different, guarantee of security? – is affirmative: The NATO and US strategy of nuclear deterrence requires a complementary strong security guarantee. Technological progress provides an opportunity. Emerging technologies will likely make such a guarantee possible by allowing NATO to implement the concept – which was unattainable in the past, including during the Cold War – of a full defense (an impenetrable shield) against nuclear weapon delivery means in airspace and outer space.

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