Classic Debate Camp
LD Brief

January - February 2026

Resolved: The possession of nuclear weapons is immoral

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A Message From the Authors

First things first – to those of you reading this brief, congrats on making it to the back half of your season! We know that the next two months come hand in hand with a lot of pressure, as the January/February topic is used for the state qualifier, state tournament, and national qualifier of many of your circuits!

We are incredibly excited to be sharing this brief with our campers and any other LD competitors who happen to come across it. Whether you are a novice or a second-semester senior, we are hopeful that this brief will be able to lend some measure of support to you in your preparation! Classic Debate Camp believes in accessibility and equity in debate resources, and we have developed this brief with those values in mind. Our aim in writing this brief is to provide you with three critical analyses of this topic from accomplished and seasoned NSDA alumni, as well as some high-quality evidence in key argument categories on both sides of the topic. We are hopeful that this brief will inspire each of you to dig deeper, consider the complex implications of this topic, and develop well-evidenced and unique cases. We sincerely hope that this brief will be helpful to you, and we welcome any feedback you may have!

Feel free to reach out to us with any questions about any of the materials in this brief! Our contact information is listed below:

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Best of Luck!

Topic Analysis by Tristan Williams[1]

Introduction

For many debaters, linking to nuclear war is a staple of any topic, not just those which have a reasonable chance of actually triggering nuclear war. This topic is exciting because it is the first in a while which embraces this element of debate rather than moving away from it. That being said, this topic approaches nuclear weapons from a more unique, truth testing-esque perspective which may make AFFs other than the very standard consequentialist "nuke war bad" viable. NEGs on this topic will need to be creative as the international consensus, as well as the generally agreed upon standard within the debate community, is that as a general rule nukes are bad. That means NEGs will need to find crafty reasons to justify the possession of nuclear weapons. This topic analysis will first briefly discuss framing before going into a few interesting AFF/NEG strategies which are available.

Background

This topic is what I like to call a *limited example* topic. Meaning, there are so few examples of countries which possess nuclear weapons that if you want to compete at the highest level you should probably be familiar and prepared to use all of them for both the AFF and NEG. Below I've listed all of the widely accepted nuclear powers, when they tested their first nuke (or when they are suspected to have obtained nuclear weapons), and a brief summary of their justifications for possessing nuclear weapons.

- United States[2]
    - Tested first nuclear weapon in July 1945.
    - Dropped nuclear bombs on Hiroshima and Nagasaki August 1945.
    - Justified use of nuclear weapons to defeat Japan and end World War II. Initial development was motivated by a fear that Nazi Germany would get nukes first.

- Russia (Soviet Union)[3]
    - First successful nuclear weapon test in 1949.
    - Justified nuclear weapons to end the American Nuclear monopoly and deter an attack from the US.

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[2] Schumann, Anna. 2025 "Fact Sheet: The United States' Nuclear Inventory." Center for Arms Control and Non-Proliferation, armscontrolcenter.org/fact-sheet-the-united-states-nuclear-arsenal/
[3] Vershinin, Alexander. 2017 "Why Did the Soviet Union Develop Its Own Atomic Bomb?" Russia Beyond, www.rbth.com/arts/history/2017/03/23/why-did-the-soviet-union-develop-its-own-atomic-bomb_725898.

- UK[4]
    - First successful nuclear weapons test in 1952.
    - Expected the US to freely share how to create a nuclear weapon after WWII, but after realizing this was not the case sought to create nuclear weapons to avoid falling behind other nuclear powers.
- France[5]
    - First successful nuclear weapon test in 1960.
    - Justified nuclear weapons for deterrence and to ensure French independence.
- China[6]
    - First successful nuclear weapon test in 1964.
    - Justified nuclear weapons to end perceived American nuclear bullying and deter an attack from the US.
- India[7]
    - First successful nuclear weapon test in 1974.
    - Ostensibly maintains a No First Use policy, but declared in 2003 that they could use nuclear weapons in response to chemical or biological attacks by Pakistan.
    - Justifies nuclear weapons to defend against China and Pakistan's nuclear arsenals.
- Israel[8]
    - Technically maintains an ambiguous stance on whether it has nuclear weapons for fear of upsetting the power balance in the Middle East, but the existence of Israeli nuclear capability is widely accepted in the International Community.
    - Potentially tested Nuclear weapons in 1979 in the Vela incident.
    - Consistently intervenes to stop neighbors from nuclearizing.
- Pakistan[9]
    - First successful nuclear weapon test in 1998.
    - Justified nuclear weapons in response to India's nuclear weapon tests.
- North Korea[10]
    - First successful nuclear weapon test in 2006
    - Justified nuclear weapons to improve standing on global stage and deter foreign invasion

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[4] 2018 "The Story of How Britain Got Nuclear Weapons ." *The National Interest*, nationalinterest.org/blog/the-buzz/the-story-how-britain-got-nuclear-weapons-26203.
[5] 2024 "How Did France Get Nuclear Weapons?" The Civil War, www.civil-war.net/how-did-france-get-nuclear-weapons/.
[6] "The Chinese Nuclear Weapons Program." n.d. Nuclear Weapons Education Project, nuclearweaponsedproj.mit.edu/china/.
[7] "Fact Sheet: India's Nuclear Inventory." Center for Arms Control and Non-Proliferation, 17 June 2025, armscontrolcenter.org/indias-nuclear-capabilities/.
[8] 2025 "Fact Sheet: Israel's Nuclear Inventory." Center for Arms Control and Non-Proliferation, armscontrolcenter.org/fact-sheet-israels-nuclear-arsenal/.
[9] Staff. "Pakistan." Nti, James Martin Center for Nonproliferation Studies , Apr. 2025, www.nti.org/countries/pakistan/.
[10] Staff. "A Timeline of North Korea's Nuclear Tests." *CBS News*, CBS Interactive, Sept. 2017, www.cbsnews.com/news/north-koreas-nuclear-tests-timeline/.

I'd encourage you to try to cut cards for both the AFF and NEG on all of these examples. If for one of the examples after searching for a really long time, you can't find evidence that supports the AFF, you know it's a strong NEG example, and vice versa. This is a great process which can be applied to almost any topic or argument, as most arguments have evidence which goes both ways, but the very strongest arguments tend to be more one directional.

In addition to these 9 nuclear powers, there are a small number of major nuclear treaties you should be aware of. These most likely won't come up as frequently as the specific examples of nuclear powers but they are a good starting point to understand the context in which international nuclear weapons are discussed and handled.

Major Treaties

- Nuclear Non-Proliferation Treaty
- Threshold Test Ban Treaty (US and Soviet Union only)
- Comprehensive Test Ban Treaty
- New START treaty (US and Russia only)

Finally, I'd encourage you to familiarize yourself with the Cuban Missile Crisis, and Iran's nuclear program as well as the history around both issues. This video does a good job of highlighting just how absurdly close the Cuban Missile Crisis came to nuclear weapons being used and a potential nuclear war. This is a great way to really emphasize to the judge that nuclear weapons possession really does strongly link to potential nuclear weapons use. Iran's nuclear program is important to understand because current nuclear powers (primarily the US and Israel) have taken extensive steps to prevent Iran from developing nuclear weapons. Most importantly there is some controversy in literature as to whether Iranian nukes would be a stabilizing[11] or destabilizing[12] force, and thus room for this example to be used on both sides.

Truth Testing

Before diving into details of the framework I'd like to start by analyzing an important meta idea which will come up during discussions of the topic. That is, are we *truth testing* or *comparing worlds*? While these terms are used to mean a variety of slightly different ideas from circuit to circuit, for the sake of this analysis, comparing worlds is the standard interpretation for most topics, where the AFF advocates for the affirmative world (post resolution), and says that it is, for one reason or another, better than the negative world (usually the status quo, sometimes after a counterplan). Truth testing is an interpretation where the affirmative argues that the resolution is true, whereas the NEG argues it is not true. Some resolutions clearly fall into comparing

[11] Waltz, Kenneth N. "Why Iran Should Get the Bomb: Nuclear Balancing Would Mean Stability." Foreign Affairs, vol. 91, no. 4, 2012, pp. 2–5. JSTOR, http://www.jstor.org/stable/23218033.

[12] "Preventing a Nuclear-Armed Iran: Shifting to Deterrence Is Long Overdue | ." Realcleardefense, 2023, www.realcleardefense.com/articles/2023/08/10/preventing_a_nuclear-armed_iran_shifting_to_deterrence_is_long_overdue_972009.html.

worlds (e.g. The PRC ought to prioritize environmental protection over economic growth) while others lean strongly towards truth testing (e.g. Justice requires open borders for human migration).

Grammatically, there is a very strong argument that we should be truth testing; after all, the resolution simply asks us whether something which is a fact of reality is immoral. The practical challenge for debaters seeking to run truth testing arguments however, will be finding a way to test the truth of the resolution independently of comparing worlds. Many truth testing cases wind up just functioning like overcomplicated consequentialism because they don't give a way to test truth outside of a comparative framework. One way to test this without comparing worlds could be some kind of deontological moral framework like sovereignty, which would say that any force used in protection of the state is justified. However, this doesn't seem to pass even very basic questioning (e.g. is North Korea's use of force moral; they are clearly sovereign and clearly use force to protect themselves, but that serves to allow them to commit human rights violations which are clearly wrong.)

This type of analysis has led me to the conclusion that in general for political philosophy topics comparative worlds will be the stronger approach, but if you can find a good truth testing approach you feel comfortable defending I'd encourage you to go for it; the wording of the topic is certainly on your side.

Burdening Questions

In addition to determining whether the resolution is truth testing or comparing worlds, there are a few burdening questions which the AFF/NEG will need to answer either explicitly or implicitly in their case. These are:

Does the AFF imagine a world without nukes, or is it asserting that nukes are immoral in today's world?

Does the NEG prove possession of nuclear weapons is good or amoral?

Does the AFF need to defend the process of disarmament?

There is no right or wrong answer to these questions, just make sure to go for the positions which support your side more.

Framework & Strategy

Affirmative

Affirmatives have the unique advantage on this topic of perhaps one of the strongest directly topical links to extinction/near-extinction possible. This means that upholding some flavor of consequentialism will be highly advantageous for most affirmatives. NEGs can try to compete on consequentialist grounds with great power conflict, conventional arms races, and biological or chemical weapons of mass destruction, but nuclear weapons are just so much larger than these alternatives that this will be very challenging.

AFFs also have the advantage that the most intuitive interpretations of the topic seem to lean towards the affirmative. For example, it is possible that the topic implies that the affirmative needs to defend the process of disarmament, however, this isn't really intuitive and grammatically the topic seems to lean towards not being a practical question of whether countries should actually disarm. This means that much of the affirmative burdening work can be done defensively, in response to whatever interpretations the NEG tries to go for. As long as the AFF can win a very basic interpretation of a world with nukes versus a world without, and a consequentialist framing, it will be very challenging for the negative to win.

Within consequentialism the AFF has two major options. First, they could go for a very standard pure Util framing in order to double down on the extinction link being the most important issue in the round. This is nice because it is very simple, however, it does risk making the affirmative solely reliant on their extinction/near-extinction link chains. Considering this, I'd encourage you to consider a consequentialist framework which weighs the least well off first (e.g. minimizing structural violence). Any consequentialist framework, even if it focuses primarily on the least well off, will inevitably weigh extinction as the most important issue.[13] However, using this approach opens the door for the affirmative to more easily incorporate a nuclear bullying or human rights contention focusing on how nukes allow countries to pressure each other negatively or protect them from backlash for human rights violations.

In terms of warranting the link between nuclear weapons possession to actual use the AFF has numerous options. A few good warrants for this link are listed below. The key to making these warrants as strong as they can be is finding some reason that it is particularly likely to trigger nuclear war today. After all, the judge will likely be thinking (and your opponent asking) that

[13] *Technically minimizing structural violence isn't just consequentialism with a focus on the least well off. However, for the sake of debate rounds, essentially every process can be interpreted as a structure. For example climate change is often cited as a non-structural source of violence, but the systems which enable climate change to occur and which shifts its impacts disproportionately onto the least well off are structural. A similar thought process can be used to circumvent most non-structural impacts, including nuclear war. Considering that under the Winter and Leighton 99 interpretation of structural violence says that we would focus on the invisibilized, overlooked violence first, this framework essentially means violence against the least well off is prioritized. To be clear, this isn't really accurate to the fundamental philosophy, but in the limited time of a debate round, this is how consequential interpretations of structural violence often wind up functioning.*

we've had nukes for decades without a nuclear war, so why is it plausible now? You can reasonably bite the bullet here and just say that we've gotten lucky in the past, but the strongest approach would be to say that something fundamentally increases the risk today.

Example warrants for Nuke Possession to Nuclear War:

Miscalculation

> Leaders, or really anyone with authority to launch a nuke (think leadership within a nuclear sub) misinterpreting data or receiving inaccurate data and launching a nuke. The Cuban Missile Crisis is a good example where this nearly happened on a nuclear sub. AI could make this more likely as an AI integration arms race appears to be starting between the US, Russia, and China to see who can integrate AI into weapons systems first.[14]

Irrational Actors

> An irrational actor gains control of a nuclear weapon and uses it. This could be a head of state, or a terrorist group which obtains a nuke. Incirlik air base[15], where the US has stationed a number of B61 nuclear warheads is a good example where this could happen either if Erdogan reverse engineers the weapon or if terrorists from closely neighboring Syria steal the weapons stationed there.

Cyber attacks

> A cyber attack remotely detonates a nuclear weapon, or interferes with nuclear weapon detection systems therefore increasing the risk of miscalculation. Increasing digitization of weapons systems[16] may be a good warrant here for increased risk of nuclear war today.

Tactical Nuclear Weapons Escalate

> A nuclear state uses a small scale tactical nuclear weapon, which then escalates into larger and larger bombs. A good example here is Russia, where Putin has been threatening to do this in Ukraine[17] for years now, and it's possible that if he grows more

[14] Hirsch, Michael. "The AI Doomsday Machine Is Closer to Reality Than You Think." Politico, Sept. 2025, www.politico.com/news/magazine/2025/09/02/pentagon-ai-nuclear-war-00496884.
[15] "Could Someone Actually Steal a U.S. Nuke?" 2019 Popular Mechanics, www.popularmechanics.com/military/weapons/a29576180/us-nuke-theft/.
[16] "Nuclear Weapons in the New Cyber Age | Addressing Emerging Threats." NTI, 2022, www.nti.org/analysis/articles/nuclear-weapons-cyber-age/.

