



First Nuclear Lessons from the War in Ukraine

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► Key Takeaways

- The invasion of Ukraine by Russia came with strong nuclear signaling from Moscow. Facing this aggressive rhetoric, the Western nuclear powers, including France, refused escalation in the nuclear realm and produced a moderate nuclear signaling.
- The Russian nuclear doctrine has evolved since the end of the Cold War and more restrictive conditions about the use of nuclear weapons have been adopted. Nevertheless, some ambiguity has been preserved and the hypothetical use of a non-strategic nuclear weapon on the battlefield should not be excluded.
- The consequences of this war on the international nuclear balance will be lasting, especially regarding the arms control treaties between the U.S. and Russia.
- U.S. extended deterrence in Eastern Europe could also be questioned by countries now convinced that only the possession of a nuclear weapon can deter another nuclear power, thus having consequences on the non-proliferation regime.

Introduction

The invasion of Ukraine by Russian forces on February 24th displays undeniable nuclear attributes. Strategic signaling, nuclear forces placed on alert or a change of posture, definition of Russian “existential” interests or of the perimeter of the American extended deterrent, considerations relating to tactical and/or dual-capacity nuclear weapons, escalation and de-escalation—all these themes specific to nuclear strategy have resurfaced in public debates with a persistence that has not been seen since the end of the Cold War. For Western European public opinion, which had been ensconced in an intellectual comfort zone convinced that the benefits of peace, respect for international norms and human rights were widely shared, the aggressive behavior of President Putin’s Russia constitutes a rude awakening. It is time to re-learn the strategic grammar of confrontation between great nuclear powers, and perhaps to invent new rules. The purpose of this text is to analyze the initial lessons of this conflict, with regard to the balance of forces between nuclear powers. It will first present the signaling used by the protagonists, before analyzing the particular point relating to the possible use of nuclear weapons, and finally looking at some longer-term consequences in this specific field.

Which Signaling for Which Strategies?

The 2008 war against Georgia and the 2014 invasion of Ukraine, during which President Putin was ready to put Russian nuclear forces on alert, had already sent a message about Russia’s desire to rebuild its sphere of influence. Meanwhile, Moscow’s strategic signaling in the current war began as early as Fall 2021, with the assembly of invasion forces on the one hand and, on the other, the announcement on December 17th, 2021, of Russian demands: e.g. the end of North Atlantic Treaty Organization (NATO) military activities in Eastern Europe, the withdrawal of U.S. nuclear weapons from Europe and a veto on a possible future of Ukrainian membership in NATO.

This signaling clearly took on a nuclear dimension at the joint press conference following the meeting between Presidents Macron and Putin on February 7th, 2022, during which the Russian president recalled that, while NATO and Russia did not have the same military potential, the latter possessed nuclear weapons superior to those of other countries. A further step was taken on February 19th during the Russian strategic forces exercise “Grom 2022”, conducted under Putin’s direct supervision and in the presence of Belarusian President Lukashenko. The annual exercise included the launch of a *Yars 24* intercontinental ballistic missile (ICBM), a *Sineva* strategic submarine-launched ballistic missile (SLBM) from a *Delta 4* class nuclear-powered ballistic missile submarine (SSBN) and a *Kinzhal* hypersonic aero-ballistic missile, as well as several *Kalibr* and *Zircon* cruise missiles. Putin’s speech on February 21st—denying Ukraine’s sovereignty by recalling its historical ties with Russia and thus justifying the start of the “special military operation”

three days later, followed by the announcement on February 27th that Russian strategic forces¹ had been placed on alert which marked an initial spike in Russia's strategy of aggressive nuclear sanctuarization of Ukraine. A new spike occurred on April 27th with Putin's speech to the Russian Parliament in which he stated that "if someone intends to intervene on what is happening from the outside and creates unacceptable strategic threats for us, then they should know that our response [...] will be swift, lightning fast".² The announcement on June 25th of the intent by Russia to deliver *Iskander* missile systems to Belarus was again a new step in nuclear signaling.³

Aggressive sanctuarization refers to "the idea that an actor could take advantage of the protection offered by its nuclear arsenal to gain relative power on the scale of a region by weakening its neighbors, or even by attacking them directly".⁴ All the signaling we have mentioned—preceding and then concomitant with the invasion of Ukraine, and supported by some less visible signals, such as the use in or near the Ukrainian theater of missiles with dual conventional and nuclear capabilities, like the *Iskander* or *Kinzhal*—clearly show that President Putin is implementing this type of strategy.