[17] Press, The Associated. "Putin Sees No Need for Nuclear Weapons to Win in Ukraine. But He's Also Keeping His Options Open." AP News, AP News, 6 July 2024, apnews.com/article/russia-nuclear-threats-putin-ukraine-war-105bc866524d32013a3a4a37ddcef98b.

desperate he will actually resort to using these weapons. These tactical nukes in addition to being bad in and of themselves, have a significant risk of escalating to full-blown nuclear war.[18]

Negative

NEGs on this topic will need to get a little more creative than the affirmative, I see three possible paths:

1. Just bite the consequentialist bullet. Negatives using this strategy could just try to outweigh the AFF's nuke possession -> nuke use -> nuke war -> extinction. A negative with this goal would likely emphasize that great power competition, bio/chemical weapons, or some combination of both is destructive enough to cause similar results to nuke war (even if nukes are worse, you can only destroy the world once), but are more likely to escalate to that scale of destruction. Therefore, the NEG would argue that this makes the magnitude and scope a wash, but the probability would be higher and therefore the expected impact would outweigh.

2. Reframe the question. Negs using this strategy will focus on reframing the burdens in the round in a way which circumvents the standard impact times probability expected value calculus. One option is to very explicitly frame the question as "In a world with nuclear powers, is possession of a nuclear weapon immoral?" This actor specific perspective could allow NEGs to access arguments about nukes deterring other nukes and stabilizing regions. (NEGs seeking to defend this interpretation might point out that the resolution uses the word *is*, implying an evaluation in the present tense where there are nuclear weapons.) Another option is to try to force the AFF to defend the process of rapid disarmament, and to argue that this would pose a greater risk to nuclear use as bad actors take advantage of their disarming enemies.

3. Use some non-consequentialist framework. This is generally more challenging to warrant for political philosophy questions (typical choices like Kant's categorical imperatives don't apply very well to governments). However, for this topic you could try to go for a sovereignty or political realism NEG which argues that a core part of being a legitimate nation is the ability to use force to defend yourself in whatever form that force may take. You could also go for a global South "nukes good" case which argues that nuclear weapons are currently gate-kept by large and powerful countries, and would serve as an equalizing force if given to global South countries. NEGs running this advocacy would argue that while very unlikely, this possibility demonstrates that nuclear weapons

[18] Facini, Andrew. "The Consequences of Tactical Nuclear Weapons Use - the Council on Strategic Risks." The Council on Strategic Risks - Anticipating, Analyzing, and Addressing Systemic Risks, 27 Oct. 2025, councilonstrategicrisks.org/2025/10/23/the-consequences-of-tactical-nuclear-weapons-use/.

possession can't be inherently immoral because it would be so clearly equalizing and good in that case.

None of these options are perfect. Consequentialism seems like a losing battle, and the reframing approaches feel squirrely; if the judge doesn't buy it you just lose. Sovereignty or political realism frameworks always fall into really difficult questions when you look at clearly sovereign countries doing bad things. Considering this, I think the strongest negatives will use some combination of some or all of these approaches. That enables them to fight the affirmative's consequentism head on, while also providing multiple routes for the judge to circumvent the AFF and vote negative before even weighing lives and probabilities.

Final Remarks

If you've made it this far into this analysis, great! You should hopefully have a better starting place for this topic. I'd encourage you to read a few more analyses either in this brief or in any other you have access to. Then dive into the literature. I've left out a super close analysis of any particular contentions because I'm a firm believer that the evidence should write the case, not the other way around. So go find some great evidence. Good luck!

Topic Analysis by Olivia Lowry[19]

Foreword

Before we begin with a topic analysis, I want to offer a couple of reminders. First, nuclear weapons are not some abstract concept – they have been used before to end lives. It is easy for debaters to remove themselves from the loss of life they are describing. A failure to remember the *humanness* of death will always leave you worse off, not only as a debater but also as a person. Second, war is not neutral. By describing the actions of states, you are, by extension, describing the lives of people. Remember that when one speaks of government in isolation from the *members* of a country, they are forgoing recognition of many people. Speak with care, especially in speaking about threat and death.

Introduction and Scoping

In the following analysis, I will define some terms within my own words. This is not to say that I think definitions do not matter or that the words of the resolution are simple to define. Instead, I think it is easiest to debate the central questions of the topic when we agree on some common understandings of its scope.

> **Possession:** ownership or the state of having
>
> **Nuclear Weapons:** weapons of mass destruction, dependent on nuclear capabilities, that can be physically deployed

Nowhere in the resolution do the words usage or innovation appear. It is within the best interests of both debaters to keep those limitations in mind. The scoping of the resolution is solely about one central question: Does the simple **ownership** of nuclear weapons constitute a moral bad? This is not to say whether or not the weapons themselves are bad, or that their creation or use causes harm, but whether their stagnant ownership by entities is bad.

Negation resolutions are confusing for both debaters and judges. Both debaters would do well to make clear that the affirmative is "against" nuclear weapon possession and the negation is "for" nuclear weapon possession.

Additionally, the entities having possession go unnamed in the resolution. There are no "actors" in the resolution. This allows both debaters to open up questions of who are legitimate/illegitimate actors and the question of hypocrisy in condemning one over the other.

[19] Olivia Lowry is an NSDA Alum and instructor at Classic Debate Camp. She competed in Pennsylvania in both LD and PF and was the back-to-back Pennsylvania State Champion in 2023 and 2024.

Lastly, the AFF is not required to defend any *action*, especially because there are no actors in the resolution. AFF must just prove the statement, not advocate for the taking of weapons or de-proliferation. Whether that is a good or bad thing is yours to decide. Both sides can imagine a world without nuclear weapons and have a debate over whether that world is better, but AFF does not need to prove *how* that world comes to be.

As a more general note: I started in Public Forum debate. I am well aware that the conversation around nuclear weapons is *heavily* conducted in PF. To that end, I would encourage debaters with PF members on their team (both past and present) to *read* some of the literature their team members have used in past resolutions, such as the November/December 2022 resolution about Great Power Competition and, more explicitly, the November/December 2020 resolution about no-first-use policies. Obviously, these resolutions are either quite dated (2020) or only tangentially topical (2022). However, both of these topics start to breach the kinds of conversations this LD resolution begins to entertain. The Nov/Dec 2020 resolution on no-first-use is very similar to the central question of this topic–a question of whether possession implies an intent to use. Cases on the Nov/Dec 2020 PF topic are central background reading (if you can access them).

Things to Think About

This section contains just some things this resolution makes me think of/I think will be of some level of importance:

1) Mutually Assured Destruction–the idea that X thing possessing Y weapon/power deters an offensive actor because such an offensive attack would inevitably result in said offensive actor being destroyed in retaliation. This is not a categorical truth–this will be a debate.

2) Weapons of Mass Destruction–nuclear weapons are not the only weapons of mass destruction. What does it mean to be a weapon of "mass destruction" and what does it mean to possess them (ie, chemical, biological, etc)?

3) Cold War–the Cold War is going to be the period of most relevance to the resolution (obviously into the contemporary, but the Cold War is *the* ultimate nuclear stalemate). Remember that the "Cold War" has not ended for the Global South. Just because the *site* of violence has shifted does not mean it has ended–think the Korean peninsula.

4) The Actors–most debaters will assume we are talking about governments' possession of nuclear weapons. However, the resolution never specifies *who* this immoral possession falls under. Be prepared for conversations about non-state actors and their ability to possess such weapons.

5) Weapons–what does it mean for a thing to be a weapon? Can non-offensive, non-military objects be considered weapons? This is probably a frivolous, frankly tricky debate, but maybe something to think about?

6) Rationality/Miscalculation–many arguments will rest on the possibility of "irrational" actors doing things with nuclear weapons. One should hesitate to attribute "irrationality" to any actor. Remember that the global power structure has historically and presently prescribed irrationality onto non-Western actors–do not fall into that trap. People do things for reasons that *you* may not agree with, but to them are completely logical. Who has the power to rule on that judgment?

Affirmative General Strategy

The burden of the affirmative is to affirm the resolution. No matter what *type* of debater you are, the best (topical) AFF cases are those that are entirely dependent on the fiat (can-ness) of the resolution. The affirmation should concentrate its overview and scoping of the resolution on centralizing the question of possession. Many AFFs will argue that using nuclear weapons is bad or that innovating on nuclear weapons is bad–neither of these is **required** by the resolution. Instead, an AFF allows itself the most flexibility and the smallest burden by simply defending that the possession of nuclear weapons is immoral.

Conversely, the AFF **may** make the arguments that the possession of nuclear weapons includes and encompasses a moral condemnation of usage/innovation *if it would like to*. I do not necessarily think that this is the *best* option, but it is *an* option. To possess anything, it must first be created (or acquired). Additionally, the possession *of* something typically affirms a potential for its de-possession (for example, through usage). Neither of these is written into the resolution, and will therefore need to be *proven* in order to be argued. Having to "win" the scoping debate by bringing in subjects from outside of the resolution already puts the AFF behind when they have much shorter speeches to cover nuances like these. That is why the above scoping is probably the most helpful.

As a note and in response to some of the NEG framing I advocate for below, the AFF should take care to defend the total truth-testing of a universal statement. Many NEGs will call on the AFF to prove the resolution *in every instance*. This undoubtedly pigeonholes the AFF into defending *everything*. The AFF would probably do best in refusing to adhere to that burden.

Negation General Strategy

The burden of the negation is to negate the AFF and/or the resolution. Remember that the negation is always the most flexible of the two sides; use that flexibility to your advantage. The most straightforward NEG advocacy is that "The possession of nuclear weapons is moral," or the

inverse of the resolution. However, that position is extremely limiting, as it requires you to *prove morality* rather than just to deny immorality.

Another negative strategy is simply to argue that "The possession of nuclear weapons is *not* immoral." This centers around advocating that if we are truth-testing the statement of morality/immorality, any arguments that prove that the possession is *not* immoral, even in just one case, prevent us from affirming the truth statement. This widens the NEG's option by allowing it to attempt to disprove the resolution from multiple angles. For example, if the NEG makes an observation that simply one case of non-immorality exists and runs two examples and wins only one, they can still win the round. Remember that the NEG's case-proper is always an independent reason to *not* affirm. The NEG's refutation of the AFF's case happens during the 1NR and on the AFF's side of the flow.

In terms of the debate regarding whether or not possession includes innovation/usage, the NEG can choose whatever they would prefer. Perhaps the NEG benefits from arguing that innovation/creation is moral because nuclear energy can save our planet. Perhaps the NEG is harmed by arguing that usage is moral because it inevitably leads to mass death and ecological destruction. I think the usage argument is quite straightforward, and a smart NEG should not allow usage to be included in the AFF's framing. However, I think the question of innovation/construction, while arguably outside the parameters of this resolution, is a much more interesting question for the NEG to take up.

Frameworks

In this section, the footnotes that I have put into the document are not citations for my statements, but rather my either 1) expanding on the topic or 2) providing a reading relevant to the topic.

I. Structural Violence

If I were debating this topic, I would inevitably run structural violence framing (though this is a bias after I exclusively ran SV framing for my last two years of high school debate).

The affirmation is set up most directly for a structural violence framing in the inevitable conversations surrounding the power hierarchy of holding nuclear weapons. Who gets to declare/decide war inevitably rests with those who possess the most powerful forms of weapons of mass destruction. In this way, the possession of nuclear weapons is a literal structure of violence, as it polices death.[20] Moving one step away from literal possession as structural

[20] Necropolitics by Achille Mbembe explores this question of hierarchy in pain, terror, and death in an increasingly militarized world–he is building off of Foucault's biopolitics by adding a decolonial/racial lens. He specifically questions what it means to render the living dead, which is interesting when discussing the kind of "security" mutually assured destruction creates.

violence, there is expansive literature on nuclear weapons' embodiment of patriarchal violence[21] and also their roots and mechanisms in colonization.[22]

The negation also has the opportunity to run structural violence framing. If we are to accept militarism as a truth, what is the best way for a nation to resist those power hierarchies? The possession of the ultimate weapon of mass deterrence. However, this framing requires mutually assured destruction to be inherently true (which is debatable both in this resolution and in the real world). This can be further extended into more tangible arguments about Global South countries accessing nuclear weapons and resistance. For example, the initial reflex on Iran is to condemn possession, but if the absence of an external (conventional warfare) attack on Iran can be attributed to its possession of nuclear weapons, doesn't that mean maybe possession can protect Global South countries?

II. Utilitarianism

Obviously, this topic is ripe for "stock" debates. This is to say that things like mutually assured destruction, conventional warfare being outweighed, nuclear extinction, etc, are very accessible conversations and are very central to this topic. I would encourage debaters to understand these debates regardless of whether or not they are running utilitarianism as their framework.

The affirmation can make the argument that the possession of nuclear weapons only increases the risk of nuclear war, which can, in extreme cases, impact out to extinction/nuclear fallout. This can be caused by a variety of things, including miscalculation, usage only being possible when you have them, etc.

The negation can make the argument that conventional warfare will only increase without nuclear weapons, and, therefore, mutually assured destruction is preferable as a deterrent to mass war.

Concluding Remarks

In the end, this topic is what you make it. You will do great regardless. My only piece of advice is that you argue for what you can put faith in. The most difficult thing you can do is put yourself into a round arguing for something you do not believe. Compromising your commitment to truth already puts you at a disadvantage before entering the room. Be able to speak with passion, not because you can fake it, but because you can fight for it.

Good luck, have so much fun, and learn something!

[21] Cynthia Enloe is one of the world's leading scholars on gendered militarism.
[22] There are many Indigenous authors that discuss ongoing colonialism through nuclear weaponry.

Topic Analysis by Greta Wedel[23]

Background and General Topic Analysis

I will begin with this: nuclear weapons, and nuclear warfare, are commonplace terms that are frequently tossed around in high school debate with limited consideration. The reality of nuclear weapons, however, is far from simple. These weapons, in the process of their creation, and through their use, have devastated and ended the livelihood of a great many people. I urge all of you to handle this topic with the intellectual care it deserves. The discourses that we create in debate are reflective of the lives of real people, and the arguments that we make regarding suffering and death are grounded in reality. This topic has the opportunity to create a stage for deeply thought out and conscious discussions regarding the ethicality of innovation, of weaponry, and of warfare. Let it!