Faced with this situation, the three Western nuclear powers (P3) have clearly chosen a strategy of refusing nuclear escalation or even de-escalating. This orientation had been adopted even before the beginning of the "special military operation", with the announcement of the withdrawal of U.S. and British military instructors present in Ukraine since 2015, in order to avoid any risk of confrontation between troops belonging to opposing nuclear powers. President Biden himself had announced, on several occasions before the start of the invasion⁵ and then after it had begun,⁶ his refusal to deploy U.S. troops in Ukraine, while renewing his commitment to NATO allies by sending 7,000 additional troops,⁷ to Poland and Romania in particular. The message sent was therefore

“If someone intends to [...] create unacceptable threats for us, then they should know that our response [...] will be swift, lightning fast.”

1. This was in fact a modification of the alert status of the nuclear forces, which are always on alert, generally defined as a number of nuclear weapons available for employment with an associated response time.

2. "Poutine promet une riposte 'rapide' en cas d'intervention extérieure en Ukraine", *L'OBS*, April 27, 2022.

3. Press release about the Meeting with President of Belarus Alexander Lukashenko, Russian Presidency, June 25, 2022, available at: en.kremlin.ru.

4. C. Brustlein, "À l'ombre de la dissuasion : la sanctuarisation agressive," *Diplomatie*, Les grands dossiers, No. 17, 2013.

5. J. Mason and V. Soldatkin, "Biden Says U.S. Will Not Put Troops in Ukraine, as Tensions with Russia Ease", Reuters, December 9, 2021, available at: www.reuters.com; G. Quay, "Biden Says No U.S. or NATO Troops Will Be Sent to Ukraine if Russia Invades", *Yahoo News*, January 25, 2022, available at: <https://news.yahoo.com>; A. Kavi, "Biden Warns U.S. Won't Send Troops to Rescue Americans in Ukraine", *The New York Times*, February 10, 2022.

6. B. Singman, "White House Insists US Troops Not Going to Ukraine After Biden Comments in Poland", *Fox News*, March 25, 2022, available at: www.foxnews.com; "White House: Biden Still Does not Intend to Send Troops to Ukraine", *Teller Report*, April 19, 2022, available at: www.tellerreport.com.

7. N. Carvajal and M. Callahan, "Pentagon Orders Deployment of 7,000 US Troops to Europe, Defense Official Says", *CNN*, February 24, 2022, available at: <https://edition.cnn.com>.

clearly a refusal of any direct confrontation between Russians and Americans, and therefore a refusal of any recourse to extreme measures, particularly nuclear. This signaling was confirmed by the announcement of the temporary delay of a test launch of a *Minuteman* ICBM from Vandenberg Space Force Base in California.⁸ The launch was subsequently cancelled.⁹ The U.S. resumed standard nuclear signaling on June 17th with the announcement by US Strategic Command of the launch of four Trident II missiles from an Ohio-class ballistic submarine off the coast of California.¹⁰

Meanwhile France has adopted a clear position of refusing nuclear escalation, while discreetly strengthening its operational posture and maintaining standard political and technical signaling. Thus, on February 24th, Foreign Minister Jean-Yves Le Drian recalled in a televised interview that “the Atlantic Alliance is a nuclear alliance”,¹¹ a statement that drew all the more attention outside France because it came from a French minister, thus displaying French nuclear solidarity with its allies. Similarly, the technical test firing of an ASMPA (upgraded medium-range air-to-ground missile) on March 23rd, carried out as part of the missile’s mid-life upgrade, had been planned for a long time. This sent a signal

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of the political will to maintain the technical credibility of the French airborne deterrent, regardless of the current crisis. As for the signaling sent by the submarine component of its deterrence, it should be noted that the increase in the number of French SSBNs at sea is not in itself exceptional, and it is common for at least two SSBNs to be at sea simultaneously. The timing of increased activity of French SSBNs and their support base cannot, however, be a simple

coincidence, and this probable change in operational posture, reported by a journalist from a regional daily,¹² has never been confirmed by an official source, thus reflecting the desire to avoid any verbal and political escalation with nuclear implications.