This resolution, in the context of the past couple of years' worth of LD topics, is a relatively simple one. It's fairly straightforward, lacking complexity in terms of definitions, meaning that the ground allotted to either side is generally quite clear. However, it also becomes an incredibly interesting resolution due to the fact that it is highly theoretical. As opposed to forcing either side to directly defend the concepts of proliferation, nonproliferation, or disarmament, this topic probes at the morality inherent to nuclear ownership.

The affirmative is tasked with proving that the possession of nuclear weapons is inherently immoral. By extension, the affirmative may choose to defend disarmament, but is not forced to. I will touch on this further in the scoping section. The negative, on the other side of the resolution, is tasked with defending the morality of nuclear possession.

It is also worth noting that the concept of nuclear possession is not as simple as it seems. I will cover the scoping implications of the term "possession" in a subsequent section, but, for now, I would like to quickly touch on what possession involves.

In international relations (IR) literature, a large body of scholarship has focused on developing a concept called "Signaling Theory". The general goal of signaling theory in IR is to conceptualize the behavior of state actors when information asymmetry exists. This means that one party (the signaling party) has information that the other party (the receiving party) does not have and is attempting to interpret.

The concept of signaling theory becomes highly relevant when discussing the proliferation of nuclear weapons, as the predominant use of these weapons by state actors is nuclear deterrence, in which the threat of nuclear retaliation is used by a state to ward off attacks from others. Signals generally exist on a range of costliness – the costlier a signal, the more credible. When

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signals are misinterpreted, miscalculation can occur. And, in the case of nuclear possession, miscalculation stands as a massive threat to international stability.

I am not going to extend this analysis too far at the risk of becoming both confusing and increasingly boring, but I urge all of you to look further into the concept of signaling when developing your cases. This concept underlies the efficacy of nuclear deterrence, and of frameworks like the US nuclear umbrella. To fully understand your arguments in these areas requires you generally understanding the basis of signaling theory.

Scoping and Burdens

While the sides of this resolution are generally quite clear, the way that ground is interpreted is not. This topic was utilized at the 2025 Classic Debate Camp, and through working with it, I have come to the conclusion that there are generally two different ways to approach this particular resolution:

Truth Testing Approach

Truth testing refers to a theoretical and fairly abstract approach to LD that isn't common in most circuits. Regardless, I think that it's worth touching on in this brief, as it may be of use to some of you. Under the truth testing approach, the affirmative side of this resolution is solely tasked with proving that the resolution (a normative statement) is TRUE. The negative, then, is tasked with proving that it is NOT true. What this means in practice is that a truth-testing approach does not consider whether a world without nukes would be better than a world with nukes, it merely considers the reality of the status quo to come to a conclusion.

As Tristan noted in the analysis above, the grammatical structure of the resolution certainly tends to favor a truth-testing approach. However, creating a functional truth-testing case is harder to do than one might anticipate. In order to fully commit to this type of case, you have to focus on inherent, or deontological, morality. Arguments cannot be based on the consequences or even the threat of use. I do not see many ways to go about this particular approach in the context of this topic, however, I will discuss the few that I see in the AFF/NEG strategy sections. If any of you end up writing a case or want to write a case that takes this approach, I would be happy to discuss it further. My email can be found in the foreword.

Comparison of Worlds Approach

The comparison of worlds approach is the approach that is generally utilized for most LD topics – the AFF world is set against the NEG world in order to determine which world is morally preferable. The wording of this topic makes it somewhat difficult to determine what the worlds would look like, as there is no action inherent to the resolution. However, after discussing with the camp instructing team this summer as well as a number of debaters, it seems that the general

consensus is that the affirmative fiat[24] power allows them to defend a world without nuclear weapons, while the NEG defends a world where nuclear weapons are possessed.

My belief is that this is going to be the predominant approach used by most debaters on most circuits, especially given that the consequential approach dominates LD strategy at large. It is worth noting that the affirmative is NOT tasked with defending the logistical viability of disarmament or nonproliferation. They only need to establish that a world without nuclear weapons would be more moral than a world with them.

The idea of "possession" is also relevant to the scoping discussion of this topic. The use of the word "possession" as opposed to "use" or "development" substantially narrows the scope of the resolution, and forces the affirmative to establish the immorality of a sedentary action. However, I would also question whether the reality of possession can ever truly be decoupled from the concepts of use and development. Without development, possession cannot occur, and the basis of possession is use. I would be careful how you approach this distinction to ensure that your arguments remain topical, however, I would also not cut your ground farther than you have to.

The last scoping consideration that I find to be relevant on this topic is the matter of the resolution's application. Certain debaters may attempt to use observations that argue that they need only establish one example where nuclear possession was immoral (or moral, in the case of the NEG) to win the round, cherrypicking examples such as North Korea when doing so. I do not believe, as both a coach and a judge, that this type of scoping is fair or that it encourages high-quality debate. However, simultaneously, if it goes unresponded to there is little choice but to vote on it. For that reason, if I were you, I would heavily consider implementing a "general principle" observation into your cases that establishes that the resolution must be proven as true in a majority of situations. This accommodates for outlier cases while creating fair ground within the debate, and will likely be preferred by most judges.

Affirmative Strategy

The burden of the AFF in this resolution is straightforward – prove that nuclear weapons are immoral. As established above, the most effective affirmative cases on this topic will likely adhere to the fiat approach in arguing that a world without nuclear weapons is morally preferable to a world with them. Furthermore, the affirmative is probably best off focusing specifically on the concept of possession, given that condemning only possession is the burden placed on the AFF by the resolution's wording. Extending the case to arguments that rely on condemning use or development causes the AFF to heighten their burden of proof, which is generally not advantageous. However, that does not go to say that these arguments cannot be compelling (they certainly can be!), they merely are more tricky to make.

[24] "Fiat", a term that is latin for "let it be done", refers to the affirmative's power to assume that the resolution has been completed and use their arguments to defend the world post-resolution. Essentially, fiat narrows the scope of the resolution to whether an action SHOULD be taken, not whether it CAN be taken.

If you are going to create an affirmative case that strays beyond the concept of mere possession, you must create a logical defense for the topicality of use or development. I am going to provide a general run down of how you might do this below:

- **Development:** The simplest way to include arguments related to development into the the scope of this topic is to argue that development is a necessary prerequisite for possession. One cannot possess an item if it does not exist, and given that nukes do not sprout from the ground, it is quite easy to make the argument that they do first require development in order to be possessed. However, the timeline on this argument can get unclear fast – sure, the development of nuclear weapons has wreaked havoc on both environments and communities through waste production and testing procedures, but that harm theoretically stops once the nuke is produced. The question of whether a given weapon is inherently immoral because immoral actions were fundamental in its creation is extremely complex, and not something I am going to provide an answer to. However, I urge you to think about it.

  Generally, in order for arguments about development to stand, the topicality of continued development is going to need to be established. A debater may be able to argue that, so long as states possess nukes, they will continue to develop and innovate them. But this argument requires careful thought and structuring, so I would be careful in pursuing it.

- **Use:** I would consider the topicality of arguments related to use to be generally more complex than that of those related to development. Generally, if I were the opponent, I would argue that my opponent has to prove that possession, in a majority of cases, translates to use in order for these arguments to stand. As we know, that's not going to be possible to prove in the nuclear case. Instead, if I were the AFF, I would focus on arguments related to the **threat of use.** Especially in the context of morality, the idea that nuclear possession is predicated on a commitment to cause mass casualty can be very compelling. The intention of creating a weapon is use, and while the intention of possession may be deterrence, the efficacy of deterrence relies on a credible commitment to the threat of use.

Affirmative Framework Recommendations

I. Consequentialism/Utilitarianism

Generally framed as the idea of maximizing pleasure and minimizing pain, utilitarianism remains one of the (if not THE) most frequently used frameworks in LD. This topic is no different. In fact, this topic is particularly ripe for stock, impact-based debate, which makes it a perfect topic for utilitarian and consequentialist frameworks. The affirmative utility of these frameworks is

pretty obvious – leveraging the negative consequences of nuclear possession and the positive consequences of disarmament to prove the resolution true.

The affirmative is able to very easily link into nuclear war, and thereby human extinction, which is a compelling argument under almost every common framework. However, doing so carries a risk of over-simplifying the AFF position. It may be advantageous for affirmative debaters to extend their argumentation beyond extinction and establish other advantages of a world without nuclear weapons that do not rely on minimizing existential risk.

II. Mitigating Structural Violence (MSV)

Mitigating Structural Violence (and similar justice-related frameworks) were what I tended to reach for during my time debating. On this topic, MSV presents a strong opportunity for use on the affirmative side. The current nuclear arrangement results in power being concentrated in the hands of a small number of countries, and is dominated by great powers like the US, China, and Russia. Nuclear arsenals give these countries an undeniable advantage when put against smaller, non-nuclear nations and allow for abuse of nuclear power, or nuclear bullying, in which nuclear states leverage their capabilities to gain concessions from smaller non-nuclear states. A non-nuclear world removes this tremendous advantage granted to nations with already dominant military capacity, improving global equity between states.

Further, the concept of proxy wars becomes incredibly potent when framed in the context of a structural violence framework. Although the age of nuclear deterrence is said to have substantially decreased traditional warfare between states, the same cannot be said for proxy wars. The affirmative may argue that nuclear deterrence has encouraged great powers to move fighting off of their own soil, with hopes of minimizing nuclear risk, and onto the soil of small, disadvantaged countries. There is substantial evidence for this, especially when looking at the cold war era, where the US and Russia fought proxy wars across numerous countries including Cuba and South Korea.

III. Non-Domination (Existential Risk)

Generally, existential risk arguments will fall under a utilitarian framework, especially when leveraged in the consequential sense. However, I wanted to talk about existential risk as an independent framework here because I believe it theoretically could have a different application. As stated above, this resolution is generally going to be argued as a fiat topic, however, this is one of the only areas where I see potential for a truth-testing case.

Focusing very heavily on philosophy, an affirmative debater may choose to make the argument that possession of any item that can end the existence of the entire human race is inherently immoral. This argument generally finds its place in deontology, meaning that it is not focused on consequences but rather on inherent morality. The argument follows that nuclear weapons represent an unequal and inherently immoral concentration of power that no single state or actor

should ever have the capability to leverage. The threat of nuclear possession infringes not only on the sovereignty but on the life of a substantial number of people who have no choice in whether these weapons are developed, possessed, or used. Insofar as nuclear weapons exist, they are inherently dominant, and introduce a risk that is immoral in weight.

It would follow that nuclear weapons are NEVER moral, no matter who owns them or in what context. This argument could theoretically stand on its own or as a deontological complement to a consequentialist case, but I wanted to run over it in case it ends up being of interest to any debaters that are reading this.

Negative Strategy

The negative position on this resolution is fairly tricky, especially when you consider that the general scholarly and global consensus seems to point towards nuclear weapons being a bad thing. However, that does not mean that the NEG has to remain at a disadvantage in all rounds. The negative position remains significantly more flexible than the affirmative position, an advantage that the NEG ought to take advantage of in a narrow resolution such as this one.

The negative generally has two routes that they can take with this resolution – they can argue that the possession of nuclear weapons IS moral, or they can argue that the possession of nuclear weapons is NOT immoral.

The distinction between these two approaches may not appear immediately obvious, but it is an important one. While the most common approach will likely be to simply defend the morality of nuclear weapons, it is reasonably within the scope of negative ground to argue that nukes are amoral (neither moral or immoral). This is an approach that I would guess a lot of debaters are going to consider, and I could see it being reasonably compelling if done well. My warning would be this – it is very easy to argue that certain inanimate objects are immoral, such as a toaster or even an airplane, but when a technology is created with the goal to end life, it is very difficult to decouple its existence from the reason that it exists.

Perhaps the most common negative strategy on this topic will be to defend deterrence. When stacked against AFFs that are weighing existential risk and/or nuclear war, a NEG may find themselves well off arguing that nuclear weapons deter the proliferation and use of other world-ending technologies, such as bioweapons. However, this position will require careful calculus and weighing by the NEG, as it requires the NEG debater to step nearly fully onto the AFF debater's territory and likely submit to their framing.

I also think that there is a decently viable approach that lies in defending nuclear deterrence as a framework for international peace and improved interstate relations, while heavily discounting the legitimacy of the affirmative's arguments. This strategy is likely to be especially effective against affirmative cases that focus on narrow or unique arguments, such as miscalculation. In

following this strategy, the NEG would read a simple defense of deterrence and then dedicate a significant amount of time to proving why miscalculation (or other) does not carry the risk that the affirmative purports. By washing the AFF and maintaining general yet viable offense, the NEG can potentially create a clear path to the ballot.

The last thing that I want to touch on in terms of general negative strategy is the idea of continued possession. It is worth noting that the NEG's burden, if they chose to adopt it as such, only has to be to defend the status quo. This means that the NEG does not have to defend any new proliferation of nuclear weapons, nor a different arrangement of nuclear possession. The negative can narrow their position to the current state of nuclear possession, with nine countries possessing these weapons, which allows them to scope out arguments that rely on theoretical possession by nonstate actors or other, currently non-nuclear states.

Negative Framework Recommendations

I. Utilitarianism/Consequentialism

As said above – this topic is ripe for consequentialist debate. Just as this framework is heavily relevant for the affirmative, it is likewise relevant for the negative. The negative may argue that nuclear possession is a substantial contributor to ongoing global peace, decreasing the frequency of conflict between state powers. Further, the negative may argue that a world without nuclear weapons will result in more conflicts, and thereby more death and suffering. This is a fairly straightforward approach, but can be strong if the link chains supporting it are tight and well-evidenced.

Further than just peace, the negative can consider arguing that deterrence prevents the proliferation and use of other weapons of mass destruction such as bioweapons or chemical weapons. This argument underscores that nuclear weapons have taken states eyes off of lesser, but still deadly forms of WMDs. In a world without nuclear weapons, the NEG may argue that proliferation of such WMDs would increase and thereby create a more unstable extinction-level threat.

II. Governmental Legitimacy/Sovereignty

Negative debaters may consider taking a governmental legitimacy/sovereignty angle to this case. The application of this framework relies on the idea of political realism – a philosophy that assumes power ought to be the end goal of political action, and views states as independent and rational actors. It follows that states are morally justified in taking actions that allow them to maintain sovereignty and defend their existence. Insofar as nuclear weapons and the knowledge of how to create them exists, it follows that states are justified in producing such weapons as a defensive mechanism. It is worth noting that nuclear weapons have never been used in the offensive capacity (offensive meaning to initiate conflict), so the NEG may have solid ground to argue this approach as a matter of general principle.

III. Mitigating Structural Violence

This approach relies on the assumption that mutually assured destruction is true and that deterrence is actually a viable strategy. However, if a debater can defend those things, I would consider this to potentially be a unique and viable NEG strategy.

Leveraging MSV, a negative debater can center the question of what would best allow disadvantaged, small-state actors to secure their borders. The answer is a weapon that produces stable and widespread deterrence. Nuclear weapons fall into this category. A MSV NEG may argue that military imbalances between small state actors and great powers are inevitable – that a country like Ethiopia will never develop the military capacity to win an armed conflict against a country like the US. It follows that the only way for such countries to protect their borders from intervention and conflict is the development of effective deterrence mechanisms, such as nuclear weapons.

This case relies on the negative arguing for a theoretical scenario, which carries substantial risk. However, I do not think that is the reason to rule it out entirely, as it could create a compelling and unique case.

Final Remarks

At the end of the day, this topic has the opportunity to be as simple or creative as you chose to make it. In terms of being an LD topic, it is both simple and relatively narrow, something that those of us familiar with this activity would likely consider to be abnormal. However, I would urge all of you to not see that simplicity as a disadvantage, and rather see it as an opportunity to get to know this topic as well as you can, and to develop arguments that are unique, intellectually deep, and compelling. Just because an approach is uncommon is not a reason not to run it. This topic is what you make of it, so make it something that allows you to have fun. Happy Prepping!

Affirmative Evidence[25]

Definitions

Oxford Languages (N.D.): Definition of Possession

Oxford Languages. "Possession." N.D. https://languages.oup.com/google-dictionary-en/

Possession: The state of having, owning, or controlling something.

Extinction and Nuclear Conflict

University of Chicago Existential Risk Laboratory (N.D.): Nuclear conflict risks billions of lives and tensions are only growing

University of Chicago Existential Risk Laboratory. "Ten Things To Know About Nuclear Risk." The University of Chicago. N.D. https://xrisk.uchicago.edu/nuclear-risk/

1 There are currently an estimated 3708 nuclear weapons deployed either at bomber bases or on missiles. Though the number of nuclear weapons has gone down significantly since the 1980s, the current global stock of nuclear weapons is still high and rising. As of March 2024, the nuclear-armed states possessed a combined total of about 12,100 nuclear weapons. Roughly 3,804 are operational nuclear weapons. Of those, 2,000 are on "high-alert status," which means they stand ready to be launched at any time. 2 Nine states currently possess nuclear weapons: the United States, Russia, China, the United Kingdom, France, India, Pakistan, North Korea, and Israel. Of these "Nuclear Nine," nearly all actively maintain a policy of nuclear retaliation in self-defense. Further, only two states have vowed never to use nuclear weapons first, known as a "no first use" policy. There are also nuclear-capable states: those that do not possess physical nuclear weapons but have the resources and expertise to construct a successful nuclear program. Nuclear-capable states include: Iran, Japan, Germany, and South Korea. 3 Even a relatively small, regional war using as few as 250 warheads could cause a nuclear winter effect leading to the deaths of more than 1.4 billion people globally. Nuclear winter is a climate event that emerges from the large-scale use of nuclear weapons. If weapons are used on targets with large fuel loads, such as cities, the resulting firestorms would loft soot high into the atmosphere. The dust, smoke, and soot that then fill the atmosphere would then block sunlight from warming the earth's surface, resulting in drastic temperature changes which would dramatically reduce food production for 10 years. A full scale nuclear exchange between the United States and Russia would cause below freezing summer temperatures and lead to the deaths of more than 5 billion in the first 2 years alone. However, military doctrine and planning traditionally fails to account for nuclear winter. 4 Only a small number of actors need to make a decision for nuclear weapons to be launched. Several states, including the US, require the decision of only a single person. In a crisis, leaders may only have 15 minutes to decide on a response to an incoming attack. The nine nuclear powers possess varied command and control structures for approving a nuclear launch. Despite differences in governance structures, the decision to launch a nuclear strike indeed often remains in the hands of the president or head of state to enable them to respond in time. In the US, France, and North Korea, the head of state has sole authority to launch nuclear weapons. Other nuclear launch authority structures often take the form of a small, 10 to 15 person

[25] Please note that these cards are NOT fully cut – we believe it is usually best for debaters to cut their own cards and decide how they are best read in order to be advantageous for their individual cases. However, we have highlighted what we consider to be relevant sections to provide a guide on where you might cut the card.

decision-making body, but it is unclear how many of these states would function in a nuclear crisis. Once weapons are launched, there is no way to recall or remotely disable them. 5 Accidental nuclear war as a result of inadvertent escalation has nearly occurred numerous times—these events are called nuclear "near misses." For instance, in 1983, Stanislav Petrov, a Soviet officer, received early warning signals suggesting five incoming U.S. ICBMs. Despite protocol requiring him to report the alerts, which could have led to a retaliatory nuclear launch, Petrov chose to disregard them based on his intuition that the signals were a false alarm, preventing an accidental nuclear exchange. The readings were later found to be a malfunction from sunlight glinting off of clouds. Beyond 1983, there have been several more occasions when the world came dangerously close to a nuclear exchange—the Cuban Missile Crisis and the Able Archer 83 incident are just two more examples. 6 Known as the three-body problem, China's rise to becoming a global nuclear power is disrupting the bilateral stability achieved between the U.S. and Russia during the Cold War. During the Cold War, the world only had to truly maintain deterrence between the US and the USSR. Today, with the US, China, and Russia possessing comparably large nuclear arsenals, the strategic dynamic has evolved. Since arsenal sizes are predicated in part on the ability to destroy an adversary's arsenal, between three states attempting to deter one another, the calculus for how much offensive power is needed to achieve such a "counterforce" strike has changed. Negotiations also become harder between three parties. As other states such as India rise to world power status, this strategic dynamic is likely to become even more uncertain. 7 There will soon be far fewer arms control treaties on nuclear weapons than in past decades. Many of these international legal frameworks have expired or been withdrawn from in the last several years. Many of the remaining treaties will soon expire. These treaties include: the Strategic Arms Limitations Treaty (SALT), the Comprehensive Test Ban Treaty (CTBT), New START, JCPOA, and the Treaty on Conventional Armed Forces in Europe (CFE). The expirations, as well as the current global security climate, have weakened the effectiveness of treaties that still exist, like the NPT. Furthermore, amidst rising tensions, it seems unlikely that new treaties will be NEGotiated. 8 Nuclear and conventional military capabilities are increasingly entangled through the deployment of "dual-use" weapons and information systems. With increased overlap of nuclear and conventional systems, adversaries will struggle to distinguish which systems are intended for conventional or nuclear strikes. This could lead to inadvertent escalation where neither state wants to use nuclear weapons but feels they face a "use it or lose it" situation. For instance, a conventional strike in a conventional conflict on an element of an adversary's command, control, and communications platforms (C3), such as a radar station or satellite, may unintentionally make an adversary feel that their arsenal is threatened if it introduces communication gaps and information shortages in their nuclear chains of command. Ambiguity over whether an incoming missile is nuclear-armed may force a state to make hasty and escalatory decisions. Even in the absence of an active conflict, an adversary's build up of dual-use weapons systems may make a state uncertain about the other's intentions. 9 Funding for nuclear risk research and advocacy is drying up at a time when work on mitigating nuclear risk is critical. Globally, only roughly $40-50 million per year is invested by philanthropy in mitigating nuclear risk. That number is expected to drop as the MacArthur Foundation, previously the source of around 30% of funding, had left the field as of 2024. In comparison, defense companies spent $117 million lobbying governments in 2020 alone — making a return of $236 in nuclear weapon-related contracts per dollar spent. Governments worldwide are increasing their spending on nuclear weapons with $91.3 billion spent in 2023. While this spending doesn't necessarily mean a more dangerous world, it shows that states still view nuclear weapons, and the threat of their use, as key to their security. 10 The rise of artificial intelligence and modernization of arsenals present the potential for new kinds of accidents and false alarms as new and unfamiliar technologies are deployed. While states are not seriously considering giving AI models direct control of nuclear weapons, militaries are actively looking to incorporate this emerging technology into a wide array of applications, including assisting military decision making and early warning sensors. AI models are susceptible to a wide range of failures and attacks. In the conventional realm, the technology might cause unintended escalation through automated procedures and shortened decision times, especially when military forces are deployed during a crisis. Even while working as intended, these tools can enable states to better target previously hidden weapons such as submarines or mobile launchers leading states to perceive their nuclear forces are vulnerable. In a domain where even small mistakes could be catastrophic, the past failures of these new technologies is concerning.

Starr (2014): Nuclear war would catastrophically disrupt the global climate and lead to human extinction

Starr, Steven. "There Can Be No Winners in a Nuclear War." Truthout. June 11 2014.
https://truthout.org/articles/there-can-be-no-winners-in-a-nuclear-war/

Nuclear war has no winner. Beginning in 2006, several of the world's leading climatologists (at Rutgers, UCLA, John Hopkins University, and the University of Colorado-Boulder) published a series of studies that evaluated the long-term environmental consequences of a nuclear war, including baseline scenarios fought with merely 1% of the explosive power in the US and/or Russian launch-ready nuclear arsenals. They concluded that the consequences of even a "small" nuclear war would include catastrophic disruptions of global climate and massive destruction of Earth's protective ozone layer. These and more recent studies predict that global agriculture would be so negatively affected by such a war, a global famine would result, which would cause up to 2 billion people to starve to death. These peer-reviewed studies – which were analyzed by the best scientists in the world and found to be without error – also predict that a war fought with less than half of US or Russian strategic nuclear weapons would destroy the human race. In other words, a US-Russian nuclear war would create such extreme long-term damage to the global environment that it would [and] leave the Earth uninhabitable for humans and most animal forms of life. A recent article in the Bulletin of the Atomic Scientists, "Self-assured destruction: The climate impacts of nuclear war," begins by stating: "A nuclear war between Russia and the United States, even after the arsenal reductions planned under New START, could produce a nuclear winter. Hence, an attack by either side could be suicidal, resulting in self-assured destruction." In 2009, I wrote "Catastrophic Climatic Consequences of Nuclear Conflicts" for the International Commission on Nuclear Non-proliferation and Disarmament. The article summarizes the findings of these studies. It explains that nuclear firestorms would produce millions of tons of smoke, which would rise above cloud level and form a global stratospheric smoke layer that would rapidly encircle the Earth. The smoke layer would remain for at least a decade, and it would act to destroy the protective ozone layer (vastly increasing the UV-B reaching Earth) as well as block warming sunlight, thus creating Ice Age weather conditions that would last 10 years or longer. Following a US-Russian nuclear war, temperatures in the central US and Eurasia would fall below freezing every day for one to three years; the intense cold would completely eliminate growing seasons for a decade or longer. No crops could be grown, leading to a famine that would kill most humans and large animal populations. Electromagnetic pulse from high-altitude nuclear detonations would destroy the integrated circuits in all modern electronic devices, including those in commercial nuclear power plants. Every nuclear reactor would almost instantly meltdown; every nuclear spent fuel pool (which contain many times more radioactivity than found in the reactors) would boil off, releasing vast amounts of long-lived radioactivity. The fallout would make most of the US and Europe uninhabitable. Of course, the survivors of the nuclear war would be starving to death anyway. Once nuclear weapons were introduced into a US-Russian conflict, there would be little chance that a nuclear holocaust could be avoided. Theories of "limited nuclear war" and "nuclear de-escalation" are unrealistic. In 2002 the Bush administration modified US strategic doctrine from a retaliatory role to permit preemptive nuclear attack; in 2010, the Obama administration made only incremental and miniscule changes to this doctrine, leaving it essentially unchanged. Furthermore, Counterforce doctrine – used by both the US and Russian military – emphasizes the need for preemptive strikes once nuclear war begins. Both sides would be under immense pressure to launch a preemptive nuclear first-strike once military hostilities had commenced, especially if nuclear weapons had already been used on the battlefield. Both the US and Russia each have 400 to 500 launch-ready ballistic missiles armed with a total of at least 1800 strategic nuclear warheads, which can be launched with only a few minutes warning. Both the US and Russian Presidents are accompanied 24/7 by military officers carrying a "nuclear briefcase," which allows them to transmit the permission order to launch in a matter of seconds. Yet top political leaders and policymakers of both the US and Russia seem to be unaware that their launch-ready nuclear weapons represent a self-destruct mechanism for the human race. For example, in 2010, I was able to publicly question the chief NEGotiators of the New START treaty, Russian Ambassador Anatoly Antonov and (then) US Assistant Secretary of State Rose Gottemoeller, during their joint briefing at the UN (during the Non-Proliferation Treaty Review Conference). I asked them if they were familiar with the recent peer-reviewed studies that predicted the detonation of less than 1% of the explosive power contained in the operational and deployed US and Russian nuclear forces would

cause catastrophic changes in the global climate, and that a nuclear war fought with their strategic nuclear weapons would kill most people on Earth. They both answered "no." More recently, on April 20, 2014, I asked the same question and received the same answer from the US officials sent to brief representatives of the NGOS at the Non-Proliferation Treaty Preparatory Committee meeting at the UN. None of the US officials at the briefing were aware of the studies. Those present included top officials of the National Security Council. It is frightening that President Obama and his administration appear unaware that the world's leading scientists have for years predicted that a nuclear war fought with the US and/or Russian strategic nuclear arsenal means the end of human history. Do they not know of the existential threat these arsenals pose to the human race . . . or do they choose to remain silent because this fact doesn't fit into their official narratives? We hear only about terrorist threats that could destroy a city with an atomic bomb, while the threat of human extinction from nuclear war is never mentioned – even when the US and Russia are each running huge nuclear war games in preparation for a US-Russian war. Even more frightening is the fact that the neocons running US foreign policy believe that the US has "nuclear primacy" over Russia; that is, the US could successfully launch a nuclear sneak attack against Russian (and Chinese) nuclear forces and completely destroy them. This theory was articulated in 2006 in "The Rise of U.S. Nuclear Primacy," which was published in Foreign Affairs by the Council on Foreign Relations. By concluding that the Russians and Chinese would be unable to retaliate, or if some small part of their forces remained, would not risk a second US attack by retaliating, the article invites nuclear war. Colonel Valery Yarynich (who was in charge of security of the Soviet/Russian nuclear command and control systems for 7 years) asked me to help him write a rebuttal, which was titled "Nuclear Primacy is a Fallacy." Colonel Yarynich, who was on the Soviet General Staff and did war planning for the USSR, concluded that the "Primacy" article used faulty methodology and erroneous assumptions, thus invalidating its conclusions. My contribution lay in my knowledge of the recently published (in 2006) studies, which predicted even a "successful" nuclear first-strike, which destroyed 100% of the opposing side's nuclear weapons, would cause the citizens of the side that "won"[would] the nuclear war to perish from nuclear famine, just as would the rest of humanity.