Finally, the United Kingdom, which has been very active in providing political support and sending arms to Ukraine, has stood out by the absence of any nuclear signal. Should this be seen as political reluctance to tackle this non-consensual subject among the British¹³ or as the lack of flexibility in their nuclear posture, with the difficulty of keeping

8. P. Stewart and I. Ali, “U.S. Delays ICBM Test-launch in Bid to De-escalate Russia Nuclear Tensions”, Reuters, March 2, 2022, available at: www.reuters.com.

9. P. Stewart and I. Ali, “U.S. Cancels ICBM Test Due to Russia Nuclear Tensions”, Reuters, April 2, 2022, available at: www.reuters.com.

10. Tweet by the US Strategic Command, June 17, 2022, available at: twitter.com

11. See the replay, available at: www.tf1info.fr.

12. S. Jézéquel, “Les sous-marinières de l’Ile-Longue en alerte maximale”, *Le Télégramme*, March 1, 2022.

13. “The British Debate Rarely Rises Above the Old Binaries: Should We Still Have the Bomb, and, as PM, Would You Push the Button?” in: M. Harries, “Is the UK capable of Maintaining Its Nuclear Arsenal?”, *Prospect*, April 16, 2022, available at: www.prospectmagazine.co.uk.

one SSBN at sea at all times? These differences in reaction between the P3s, in phase regarding the need not to respond to the Russian escalation, may have given some observers the image of a lack of cohesion on this subject. It can also be interpreted as the added value of having three nuclear decision-making centers within the Alliance, each following a slightly different game plan, complicating the possible calculations of the adversary.

Ultimately, following the various Russian nuclear escalation signals, a verbal de-escalation was noted, with the declaration of Vice-President Medvedev¹⁴ on March 26th, 2022, recalling the four conditions (listed below) under which Russia could employ nuclear weapons. This was followed by Kremlin spokesman Dmitry Peskov's statement on March 28th that Russia did not consider the use of nuclear weapons in Ukraine as an option,¹⁵ and Foreign Minister Sergei Lavrov's statement on April 19th rejecting the possible use of nuclear weapons by Russia.¹⁶

Use of Tactical Nuclear Weapons?

With the start of the Russian invasion of Ukraine and the aggressive signaling of February 27th, speculation arose about Russia's possible use of tactical or "non-strategic" nuclear weapons.¹⁷ The high media profile of these declarations and this employment hypothesis caused a certain amount of emotion among Western populations, whose understanding of nuclear reality has diminished since the Cold War.

Since 1991, two essential roles for the Russian deterrence can be identified¹⁸ in the different doctrines:

- ▀ to ensure a global nuclear deterrence aimed at deterring any nuclear attack against Russia;
- ▀ deterring a large-scale conventional attack, if necessary in a regional conflict.

14. "Several Grounds for Russia to Use Nuclear Weapons, Says Russia's Former President Medvedev", *The Economic Times*, March 26, 2022, available at: <https://economictimes.indiatimes.com>.

15. B. Cole, "Russia Finally Rules Out Using Nuclear Weapons Over Ukraine War", *Newsweek*, March 29, 2022, available at: www.newsweek.com.

16. "Russia Is Against Use of Nuclear Bombs in Ukraine, Lavrov Says", *Bloomberg*, April 19, 2022, available at: www.bloomberg.com.

17. While strategic and non-strategic nuclear weapons can sometimes be similar in power and range, the main difference is that a strategic weapon is used to maintain deterrence, while a non-strategic weapon can be used on the battlefield to achieve a tactical objective. From the first decades of the nuclear age, therefore, strategic weapons were aimed at the heart of states and were delivered by long-range systems (bombers, missiles), in contrast to battlefield weapons (e.g., nuclear artillery, landmines, torpedoes or depth charges, anti-aircraft missiles). The nuclear arms limitation and reduction treaties between the United States and the Soviet Union, and later Russia, identify strategic nuclear weapons as the subject of the treaties, while the others, not covered by the treaties, are classified as non-strategic nuclear weapons. This is the definition that will be used in the rest of this text. See C. Brustlein, "Guerre nucléaire limitée : un renouveau stratégique", *Focus stratégique*, No. 77, Ifri, November 2017.