Xia, et.al. (2022): A nuclear war would result in billions of deaths coupled with catastrophic food insecurity

Xia, Lili et. al. "Global food insecurity and famine from reduced crop, marine fishery and livestock production due to climate disruption from nuclear war soot injection." Nature Food. August 15 2022. https://www.nature.com/articles/s43016-022-00573-0#Sec5

Using state-of-the-art climate, crop and fishery models, we calculate how the availability of food supplies could change globally under various nuclear war scenarios. We combine crops and marine fish and also consider whether livestock and animal products continue to be an important food source. For a regional nuclear war, large parts of the world may suffer famine—even given the compensating behaviours considered in this paper. Using crops fed to livestock as human food could offset food losses locally but would make limited impacts on the total amount of food available globally, especially with large atmospheric soot injections when the growth of feed crops and pastures would be severely impaired by the resulting climate perturbation. Reducing household food waste could help in the small nuclear war cases but not in the larger nuclear wars due to the large climate-driven reduction in overall production. We find particularly severe crop declines in major exporting countries such as Russia and the United States, which could easily trigger export restrictions and cause severe disruptions in import-dependent countries24. Our no-trade response illustrates this risk—showing that African and Middle Eastern countries would be severely affected. Our analysis of the potential impacts of nuclear war on the food system does not address some aspects of the problem, leaving them for future research. In all the responses, we do not consider reduced human populations due to direct or indirect mortality and possible reduced birth rate. The total number and composition of population changes would affect available labour, calorie production and distribution. Also, we do not consider farm-management adaptations such as changes in cultivar selection, switching to more cold-tolerating crops or greenhouses31 and alternative food sources such as mushrooms, seaweed, methane single cell protein, insects32, hydrogen single cell protein33 and cellulosic sugar34. Although farmer adaptation35 and alternative food sources could reduce the negative impact from a simulated nuclear war, it would be challenging to make all the shifts in time to affect food availability in Year 2, and further work should be done on these interventions. Current food storage can alleviate the shortage in Year 1 (ref. 14) but would have less impact on Year 2 unless it were rationed by governments or by the market. Expanding or shifting cropping land to favourable climate regions would increase crop production. Further studies on adaptation and the impacts on short-term food availability are needed, but those topics are beyond the scope of this study. Adaptation in fisheries is also not considered, such as changes in the use of discarded bycatch and offal in fisheries. These include reduced availability of fuel, fertilizer and infrastructure for food production after a war, the effects of elevated ultraviolet radiation36 on food production and radioactive contamination37. While this analysis focuses on calories, humans would also need proteins and micronutrients to survive the ensuing years of food deficiency (we estimate the impact on protein supply in Supplementary Fig. 3). Large-scale use of alternative foods, requiring little-to-no light to grow in a cold environment38, has not been considered but could be a lifesaving source of emergency food if such production systems were operational. In conclusion, the reduced light, global cooling and likely trade restrictions after nuclear wars would be a global catastrophe for food security. The negative impact of climate perturbations on the total crop production can generally not be offset by livestock and aquatic food (Fig. 5a). More than 2 billion people could die from a nuclear war between India and Pakistan, and more than 5 billion could die from a war between the United States and Russia (Table 1). The results here provide further support to the 1985 statement by US President Ronald Reagan and Soviet General Secretary Mikhail Gorbachev and restated by US President Joe Biden and Russian President Vladimir Putin in 2021 that 'a nuclear war cannot be won and must never be fought'.

Pummer 15: All moral frameworks must weigh nuclear war

Pummer, Theron. "Moral Agreement on Saving the World." Practical Ethics. May 18 2015. https://blog.practicalethics.ox.ac.uk/2015/05/moral-agreement-on-saving-the-world/

There appears to be a lot of disagreement in moral philosophy. Whether these many apparent disagreements are deep and irresolvable, I believe there is at least one thing it is reasonable to agree on right now, whatever general moral view we adopt: that it is very important to reduce the risk that all intelligent beings on this planet [are] is eliminated by an enormous catastrophe, such as a nuclear war. tHow we might in fact try to reduce such existential risks is discussed elsewhere. My claim here is only that we – whether we're consequentialists, deontologists, or virtue ethicists – should all agree that we should try to save the world. According to consequentialism, we should maximize the good, where this is taken to be the goodness, from an impartial perspective, of outcomes. Clearly one thing that makes an outcome good is that the people in it are doing well. There is little disagreement here. If the happiness or well-being of possible future people is just as important as that of people who already exist, and if they would have good lives, it is not hard to see how reducing existential risk is easily the most important thing in the whole world. This is for the familiar reason that there are so many people who could exist in the future – there are trillions upon trillions… upon trillions. There are so many possible future people that reducing existential risk is arguably the most important thing in the world, even if the well-being of these possible people were given only 0.001% as much weight as that of existing people. Even on a wholly person-affecting view – according to which there's nothing (apart from effects on existing people) to be said in favor of creating happy people – the case for reducing existential risk is very strong. As noted in this seminal paper, this case is strengthened by the fact that there's a good chance that many existing people will, with the aid of life-extension technology, live very long and very high quality lives. You might think what I have just argued applies to consequentialists only. There is a tendency to assume that, if an argument appeals to consequentialist considerations (the goodness of outcomes), it is irrelevant to non-consequentialists. But that is a huge mistake. Non-consequentialism is the view that there's more that determines rightness than the goodness of consequences or outcomes; it is not the view that the latter don't matter. Even John Rawls wrote, "All ethical doctrines worth our attention take consequences into account in judging rightness. One which did not would simply be irrational, crazy." Minimally plausible versions of deontology and virtue ethics must be concerned in part with promoting the good, from an impartial point of view. They'd thus imply very strong reasons to reduce existential risk, at least when this doesn't significantly involve doing harm to others or damaging one's character. What's even more surprising, perhaps, is that even if our own good (or that of those near and dear to us) has much greater weight than goodness from the impartial "point of view of the universe," indeed even if the latter is entirely morally irrelevant, we may nonetheless have very strong reasons to reduce existential risk. Even egoism, the view that each agent should maximize her own good, might imply strong reasons to reduce existential risk. It will depend, among other things, on what one's own good consists in. If well-being consisted in pleasure only, it is somewhat harder to argue that egoism would imply strong reasons to reduce existential risk – perhaps we could argue that one would maximize her expected hedonic well-being by funding life extension technology or by having herself cryogenically frozen at the time of her bodily death as well as giving money to reduce existential risk (so that there is a world for her to live in!). I am not sure, however, how strong the reasons to do this would be. But views which imply that, if I don't care about other people, I have no or very little reason to help them are not even minimally plausible views (in addition to hedonistic egoism, I here have in mind views that imply that one has no reason to perform an act unless one actually desires to do that act). To be minimally plausible, egoism will need to be paired with a more sophisticated account of well-being. To see this, it is enough to consider, as Plato did, the possibility of a ring of invisibility – suppose that, while wearing it, Ayn could derive some pleasure by helping the poor, but instead could derive just a bit more by severely harming them. Hedonistic egoism would absurdly imply she should do the latter. To avoid this implication, egoists would need to build something like the meaningfulness of a life into well-being, in some robust way, where this would to a significant extent be a function of other-regarding concerns (see chapter 12 of this classic intro to ethics). But once these elements are included, we can (roughly, as above) argue that this sort of egoism will imply strong reasons to reduce existential risk. Add to all of this Samuel Scheffler's recent intriguing arguments (quick podcast version available here) that most of what makes our lives go well would be undermined if there were no future generations of intelligent persons. On his view, my life would contain vastly less well-being if (say) a year after my death the world came to an end. So obviously if Scheffler were right I'd have very strong reason to reduce existential risk. We should also take into account [for] moral uncertainty. What is it reasonable for one to do, when one is uncertain not (only) about the empirical facts, but also about the moral facts? I've just argued that there's agreement among minimally plausible ethical views that we have strong reason to reduce existential risk – not only consequentialists, but also deontologists, virtue ethicists, and sophisticated egoists should agree. But even those (hedonistic egoists) who disagree should have a significant level of confidence that they are mistaken, and that one of the above views is correct. Even if they were 90% sure that their view is the correct

one (and 10% sure that one of these other ones is correct), they would have pretty strong reason, from the standpoint of moral uncertainty, to reduce existential risk. Perhaps most disturbingly still, even if we are only 1% sure that the well-being of possible future people matters, it is at least arguable that, from the standpoint of moral uncertainty, reducing existential risk is the most important thing in the world. Again, this is largely for the reason that there are so many people who could exist in the future – there are trillions upon trillions… upon trillions. (For more on this and other related issues, see this excellent dissertation). Of course, it is uncertain whether these untold trillions would, in general, have good lives. It's possible they'll be miserable. It is enough for my claim that there is moral agreement in the relevant sense if, at least given certain empirical claims about what future lives would most likely be like, all minimally plausible moral views would converge on this conclusion that we should try to save the world. While there are some non-crazy views that place significantly greater moral weight on avoiding suffering than on promoting happiness, for reasons others have offered (and for independent reasons I won't get into here unless requested to), they nonetheless seem to be fairly implausible views. And even if things did not go well for our ancestors, I am optimistic that they will overall go fantastically well for our descendants, if we allow them to. I suspect that most of us alive today – at least those of us not suffering from extreme illness or poverty – have lives that are well worth living and that things will continue to improve. Derek Parfit, whose work has emphasized future generations as well as agreement in ethics, described our situation clearly and accurately: "We live during the hinge of history. Given the scientific and technological discoveries of the last two centuries, the world has never changed as fast. We shall soon have even greater powers to transform, not only our surroundings, but ourselves and our successors. If we act wisely in the next few centuries, humanity will survive its most dangerous and decisive period. Our descendants could, if necessary, go elsewhere, spreading through this galaxy…. Our descendants might, I believe, make the further future very good. But that good future may also depend in part on us. If our selfish recklessness ends human history, we would be acting very wrongly."

Miscalculation

Radzinsky (2021): miscalculation is possible during both periods of peace and crisis, creating a constant risk of nuclear escalation

B. Radzinsky. "Miscalculation, Misperception, and Risk Reduction." Lawrence Livermore National Laboratory. September 10 2021. https://www.osti.gov/servlets/purl/1820013

Miscalculation is an error of judgment—the failure to accurately assess a situation. Miscalculation can result from hidden, incomplete, or ambiguous information, or from inaccurate processing of available information because of bias, overconfidence, denial, delusion, etc. Miscalculation is related to misperception. For some, they are synonymous. This paper characterizes the risks of miscalculation and introduces a discussion of a risk mitigation strategy. In peacetime, the principal risk associated with miscalculation is escalation to crisis or war. This can result from 1) deterrence failure, in which miscalculation leads one side to forcefully challenge the other's interests or 2) inadvertent escalation, in which one side sees benign actions as aggressive. First, deterrence could fail if Red or Blue miscalculates the scope of the other's interests. As a result, Blue might underestimate Red's interest in revising the status quo. For example, in 1950, the U.S. failed to take seriously the possibility that North Korea would invade the South. More recently, the West failed to anticipate the possibility that Russia might seek to annex Crimea. This form of miscalculation can arise from ambiguous communication, poor intelligence, or bias, such as self-delusion or denial. Second, deterrence could fail if one side miscalculates the depth of a rival's commitment to its interests—its resolve. This pathway differs from the former in that each side's interests are known, but one side may miscalculate how hard the other side is willing to fight for them. In 1941, Japan miscalculated in believing that an attack on Pearl Harbor would compel Washington to back down in opposing Japanese expansion. Miscalculation can result from ambiguity about resolve, a crowded information environment, an inability to send or receive signals of resolve, or bias. Finally, miscalculation of the military balance could lead to deterrence failure. Miscalculation of the military balance could encourage opportunism even if interests and resolve are assessed accurately. For example, in 1967, Egypt and Jordan attacked Israel because they miscalculated its military power. Miscalculation can result from subjective and objective factors, such as clandestine capabilities (e.g., cyber exploits); rapid shifts in the military balance; an even balance of power; or bias. Miscalculation could also trigger a crisis between competitors that are not actively seeking to revise the status quo. Although Red and Blue are likely to have strong incentives to avoid war in peacetime, inadvertent escalation could result from three pathways. First, either side might misperceive incidental or accidental actions as intentional acts. Such mishaps are unlikely to trigger war directly because the act itself would trigger scrutiny of other potential indicators of adversary intent. While this process unfolds, however, a crisis may ensue that opens new avenues for escalation. Second, even if the mishap itself is not misperceived, either side could miscalculate the intent behind the other's response. While blue assesses damage to space assets, for instance, Blue might prudently change the readiness of forces affected by the failure of the space asset, and Red might misperceive this response. Third, miscalculation could exacerbate the escalatory potential of shifts in the military balance. For instance, the revelation of a new military capability could lead a rival to scrutinize the intent behind these actions and suspect aggressive intent. For example, North Korea's development of an intercontinental ballistic missile triggered a crisis because it became difficult to assess whether North Korea sought strategic stability or instead sought to use nuclear deterrence to enable aggression at lower levels of violence. Escalation in these scenarios depends on each side's ability to distinguish between benign and aggressive intent, the consequences of strategic surprise, the resilience of each side's forces, and each side's security and competitive strategies. With respect to the latter, some strategies may court rather than mitigate risk. For instance, gray zone competition can increase the risk of both "false positives" (escalatory responses to real mishaps) and "false negatives" (weak responses to real aggression). Miscalculation in crisis can result in a failure to deter the outbreak of war via the same pathways as above. First, in a crisis, either side could continue to miscalculate the scope of the other's interests. Although the immediate interests at stake in a crisis would become clear, Blue might underestimate Red's willingness to exploit the crisis to secure a related interest; Red might seize on the crisis to

engage in horizontal escalation. For instance, Russia annexed Crimea weeks into the Euromaidan crisis. Second, a crisis could escalate to war through Blue or Red's failure to assess the other's resolve. Although Blue and Red will have strong incentives to signal their resolve in a crisis over vital interests, in a more complex crisis, miscalculations of resolve may accompany miscalculation of interests. In the Crimean crisis, NATO did not see a need to signal resolve because it miscalculated Russia's interests. If a crisis arises from a mishap, Blue may be hesitant to engage in overt shows of resolve to avoid provoking rather than deterring Red. A crisis atmosphere may also make signaling harder due to a complex and contested information environment, further limiting each side's "strategic vocabulary." Third, a crisis may exacerbate the risk of miscalculating the military balance. All sides will have incentives to be less transparent and predictable. To preserve warfighting advantages, Blue may be hesitant to reveal decisive capabilities, especially those that depend on secrecy. Blue may also hesitate to court escalatory risk through signaling capabilities while Red may conceal forces used for hybrid warfare.

Nimark (2022): Any conflict involving nuclear states introduces a high likelihood of nuclear miscalculation

Nimark, Agnieszka. "Nuclear Rhetoric Escalation and Risks of Miscalculation in Ukraine." Barcelona Centre for International Affairs. November 2022.
https://www.cidob.org/en/publications/nuclear-rhetoric-escalation-and-risks-miscalculation-ukraine

Just a couple of days into the war in Ukraine, Russian President Vladimir Putin publicly put Russian nuclear forces on a higher state of alert, signaling the Kremlin's ability to escalate if wanted. Since then, the nuclear warnings have been used by Russia on various occasions to remind the United States and NATO that if they get too involved in the conflict Moscow could use any means at its disposal with catastrophic consequences. Lately though, at the Valdai Discussion Club held on October 27, President Putin denied having any intentions of using nuclear weapons in Ukraine. Speaking at the conference, Putin said that it is pointless for Russia to strike Ukraine: "There is no point in that, neither political nor military". He added that the previous warnings of his readiness to use "all means available to protect Russia" were merely a response to Western statements about their possible use of nuclear weapons. While most of the military and nuclear arms experts cannot rule out the use of these weapons in Ukraine, they tend to agree that the actual likelihood of such a move is very low. Intelligence-wise there are no signs that Putin is preparing for any use of nuclear weapons. Militarily, Russia does not have trained troops that could take advantage of a tactical nuclear weapon strike. In other words, military experts do not see a battlefield advantage to use any nuclear armament. From the strategic point of view, nuclear signaling seems to be less about real planning and more about deterring the West from expending its help to Ukraine. At this stage of the war, Russia might be trying to discourage the United States from sending advanced weapons systems to Ukraine, like the Army Tactical Missile System, a longer-range weaponry known as ATACMS. Michael McFaul, a former US Ambassador to Russia and a scholar, told the New York Times that Putin was achieving already a practical military objective just by talking about nuclear weapons: "The Biden administration has supplied Ukraine with billions of dollars in weapons, which have changed the course of the war, but it has held off giving Kyiv longer-range missiles, tanks and fighter planes. They are being deterred by Putin." Some are still tempted to conclude that nuclear deterrence works, arguing that NATO's nuclear restraint has limited Russia's 'military operation' exclusively to the territory of Ukraine. We should emphasize that for Russia, the possession of nuclear weapons not only enabled Moscow to invade Ukraine but also helped to prevent a direct NATO's military involvement. Vladimir Putin might have never invaded Ukraine if Moscow did not have nuclear weapons as a backup. Besides, no one can foresee consequences of further military escalation, sabotage operations involving attacks on critical infrastructure, or accidental destruction of a nuclear plant. In truth, the NATO allies have been walking the fine line between providing military support to Ukraine and not provoking a NATO conflict with Russia. The risk of miscalculation with nuclear forces pointed at each other by two major nuclear powers remains high. A wide range of military operations conducted at the time of increased tensions could easily lead to misperceptions or mistakes. A nuclear drill (Steadfast Noon) recently conducted by NATO could be considered problematic in the sense of nuclear signaling, despite its routine nature. Russia has also notified its intention to conduct a routine nuclear exercise (Grom), which might involve launching of intercontinental ballistic missiles, as it did in the past. In a similar way, the sabotage operations, and attacks on critical infrastructure such as explosions destroying Nord Stream 1 and 2 gas pipelines, or the Crimean Bridge, could lead to significant escalation. Most recently, Russia threatened to strike Western commercial satellites that are helping Ukraine to counter the invasion. This threat has also raised concerns among space lawyers and industry executives about the safety of objects in orbit. Such a strike could severely escalate tensions between Russia and the United States. The danger of nuclear weapons' use has been looming over Ukraine since the beginning of the Russian invasion. However, the

possible use of nuclear arms in Ukraine is just one of the nuclear risks that has emerged from Russia's war. Unfortunately, some states might see new incentives to get their own weapons, others might consider the use of civilian nuclear-power plants as tools for terror too. All these developments are happening against the backdrop of a new nuclear arms race and a near collapse of arms control agreements. The Stockholm International Peace Research Institute (SIPRI), which assesses the current state of armaments, disarmament, and international security, indicates in the recently published Yearbook 2022 that global nuclear arsenals are expected to grow as states continue to modernize.

O'Neill (2019): The cost of nuclear deterrence is increased conflict, the stability-instability paradox proves

O'Neill, Barry. "A Game Theory Analysis of the Stability-Instability Paradox. Game Theory and Nuclear Stability in Northeast Asia. 2019. https://apps.dtic.mil/sti/trecms/pdf/AD1075536.pdf#page=74

The stability–instability paradox is not particularly well defined, so its general topic is more important than its exact statement. The general stability/balance metaphor can be misleading. Such a metaphor implies that there is some physical activity happening, and all this activity must somehow be equal. However, its general idea is that if a conventional war is less likely to lead to nuclear war, states are more likely to get into smaller conflicts. In other words, stability at the nuclear strategic level can cause instability at lower levels. Think in terms of country dyads (although this could get generalized to include more than two states), with each country in one such pair. Each country is going to be more confident in its ability to deter an attack on its strategic interests, which means it will be more ready to fight for its peripheral interests.

Proxy Wars

Clarke 2025: Nuclear weapons raised the threshold of warfare, increasing the frequency of proxy wars as a "lesser conflict"

Clarke, Catie. "Deterrence Without Peace: Nuclear Weapons and the Rising Threshold of Warfare." Toor Cummings Center for International Studies and the Liberal Arts International Relations Department. December 17 2025. https://digitalcommons.conncoll.edu/cgi/viewcontent.cgi?article=1099&context=sip

Nuclear weapons fundamentally changed the international political landscape. In Hiroshima and Nagasaki, over one hundred thousand people died instantly from the two atomic bombs dropped by the United States. The world had never experienced instant annihilation on such a scale, completely altering state perception of what kind of destruction is possible. This paper argues that nuclear weapons created a new, raised Threshold of Warfare, with nuclear weapons becoming the most extreme option on a scale of violence. This scale now acts as a benchmark by which states judge the severity of a conflict. The raised Threshold of Warfare has led to an escalation in three regards: the frequency of proxy wars, the level of benefactor involvement, and the severity of conflicts fought with conventional weapons in proxy states. After seeing the destructive capabilities of nuclear weapons, state actors become more tolerant of 'less extreme' types of conflict. This categorization encompasses any type of non-nuclear conflict, including proxy warfare. The Korean War was the first proxy war in the nuclear era, demonstrating that it was possible to engage in proxy conflict without using nuclear weapons. Not only was it possible, proxy wars in the nuclear era were both effective and came at 'relatively little cost.' Major-power benefactors judge proxy conflicts through a narrow lens defined by their own interests. Proxy conflicts leave proxy states unstable and weak, leading to significant demographic, economic, and political consequences. Some of these consequences are not specific to proxy wars during the nuclear era, and can be seen in previous proxy wars like the Spanish Civil War. For example, after both the Korean War and the Spanish Civil War, there was a rise of a centralized governmental structure which led to internal corruption and authoritarianism. Nonetheless, the costs incurred by proxy states are often ignored by major-power benefactors in favor of a 'cheaper' means to conduct war. This has caused the international community, often led by these same major-power benefactors, to become more tolerant of proxy warfare as one of these 'lesser' conflicts. As a result of this process, hegemonic states like the United States and the Soviet Union escalated the frequency of proxy wars. Proxy warfare became a key part of Soviet and American war strategies during the Cold War.

Hegemony and Non-Domination

Saadia et.al (2023): Current regimes of nuclear possession regimes are shaped by racism and discrimination

Saadia, Haleema and Faines, Mari, et.al. The Ultimate Colonizer: Challenging Racism and White Supremacy in Nuclear Weapons Policymaking. De-siloing Existential Threats: Challenging Identity, Power, and Inclusivity in the Nuclear Policy Field. 2023. https://basicint.org/anthology-de-siloing-existential-threats/

Racism and discrimination have played a significant role in shaping the historiography of nuclear weapons and non-proliferation issues. The structure of the non-proliferation regime, such as the creation of the NPT and the IAEA board membership, has perpetuated a racialised and colonial discourse. For example, Western countries have historically held a significant presence on the board, while the representation of non-Western states, particularly from the Global South, has been limited. Determinations regarding which states can legally and politically possess nuclear weapons and make non-proliferation policies for others to follow are arguably rooted in the racialised and colonial frameworks. The instances of racism can be traced back to the early days of the nuclear era with the Manhattan Project. Nuclear weapons policy making regarding the selection of nuclear weapons production sites, nuclear testing sites, and nuclear weapons targets (for example, the debate about the legitimacy of potential targets, including why Hiroshima and Nagasaki were good targets as opposed to the culturally richer Japanese city Kyoto112), as well as nuclear waste disposal sites, depicts racism and discrimination. Many of these sites were located in low-income, and in communities or countries of colour including, Marshall Islands, Navajo reservations, Western Sahara, and the list continues. The success of the NPT-based non-proliferation regime in preventing the wider proliferation of nuclear weapons is debatable, as it may also be attributed to independent efforts by states to refuse nuclear weapons, for example, the establishment of nuclear weapons-free zones in Latin America, Africa, Oceania, and Southeast Asia.113 The recent trilateral security pact between the United States, Australia and the United Kingdom, also known as AUKUS, to share nuclear technology is an example of how extended deterrence commitments while arguably rooted in strategic considerations, can also cede non-proliferation concerns to racial logic. The civilisational discourse depicts that in the post-1945 international order, the United States and the West have aimed to preserve their military dominance by strengthening their own armed forces while suppressing other countries' efforts to do the same, as it was interpreted as undermining Western control. The systemic hierarchies of racism, white supremacy, and colonialism were not only built into the formation of the global nuclear order, but were embedded into nuclear weapons production, development, and testing at the outset of the nuclear age. These processes privileged certain nations based on the colonial power dynamics and established them as arbiters of nuclear legitimacy which is depicted by the politically neutral view of proliferation, ignorance of drivers of proliferation, and perpetuation of global power imbalances. Their consequences have lasted to this day.

Saadia et.al (2023): Nuclear possession has only been made possible through the continued domination, exploitation, and suffering of marginalized peoples

Saadia, Haleema and Faines, Mari, et.al. The Ultimate Colonizer: Challenging Racism and White Supremacy in Nuclear Weapons Policymaking. De-siloing Existential Threats: Challenging Identity, Power, and Inclusivity in the Nuclear Policy Field. 2023. https://basicint.org/anthology-de-siloing-existential-threats/

The extensive nuclear testing during the Cold War had the same profound impacts on global (marginalised) communities as a nuclear war. Despite no nuclear exchange between the nuclear weapons states, it was the non-nuclear weapon states which suffered the consequences of radioactive fallout by experiencing early mortality, disease, displacement, and contamination of food sources and ecosystems.114 Nuclear testing: Nuclear weapons states were aware of the long-term harmful effects of radiation contamination due to nuclear testing. This is the reason the United States tested most of its nuclear weapons in territories of other countries and France and the United Kingdom did not test a single weapon on their own soil. The United States government understood the disastrous effects of radioactive fallout due to the testing of hydrogen bombs and made it a policy to not test the H-bomb on the United States mainland. Even though the United States studied the behaviour of fallout particles in ecosystems and strategised how to weaponise these effects to both kill and psychologically terrify an enemy population, it asserted that fallout from these tests posed no health risk to people living downwind from test sites.115 France's nuclear tests in Algeria during the 1960s caused widespread environmental contamination and negative health effects on local populations. Many Algerians who worked on the tests have suffered from illnesses, including cancer, and their families continue to be affected by the tests' long-lasting effects. Despite this, the French government has not acknowledged the harm caused by the tests or provided sufficient compensation to those affected.116 Nuclear weapons production: Indigenous peoples and their lands have been exploited by Western governments and corporations for nuclear weapons production. These sites of nuclear colonialism extend over every continent: 70% of the world's uranium is mined from Indigenous lands in Kazakhstan, Australia, Canada, and 15% is mined in African nations.117 Indigenous scholars and activists have been instrumental in raising awareness about this issue.118 The uranium used for Fat Man, the bomb dropped by the United States on Nagasaki, was mostly mined from the Congo, a former Belgian colony.119 The Congolese miners who worked in the Shinkolobwe mine, where the uranium was extracted, were subjected to forced labour, harsh conditions, and exposure to radiation without proper protection.120 They were treated as disposable and expendable by the Union Minière du Haut Katanga (UMHK), the Belgian mining company that owned the mine and sold the uranium to the United States and its allies.121 The Congolese people were not informed of the link between their uranium and the bombs that killed hundreds of thousands of Japanese civilians, nor were they compensated or acknowledged for their contribution to the Manhattan Project. Nuclear waste is routinely dumped on Native lands in the United States and Canada, violating the 2008 UN Declaration of the Rights of Indigenous Peoples.122 This racial and colonial ecology in the nuclear fuel cycle harms Indigenous people, for example, the mining of uranium in Indigenous lands in North America.123 The largest United States nuclear accident occurred in Church Rock, New Mexico, in 1979, just three months after the more widely remembered Three Mile Island incident, yet it is little discussed today outside of New Mexico, highlighting the colonial politics of erasure in what kinds of nuclear waste disasters are remembered.124 United States decision to attack Japan: The atomic bombing of Japan was motivated by military and strategic considerations, also arguably involved racial prejudice and imperial ambition, which was used to demonstrate the superiority and dominance of the Western powers over Japan and other non-white nations. The decision to use nuclear weapons against Japan was influenced by racist stereotypes and propaganda that portrayed the Japanese as subhuman and fanatical enemies who deserved no mercy.125 The nuclear weapons policy making was dominated by white men who excluded and marginalised the voices and perspectives of people of colour, women, and other groups who were affected by the nuclear threat.126