18. D. Adamsky, "Cross Domain Coercion: The Current Russian Art of Strategy", *Proliferation Papers*, No. 54, Ifri, November 2015, pp. 13.

The fear of Russian use of non-strategic nuclear weapons is clearly based on the latter role, its modifications since 1991 and its ambiguities. Several Russian military doctrines—in 1993, 2000, 2010 and 2014—have contained declaratory elements concerning the use of nuclear weapons. The first, in 1993, broke with the Soviet no-first-use doctrine, which had been in place until then, even though it was not considered credible by the West. It assigned to the nuclear forces the role of repelling any attack on Russia, including conventional ones when supported by a nuclear alliance—i.e. NATO.¹⁹ The 2000 doctrine gave the Russian nuclear forces the role of deterring any attack by nuclear weapons or weapons of mass destruction, but also any large-scale conventional attack leading to “situations critical to Russia’s national security”.²⁰ The 2010 doctrine introduced more restrictive conditions for the use of nuclear weapons in the event of a conventional attack, i.e. only in the event of “a threat to the existence of the Russian Federation”.²¹ The 2014 doctrine adopted the same terminology, but presented a new concept of deterrence, featuring a nuclear and a non-nuclear component.²² This new 2014 doctrine refers to “informational, non-nuclear and nuclear resources for the purpose of coercing the adversary”.²³ Finally, in 2020, a decree specifically on nuclear deterrence²⁴ again specified the doctrine, including the four cases that could lead to the use of Russian atomic weapons:

- ▀ reliable information on the launch of ballistic missiles against Russian territory or its allies;
- ▀ use of nuclear weapons or weapons of mass destruction against Russia or its allies;
- ▀ attack by an adversary on critical government or military sites, the destruction of which could compromise Russia’s nuclear response;
- ▀ aggression with conventional weapons against Russia that could jeopardize its existence.

This brief study of the evolving doctrines clearly reveals two periods. The first, in the years 1990-2000, during which Russia—aware of the conventional superiority of Western forces, and especially the United States, as demonstrated during the first Gulf War and in operations in the Balkans, particularly the Kosovo campaign—relied on its nuclear arsenal, especially its non-strategic weapons, to compensate for its conventional

19. “The Basic Provision of the Military Doctrine of the Russian Federation”, approved by the Russian Security Council on November 2, 2013.

20. “Russia’s Military Doctrine”, approved April 21, 2000 (accessed at www.armscontrol.org).

21. “The Military Doctrine of the Russian Federation”, approved by presidential decree on February 5, 2010.

22. “The Military Doctrine of the Russian Federation”, approved by presidential decree on December 25, 2014.

23. D. Adamsky, “Cross Domain Coercion: The Current Russian Art of Strategy”, *op. cit.*, pp. 37.

24. “Basic Principles of State Policy of the Russian Federation on Nuclear Deterrence”, approved June 2, 2020.

inferiority.²⁵ The threshold for the use of nuclear weapons was then considered to be low, even in a regional conflict, as illustrated by the phrase “situations critical to national security” in the 2000 doctrine.

The second period started in 2010, when the Russian forces launched their modernization effort and the official doctrine acknowledged that the threshold for the use of nuclear weapons in the event of a conventional attack had been raised to situations posing a “threat to the existence of the Russian Federation”. This situation was reinforced in 2014, with the inclusion of a non-nuclear deterrence following the commissioning of new conventional strike capabilities (*Iskander* nuclear-capable surface-to-surface missiles, and Kh101 air-launched and *Kalibr* sea-launched cruise missiles). This marked the adoption of the “cross domain coercion strategy”, to use Dmitry Adamsky’s expression.²⁶