Johnson (2015): Nuclear testing in the Marshall Islands exemplifies the devastating effects of nuclear colonialism on indigenous communities

Johnson, Barbara Rose. "Nuclear disaster: The Marshall Islands experience and lessons for a post-fukushima world." January 2015. https://www.researchgate.net/publication/283228095_Nuclear_disaster_The_Marshall_Islands_experience_and_lessons_for_a_post-fukushima_world

Between 1946 and 1958, the United States detonated twenty-three nuclear bombs on or above Bikini, forty-three more devices on or above Enewetak, and another device approximately eighty-five miles from Enewetak, atomizing entire islands and blanketing the entire Marshallese nation with measurable levels of radioactive fallout from twenty of these tests.5 The total explosive yield of nuclear militarism in the Marshall Islands was equivalent to more than seven thousand Hiroshima bombs. Iodine-131 comprised an estimated two percent of the resulting radioactive fallout; all told some 8 billion curies of I-131 were released into the atmosphere above the Marshall Islands: forty-two times greater than the 150 million curies released as a result of the testing in Nevada, 150 times greater than the 40 million curies released as a result of the Chernobyl nuclear disaster.6 Hydrogen bomb tests, especially the March 1, 1954 Bravo Test, were immensely destructive (cf. Breslin and Cassidy 1955).7 The Castle Bravo explosion was visible from 250 miles with a mushroom cloud stretching 60 miles across; it vaporized several small islands and left a mile-wide crater on the atoll and generated heavy radioactive fallout across a 50,000 square mile area. It remains, to this day, the largest and "dirtiest" nuclear weapon the US ever tested. Communities living immediately downwind suffered near fatal exposures,8 and people on Rongelap, Ailinginae, and Utrik atolls were evacuated.9 One consequence of these tests is that the entire nation was exposed to dangerous levels of fallout, a fact documented in the 1950s but kept classified until after a Compact of Free Association had been NEGotiated and adopted by US Congress. US military testing in the Marshall Islands was a scientific enterprise involving the detonation of nuclear bombs, the testing of biochemical10 and ballistic missile weapons, and radiation ecology studies. This militarized scientific agenda established an ecological baseline in the marine and terrestrial environment; subsequent studies chronicled the nature and behavior of radioactive fallout in the atmosphere, marine, and terrestrial environment, and the bioaccumulation of radioisotopes in the environment, food chain, and human body.11 Collectively, this radioecology research documented the presence and movement of radioisotopes in the environment and food chain. For example, radioiron (Fe-55) in fallout from the 1958 nuclear tests was documented in terrestrial and marine environments, including lagoon sediments, coral reefs, and reef fish, with alarming levels in goat fish liver. This knowledge was not shared with the scientific world until 1972, nor shared with Marshallese until the declassification order supporting an Advisory Commission on Human Radiation investigation forced bilateral disclosure to the Marshall Islands Government in the 1990s. The movement of cesium through the soils, and bioaccumulation in coconut crabs, trees, and fruit—a primary source of food and liquid in the Marshallese diet—was also documented, with restrictions on the consumption of coconut crab periodically issued without explanation. To understand the human health effects of acute exposure to high levels of radiation, under the guise of humanitarian aid in 1954 the people of Rongelap, Ailinginae, and Utrik, were enrolled as human subjects in a classified medical research program known as "Project 4.1." Merril Eisenbud's comments in a classified 1956 scientific research planning conference are insightful: We think that one very intriguing study can be made and plans are on the way to implement this—"Uterik" Atoll is the atoll furthest from the March 1 shot where people were exposed got initially about 15 roentgens and then they were evacuated and they returned. They had been living on that Island; now that Island is safe to live on but is by far the most contaminated place in the world and it will be very interesting to go back and get good environmental data, how many per square mile; what isotopes are involved and a sample of food changes in many humans through their urines, so as to get a measure of the human uptake when people live in a contaminated environment. 146 Barbara Rose Johnston Now, data of this type has never been available. While it is true that these people do not live, I would say, the way Westerners do, civilized people, it is nevertheless also true that these people are more like us than mice. So that is something which will be done this winter. (ACBM 1956:232–33)12 In 1957, the goal of establishing a living laboratory to study the movement of radiation through the environment, food chain, and human body and the related human health effects of low-level exposure to radiation in a controlled setting was achieved when the Rongelap community was repatriated to their contaminated atoll.13 Over the next four decades, US medical teams traveled to the Marshall Islands to document radiogenic health on select islands and conduct human subject experiments without informed consent. All told, some 539 men,

women, and children from Rongelap, Utrik, Likiep, Enewetak, and Majuro atolls served as human subjects in studies documenting the varied late effects of radiation.[14] This classified research generated an array of findings. Acute exposures to radiation stimulate short-term effects. Late effects can emerge many years following initial exposure. Radioiodine-131 adheres to and accumulates in the thyroid stimulating the production of benign and cancerous nodules and interfering with the production of hormones, leaving pregnant women and children especially vulnerable. And people who were not exposed to an acute level of ionizing radiation but were exposed to low-levels on a daily basis because they lived in an area contaminated by fallout also developed thyroid and other radiogenic health problems. The classified nature of this research also meant that the relationships between nuclear weapons testing, fallout, contamination of the environment, human subsistence in that environment, and degenerative health were not explained to the Marshallese until decades had passed. Human radiation experimentation records declassified in the 1990s demonstrate degenerative health outcomes from radiation exposure, including changes in red blood cell production and subsequent anemia; metabolic and related disorders; immune system vulnerabilities; musculoskeletal degeneration; cataracts; cancers and leukemia; miscarriages, congenital defects, and infertility. Declassified documents also demonstrate that US scientists fully expected adverse health effects to not only occur in the first generation of people exposed to fallout, but in the subsequent generations of people who live in a contaminated setting. Marshallese health records bear out these expectations.

Country-Specific Evidence

Iran

Sonnenfeld and Boehler (2023): The Israel-Hamas conflict has distracted much of the world from Iran's Nuclear program. It's not too late to stop them but we need continued US presence

Sonnenfeld, Jeffery and Boeheler, Adam. "Amid the Israel-Hamas War, Iran Approaches Nuclear Breakout." Time Magazine. December 9th 2023. Amid the Israel-Hamas War, Iran Approaches Nuclear Breakout | TIME

Sonnenfeld is a TIME columnist, global governance expert, and senior associate dean and Lester Crown Professor of Management Practice at the Yale School of Management. Boehler is the founder and CEO of Rubicon Founders, a healthcare investment firm. He served in the Trump Administration as the founding Chief Executive Officer of the U.S. International Development Finance Corporation, the U.S. government's international investment arm.

As the Israel-Hamas War Governs the World's Attention, Iran Is Quietly Marching Towards Nuclear Breakout IRAN-POLITICS-NUCLEAR Iran's Bushehr nuclear power plant, pictured here in 2019, has been closely monitored by the U.N.'s International Atomic Energy Agency.ATTA KENARE—Getty Images IDEAS BY JEFFREY SONNENFELD AND ADAM BOEHLER DECEMBER 9, 2023 11:27 AM EST Sonnenfeld is a TIME columnist, global governance expert, and senior associate dean and Lester Crown Professor of Management Practice at the Yale School of Management. He helped advise the development of the Abraham Accords and helped organize and produce the 2019 Peace Through Prosperity Conference, which served as a foundation for the normalization of diplomatic relations between Israel and Arab nations. Boehler is the founder and CEO of Rubicon Founders, a healthcare investment firm. He served in the Trump Administration as the founding Chief Executive Officer of the U.S. International Development Finance Corporation, the U.S. government's international investment arm. He served on the NEGotiating team for the Abraham Accords and led the normalization discussions between Israel and Morocco. He was also a founding member of Operation Warp Speed and is currently a board member at the Atlantic Council and the U.S. Holocaust Memorial Museum When Hamas and the Palestinian Islamic Jihad invaded Israel on Oct.7, they didn't just perpetrate the most deadly attack on Jews since the Holocaust. The Iran-trained and supported terrorists also helped divert[ed] the world's attention away from how Iran is quietly, but quickly, marching towards nuclear breakout In February, top Biden Administration official Colin Kahl, the then-Under Secretary of Defense for Policy, admitted that Iran could soon assemble a crude nuclear device in days. Understandably, the U.S. and its allies are now focused on urgent, immediate regional crises—namely the IDF's military operation to eliminate Hamas from Gaza and dealing with the ever-growing threat of militant group Hezbollah in Lebanon But a nuclear Iran remains the gravest long-term regional security threat facing Israel, the Middle East, and the United States, and it is not too late to stop Iran's pursuit of a nuclear weapon. Watch more from TIME Click to unmute The diplomatic backdrop has already changed considerably for Iran's nuclear aspirations In the weeks and months before the Oct. 7 attack, Israel and Saudi Arabia were close to completing a normalization agreement, building off the Abraham Accords, which were originally conceived by its architect Jared Kushner and which both of us were involved in advising and negotiating. The imminent addition of Saudi Arabia—home of Mecca, the spiritual center of Islam—to the Abraham Accords likely motivated Hamas' attacks on Israel.Saudi-Israel normalization would have been disastrous for Iran's Supreme Leader Ayatollah Ali Khamenei, Iran's terrorist proxies, and the Iranian regime's stated goal of destroying Israel. The more that the people of the region accept Israel's existence, the harder it becomes for Tehran to obliterate the Jewish state and assert dominance over the Middle East. More From TIME We remain confident Saudi Arabia will eventually recognize Israel's existence, but not right now. The scenes of Israeli fighters marching through Gaza broadcast throughout the Middle East threaten to inflame a pre-existing hatred of Israel that makes normalization politically untenable at this time, even for Gulf monarchies not beholden to voting publics.

We firmly judge this derailment of the next phase of the Abraham Accords as the great geopolitical casualty of the Oct. 7 attack. Even more importantly, the Ayatollah seems to believe the West is now further distracted and perhaps more deterred from confronting Iran over its nuclear program, as full-fledged nuclear weapons creep ever closer to fruition. The strides Iran has made in its nuclear program over the last few years have flown under the radar. Today, Tehran has enough enriched uranium to produce a nuclear weapon in only 12 days according to data collected from the International Atomic Energy Agency (IAEA). Iran is essentially a nuclear threshold state given their stockpile of uranium, with estimated enrichment levels as high as 84%. For context, 90% is the benchmark for full breakout capability. International sanctions on the regime's ballistic missile program have also been allowed to expire, giving the regime carte blanche to further develop and proliferate the delivery vehicles necessary for a potential strike with the ability to reach Tel Aviv, Haifa, or even a European capital. Provided by Jeffrey Sonnenfeld and Adam Boehler The potential destructive power of an Iranian nuclear weapon is obvious, but even the mere threat of a nuclear Iran is a potent weapon for the Ayatollah right now. He has surely seen how Vladimir Putin's nuclear threats seemingly deterred the U.S. from fully supporting Ukraine, according to experts including former American diplomat John E. Herbst. The Ayatollah may feel emboldened to run the same playbook now, especially if Israel reoccupies Gaza for the long-term or Hezbollah aggression compels the Israeli military to enter Lebanon in the months ahead The U.S. has repeatedly backed down from even minor confrontation with Iran in the interests of avoiding a wider regional war, including responding rather timidly to attacks on U.S. troops in Iraq by Iran-backed militias in recent weeks. As 60 Minutes detailed in November, the regime's assassination campaigns on U.S. soil against U.S. officials and dissidents also continue apace. It seems conceivable that the Ayatollah may continue to scale the escalation ladder with increasingly potent nuclear threats. U.S. and Israeli officials have messaged resolve not to let Iran obtain a nuclear weapon, but whether Israel and the U.S. actually have the political will to destroy the Iranian bomb-making program remains to be seen. Provided by Jeffrey Sonnenfeld and Adam Boehler Even with Iran entrenched as a nuclear threshold state, it is not too late to stop the West Asia country from obtaining nuclear weapons. The U.S. should be galvanized by the current conflict to restore deterrence against Iran—beginning with stronger enforcement of sanctions designed to cut off the regime's number one source of income: oil revenues. The money generated from its petroleum exports funds Iran's nuclear program and terrorist proxies alike, with windfall profits from increased oil exports, as we've discussed previously. As Secretary of State in 2016, John Kerry proudly proclaimed that the world was safer thanks to the nuclear deal he engineered, which released $150 billion in sanctions relief to Iran. In hindsight, Kerry's sheepish admission that some of that money might go towards terrorism has proven sadly prescient, and we should hit pause on this spigot immediat. Additionally, the U.S. must continue to pressure the IAEA to conduct rigorous inspections of Iranian nuclear facilities and hold the regime accountable when it does not abide by its commitments. An IAEA report released on Sept. 4 stated: "Iran's decision to remove all of the agency's equipment previously installed in Iran for JCPOA-related surveillance and monitoring activities has also had detrimental implications for the agency's ability to provide assurance of the peaceful nature of Iran's nuclear program." To deter nuclear escalation, the world must impose new, tougher costs on Iran when it skirts IAEA regulations, stopping the country in its tracks before it progresses any further towards an actual nuclear weapon. Failure to do so makes it increasingly likely that Iran asserts control on the escalation ladder through nuclear threats, whether in the crisis in Israel or with increasing support for its terrorist proxies in Lebanon, Yemen, Iraq, Syria, and beyond. American policy makers are rightly seized with the urgent and important work of supporting Israel's counter-offensive efforts against terrorists in Gaza. We should not, however, lose sight of the fact that the current crisis is inextricably tied to the strategic imperative of stopping Iran's march to the bomb. Should we fail to urgently address and counter Iran's nuclear program, today's conflicts in the Middle East will likely become far worse.