All in all, in view of these public documents and the statements mentioned above, the reliance of Russian armed forces on non-strategic nuclear weapons in early

2022, especially in a regional conflict, was substantially less than in the twenty years following the dissolution of the USSR. At this point in time, therefore, the use of this type of weapon in the conflict in Ukraine seems unlikely, or very unlikely. The use of missiles with conventional warheads, but with dual capability, such as the *Iskander* or the *Kinzhal* aero-ballistic missile, or Putin’s declarations on the occasion of the first launch of a *Sarmat* ICBM on April 20th, are intended more to impress public opinion—whether Western or Russian—than to serve as a signal of a change in the nature of the conflict. This is the informational side of trans-domain coercion.

However, there is no guarantee that the use of a non-strategic nuclear weapon is excluded. Russia’s possession of approximately 2,000 non-strategic nuclear weapons, along with the possibility of a substantial difference between publicly disseminated doctrines and classified material, or the fact that recent declarations of de-escalation have been made at levels lower than President Putin, mean that we must seriously consider the hypothesis of a nuclear strike in Ukraine and study the possible options in such an eventuality. The prevailing option of refusing a confrontation between NATO forces and Russian troops would then probably have to be revised (as would the use of chemical or biological weapons on a large scale).

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25. For an insight into the debates in Russia concerning the compensation of conventional inferiority by nuclear weapons, read: K. Ven Bruusgaard, “Russian Nuclear Strategy and Conventional Inferiority”, *Journal of Strategic Studies*, Vol. 44, No. 1, 2021, pp. 3-35.

26. D. Adamsky, “Cross Domain Coercion: The Current Russian Art of Strategy”, *op. cit.*

There would be no question of responding with nuclear weapons, which would be contrary to the signals sent indicating that Ukraine is not covered by the extended deterrence of the United States or the Alliance, nor by that of France. It would also be in

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conflict with the French doctrine of refusing nuclear war, a commitment renewed at the P5 level in January 2022.²⁷ It would rather be more pertinent to react against Russian interests in common areas (maritime, space, cyber), but also to consider targeted conventional strikes on military objectives other than nuclear infrastructure. France clearly has a duty to study conventional escalation options vis-à-vis a nuclear power implementing a policy of aggressive

sanctuarization, as Russia is currently doing in Ukraine, and which other powers, particularly in Asia, could be tempted to follow. France's freedom of action due to the possession of an independent nuclear deterrent should enable it to take this step. It is not a question of substituting conventional options for nuclear deterrence, but rather of acquiring complementary options to cover cases where the President of the Republic does not consider that vital interests are at stake, but where a response on a scale greater than that of economic sanctions would nevertheless be necessary.

Impacts on Global Nuclear Balances

Finally, the Russian invasion of Ukraine and the attendant nuclear intimidation have already had or will potentially have significant consequences on certain nuclear balances at the global level. Some of these are identified below, without further elaboration:

- In Europe and within the Alliance, one of the first consequences was Germany's confirmation of nuclear sharing agreements which took concrete form with the order of the only B61-12 bomb-qualified aircraft, namely the F-35, from the United States. Another could be the return of U.S. nuclear weapons to the UK.²⁸ Furthermore, the prospect of the enlargement of NATO, a nuclear alliance, to include Finland and Sweden opens the door to a significant shift in the European nuclear landscape.²⁹ This is a result of the change in the Belarusian constitution in February 2022 allowing Russian nuclear weapons to be based on its territory.

27. Joint Declaration of the Heads of State and Government to Prevent Nuclear War and Avoid Arms Races, January 3, 2022 (accessed at [Elysee.fr](https://elysee.fr)).

28. H. Kristensen, "Lakenheath Air Base Added to Nuclear Weapons Storage Site Upgrades", *Federation of American Scientists*, April 11, 2022, available at: <https://fas.org>.

29. However, it is highly unlikely that this will result in the stationing of nuclear weapons in these countries.

- Another major consequence is the changing perception of citizens in Central and Eastern Europe regarding their countries' possession of nuclear weapons. A recent poll in Romania, Poland, Lithuania, Latvia and Estonia³⁰ indicated that significant segments of public opinion in these States would be in favor of their countries acquiring nuclear weapons, particularly in Poland, where almost two-thirds of the population support such a development. This represents a challenge for non-proliferation policies, but also for the credibility of the extended American deterrence in Europe.
- The argument that Ukraine could have defended itself against Russia if it had retained the Soviet nuclear weapons stored on its territory during the Cold War has also found an audience in Asia and the Middle East, particularly in the Gulf States, which could fuel the proliferation ambitions of some States. The subject is likely to be discussed at the Non-Proliferation Treaty Review Conference scheduled for the summer of 2022, which will be crucial for the future of the non-proliferation regime.
- The Russian-American nuclear relationship, the keystone of all international multilateral and bilateral nuclear treaties, will inevitably suffer a setback.³¹ Given the Russian exactions in Ukraine, described by President Biden as “genocide”,³² it seems difficult to imagine new talks between the two presidents to launch discussions that could lead to a new nuclear arms reduction agreement after 2026, when the current New START treaty, extended in 2021, expires.
- The nuclear intimidation used by Russia to carry out its invasion without fear of direct confrontation with the West is being carefully observed in Asia by the two nuclear powers that are waiting for the subversion of the current international order: China and North Korea. Without going into the conclusions that these States could draw at this stage, the significant growth of China's nuclear arsenal and the development of North Korea's ballistic arsenal, perhaps accompanied by a resumption of nuclear testing, can only be a source of concern.

30. L. Sukin and A. Lanoszka, “Poll: Russia's Nuclear Saber-rattling Is Rattling Neighbors' Nerves”, *Bulletin of the Atomic Scientists*, April 15, 2022, available at: <https://thebulletin.org>.

31. J. Mecklin, “Siegfried Hecker: Putin Has Destroyed the World Nuclear Order. How Should the Democracies Respond?”, *Bulletin of the Atomic Scientists*, April 21, 2022, available at: <https://thebulletin.org>.

32. K. Liptak, “Biden Calls Atrocities in Ukraine a Genocide for the First Time”, *CNN*, April 12, 2022, available at: <https://edition.cnn.com>.

Conclusion

The crisis triggered by the Russian invasion of Ukraine and Russia's aggressive sanctuarization posture clearly concludes a period that began nearly 60 years ago, following the Cuban crisis. During this era, the two nuclear superpowers showed extreme caution. Their main objective was to maintain stability on both sides of the Iron Curtain during the Cold War, and thereafter to cooperate in reducing nuclear risks following the break-up of the USSR and in cutting the number of nuclear weapons.

The world has now entered what Thérèse Delpech called a new “era of strategic piracy, [...] defined as absence of rules and deception”.³³ Insofar as Ukraine was not considered by any of the Western nuclear powers as a vital interest, whereas Russia defined it very early on as an existential interest, this invasion cannot be considered as a failure of these States' nuclear deterrents. The exactions committed by Russian troops and the possible use of a nuclear weapon, however unlikely, in this conflict nevertheless strongly suggests a need for these doctrines to be supplemented to respond to this type of strategic piracy, which is underway today in Europe and which may be copied tomorrow in Asia. The concept of “integrated deterrence”, which will be one of the pillars of the future U.S. National Defense Strategy (and to which the Nuclear Posture Review will be annexed),³⁴ will satisfy this need. France will have to complement its strategy by establishing clearer linkages between its nuclear deterrence and its conventional systems, probably by reinforcing the latter with more powerful and penetrating conventional strike capabilities than those it currently possesses.

33. T. Delpech, *Nuclear Deterrence in the 21st Century: Lessons from the Cold War for a New Era of Strategic Piracy*, RAND Corporation, 2012.

34. As of the date of this publication, the NPR has not yet been released. The fact sheet published at the time of the presentation to Congress of this document on March 28th, 2022, presents “integrated deterrence” as follows: “Integrated deterrence involves the development and combination of forces for maximum effect, clearly linking areas of struggle, theaters, the spectrum of conflict, other tools of American power, especially the unparalleled network of alliances and partnerships. Integrated deterrence is enabled by credible combat forces, underpinned by a guaranteed, secure, and effective nuclear deterrence.”

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