Trexel and Lowther (2023): Nuclear adoption by Iran will create instant instability

Trexel, Jonathan and Lowther, Adam. "Preventing a Nuclear Armed Iran: Shifting to Deterrence is Long Overdue." RealClear Defense. August 10 2023. https://www.realcleardefense.com/articles/2023/08/10/preventing_a_nuclear-armed_iran_shifting_to_deterrence_is_long_overdue_972009.html

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Why a Nuclear-Armed Iran is a Bad Idea A nuclear-armed Iran is wholly unacceptable given the costs and risks. First…nuclear weapons may allay Iran's fear of external attack, they would provide [Iran] it the means to employ nuclear coercion, [and] devastate Israel, and eventually hold the "Great Satan" at risk. NATO's European member-states will face [at] risk before the United States, making the Iran challenge a problem for them as well. Second, an Iranian nuclear state would create instant instability and uncertainty stemming from Iranian capabilities, intentions, lack of nuclear bargaining experience, and the dilemma [risk] of nuclear control should the regime collapse. Third, Saudi Arabia and other[s] Middle East states have already let the United States know that a nuclear Iran will undoubtedly lead to nuclear proliferation. Fourth, Iran could become emboldened to expand terrorism, proxy wars or use non-nuclear weapons of mass destruction. Fifth, American credibility, whatever is left, may be too limited for the United States to effectively achieve its foreign policy aims. With Saudi Arabia already turning to China, the Middle East will be a very unfriendly place if Iran goes nuclear. U.S. Policy Options The United States has three basic options to support its non-proliferation policy. First, the U.S. can continue with diplomacy, using economic levers to entice Iranian restraint. This is favored by many European capitals, despite Iran's clear willingness to suffer economically to advance its nuclear weapons program. Second, the U.S. can employ a deterrence policy option of various threats aimed at influencing Iran to forego weapons acquisition and reverse course. Israel favors deterrence. This option could involve the U.S. military demonstrating its ability to strike Iran's nuclear facilities; delivering the KC-46 tankers purchased by Israel in 2022; exercising the full JCPOA UN-directed sanctions "snap back" option; and delegitimizing Iran's reckless leaders. Third, the U.S. can conduct a preemptive military strike of Iran's nuclear facilities. This would be taken to deny Iranian nuclear breakout if deterrence fails. The goal would be eliminating the nuclear threat, not regime change. Conclusions It is high time the United States shift[s] its approach to ensuring Iran does not develop a nuclear weapon. Moving away from diplomacy to active deterrence while preparing active efforts is the obvious choice. American diplomacy has enabled Iran to further its nuclear ambitions such that it now sits on the precipice of becoming a nuclear power. We are past due in taking the kind of actions that ensure Iran is deterred. There can be no doubt, the current regime seeks nuclear weapons and is a pariah in the international system. Inaction and empty words only delay the inevitable and that day is getting closer and closer.

Kahl and Waltz (2012): With nuclear deterrence, Iran would provide Hezbollah and other militant groups with weapons of mass destruction

Kahl, Colin H and Waltz, Kenneth N. “Iran and the Bomb: Would a Nuclear Iran Make the Middle East More Secure?” Foreign Affairs. September 2012.
https://www.jstor.org/stable/pdf/41720870.pdf?refreqid=excelsior%3Aed4fbb3773720e7f2170f6fa7b6eb98a&ab_segments=&origin=&initiator=&acceptTC=1

Specifically, a nuclear-armed [Iran] Tehran would likely provide Hezbollah and Palestinian militants with more sophisticated, longer-range, and more accurate conventional weaponry for use against Israel. In an effort to bolster the deterrent capabilities of such allie. Iran might consider giving them "dual-capable" weapons, leaving Israel to guess whether these systems were conventional or armed with chemical, biological, or nuclear material[;]. A nuclear-armed Iran might also give its proxies permission to use advanced weapons systems instead of keeping them in reserve, as Tehran reportedly instructed Hezbollah to do during the militant group's 2006 war with Israel. A nuclear-armed Iran, believing that it possessed a powerful deterrent and could thus commit violence abroad with near impunity, might also increase the frequency and scale of the terrorist attacks against U.S. and Israeli targets carried out by Hezbollah and the Quds Force, the covert operations wing of Iran's elite Islamic Revolutionary Guard Corps. And a bolder Iran might increase the number of Revolutionary Guard forces it deployed to Lebanon, allow its navy to engage in more frequent shows of force in the Mediterranean, and assert itself more aggressively in the Persian Gulf and the Strait of Hormuz. To further enhance its image in the eyes of domestic and regional audiences as the leader of an anti-Western resistance bloc, a nuclear-armed Iran might respond to regional crises by threatening to use all the means at its disposal to ensure the survival of the Assad regime in Syria, Hezbollah, or Palestinian groups. Iran might be emboldened to play the spoiler in the Israeli-Palestinian peace process by encouraging large-scale militant attacks and might try to destabilize its neighbors through more coercive diplomacy and subversion in Iraq and the Gulf states. The growing influence of "principlist" hard-liners in Tehran makes those possibilities even more likely. The principlists' view of the world is shaped by their ideological belief in the inevitability of U.S. decline, Israeli defeat, and Iranian ascendance. They see the competition with the United States and Israel as a zero-sum game. If Iran obtains a nuclear weapon, the principlists will see it as a confirmation of their convictions and push the Iranian government further in the direction of risk and provocation. To be sure, a nonnuclear Iran is already engaged in many destabilizing activities. But equipped with nuclear weapons, Tehran would likely dial up its troublemaking and capitalize on its deterrent to limit the response[s] options available to threatened states.

Incirlik[26]

Pappalardo 19: Nuclear weapons positioned in Incirlick have the potential to inflame political tensions and perpetuate instability

Pappalardo, Joe. "Could someone actually steal a US nuke?" Popular Mechanics. October 25 2019. https://www.popularmechanics.com/military/weapons/a29576180/us-nuke-theft/

PALs = Permissive Active Links, to limit who can detonate a (stolen) nuclear weapon The eyes of the world have become fixed on the estimated 50 B61 nuclear bombs stored at Incirlik Air Base in Turkey. As the Turkish military operations in Syria strain relations with the U.S., the security of the bombs has become a potential concern and a certain geopolitical headache. One unidentified senior U.S. official expressed worry to The New York Times that the bombs are being "held hostage" by Turkish President Recep Tayyip Erdogan. Extreme caution is always warranted where nukes are concerned, but what is the actual risk of rogue nuclear bombs pose? How well guarded are they, and what could someone do if they got their hands on them? Nuclear McGuffins The first thing to consider when contemplating any heist is the loot. At the center of the stage here are B61 nuclear bombs. Designed in 1963, these have what's known as a variable yield; set a dial on the various versions and you get a blast as small as .3 kilotons or as high as 340 kt. For some scale, the U.S. dropped a 15 kt bomb on Hiroshima. The bombs are sleek but heavy. They are each 11 feet long, and 13 inches thick, and weigh about 700 pounds. There are 25 underground secure vaults called Weapons Security Storage Systems dug into the ground inside aircraft protective shelters. Each W3 can hold up to four of these nuclear weapons, but there are only 50 at Incirlik, according to a report this week from The New York Times and confirmed by President Donald Trump's tweets. The location of tactical nuclear weapons in aircraft shelters is part of the Cold War legacy, when airplanes remained on alert to drop tactical nukes on any Soviet hordes advancing along its southern flank. But today, no warplanes at Incirlik these days are even capable of carrying the nukes. As the Cold War's influence faded, there was an impulse to remove tactical nuclear weapons from Europe, including the gravity bombs kept in Turkey. "We kind of missed the moment, I would say, about 10 years ago.," says Sharon Squassoni, a George Washington University professor, former State Department official and member of the Science and Security Board of the Bulletin of Atomic Scientists. "If a country like Germany had decided, 'Yeah, let's get them all out,' you might have had a removal of all U.S. tactical nuclear weapons, but it didn't happen," she says. "And then, of course, you have the invasion by Russia into Crimea and Eastern Ukraine." Geopolitics, not strategy, kept the B61 bombs in place in Turkey. Now the situation on the ground is changing, as Turkey has defied the U.S. and pushed into Syria, attacking (now-former) U.S. allies and even bracketing U.S. advisor positions with artillery fire. To further complicate things, Incirlik is only 70 miles from the Syrian border, leading to questions over the security of the nuclear bombs. But can you even set off a stolen nuke? It's not easy — but that is not the only risk that a rogue nuke poses. Strong and Weak Links Naturally, there are many methods in place to make nukes hard to set off by accident or without authorization. But the technical details about the bombs themselves are seldom discussed, so what we know is based on public sources, some dating back decades to when these weapons were first created. The first design principal [sic] to consider is called strong link/weak link, built into new nukes since 1975. "Critical elements of the detonator system are deliberately 'weak' in that they will irreversibly fail if exposed to certain kinds of abnormal environments," writes Columbia University's Steven Bellovin, a cybersecurity professor at Columbia University who has collected reams of open source material on nuclear weapon protections. "A commonly-used example is a capacitor whose components will melt at reasonably low temperatures." An example of a "strong link" that protects the bomb is the detonation system, which is electrically separated from the rest of the bomb so that it won't be fried by bursts of energy (like other exploding bombs or jamming.) "The strong link provides electrical isolation of the detonation system," Bellovin writes. "It only responds to very particular inputs." The upshot for potential nuke thieves is that it's hard to set off a nuclear bomb under any condition except the specific one baked into its design. A similar obstacle to deploying a stolen U.S. nuclear bomb is the Environmental Sensing Device built into the weapon. These sensors detect what the nuke is going through — acceleration, gravity, barometric pressure, and so on. If the bomb isn't experiencing what it's supposed to during a flight and drop, the warhead won't arm itself. These are all good things that keep thieves from using nukes. But keep in mind that these systems are mostly put in place for safety reasons. In other words, to prevent a nuke from detonating by accident or to make sure it goes off when intended. There are other layers of protection that are designed for security, i.e. protection from theft and unauthorized use. This brings us to the shady world of PALs — Permissive Action Links. Protected by PALs This brings us to the shady world of PALs — Permissive Action Links. PALs are the locks built into the weapon casings that must be opened before the weapon can be armed. Once only rotary mechanical locks, they have been replaced by harder to crack electromechanical systems. "PALs are more advanced devices built into weapon casings and not removable without disassembly of the entire warhead," writes Chuck Hansen, in 1995's The Swords of Armageddon: U.S. Nuclear Weapons Development Since 1945. "Many U.S. nuclear weapons are reportedly 'booby-trapped' to destroy critical internal components if

[26] For context, the United States has about 50 B61 nuclear weapons at the Incirlik air base in Turkey. I (Tristan) personally really enjoy super specific arguments like this on topics which are very vague, just make sure to do enough work with linking, impacts, and topic analysis to make sure this lets you prove your burden.

the casing is disassembled." The nukes in Turkey have the most advanced Category F permissive action lock, which "incorporates a multiple-code, 12-digit switch with lockout which disables the warhead after repeated attempts to enter codes," Hansen says. There are other threats—from insider theft to terrorist raids—that are more likely than seizure of the weapons by a NATO ally. "Maybe it's not the Turkish government that gets it, but some non-state actor[s could]," says Squassoni. "They steal it, dismantle it, and they don't understand what they're doing, but they have the fissile material. So then what do they do with that? How crude of a weapon are they willing to make do with?" Some people don't have faith that PALs are enough to completely render a rogue nuclear weapon useless from a nation-state with a nuclear agenda. "You could slow down a determined state actor with probably the most sophisticated PALs, but it's only designed to delay," says Vipin Narang, an associate professor of Political Science at MIT and author of the book Nuclear Strategy in the Modern Era. "And that still wouldn't stop a state actor [could] from being able to reverse engineer it… You're going to use that particular weapon, but you can take certain parts of it apart and be able to re-engineer it without the PAL." Much of the security designed into a nuclear bomb makes it inoperable when tampered with. But a nation state interested in reverse engineering the system is not interested in setting off the weapon, and more willing to ruin it while cracking it open to glean any tips or secrets. So the one to gain biggest from a stolen nuke, even if disabled, appears to be Turkey. "The incremental risk if a U.S. nuclear weapon is compromised by another nuclear power is comparatively small," writes Columbia's Bellovin. "But a non-nuclear power—or group—would benefit greatly from anything that improved their odds of using someone else's bombs." His words predate this crisis, but they ring true today. It just so happens that Turkey is such a non-nuclear power, and one with an expressed interest in having nuclear weapons. Upgraded Base, Unexpected Threat No one wants to say that Turkey can grab control of the U.S. nuclear bombs stored in that country, and the Turkish government has been quiet on the topic. But that nightmare scenario is on a lot of people's minds. "I'm not saying that the Turkish military, certainly not the Air Force or anybody there, would try to boost or threaten the weapons," says Narang. "But the security measures on Incirlik are not designed to prevent the Turks from taking over the NATO area." One big part that makes the nuclear base secure is that it is cocooned inside a Turkish airbase. That becomes a liability if the Turks themselves are complicit or directly involved in an aggressive move on the bombs. So what does that security force look like surrounding American nukes on foreign soil? Courtesy of NATO upgrades to these facilities, we have a decent idea. In 2016 the Defense Department released its revised "Nuclear Weapon Security Manual," which reflects the 2016 NATO upgrades to places that keep nuclear weapons. "A security force of 15 or more personnel (unless otherwise stated), appropriately armed and equipped, " the declassified but redacted document describes. That reaction force swings into action specifically when the nukes are threatened, so that means dozens of armed guards appearing on top of the usual contingent of security troops. Some of these responders would include specialists like explosive ordnance disposal experts and combat engineers who can break into fortified areas seized by enemies. The Incirlik base itself has undergone a security makeover. Much of the work described in the DoD manual has been confirmed and completed by the Federation of American Scientists researchers, using commercially available satellite imagery. This includes new fences and 30-foot clear zones that, according to the DoD document, are "designed to facilitate detection and observation of an intruder, to deny protection and concealment to the intruder, to maximize effectiveness of security force weapons, and to reduce the possibility of surprise attack." A focus on defense against ground intrusion is part of the new complexion in Turkey. "We know exactly there's a new perimeter around 21 of these vaults where the actual bombs are," says Squassoni, citing the satellite images. The nuclear storage areas are also protected by boundary detection systems, sensors that cocoon the area and alert guards when it's pierced. NATO also requires intrusion detection systems that detect unauthorized access inside the protected area. An example of these systems can be found at remote ICBM launch sites, where small radar domes bathe the silo with energy. Nearby security teams are ready to respond whenever the radar waves perceive movement. A last-ditch category of defenses is called Facility Denial Subsystems. These vary from base to base. "Denial subsystems may be either lethal or nonlethal," the NATO document says. "And based upon technologies such as laser, microwave, remotely operated weapons, various projectile launching munitions, or other technologies that will stop or incapacitate intruders before they achieve unauthorized access." The final layer of protection is the Weapons Storage and Security System units themselves where the nuclear bombs are entombed. Details are scant and opinions vary, but these may be only as tough as the people trying to get into them. "It's not like accessing the vault is not difficult for a 2 No Way Out With all of the hang-wringing about these nuclear bombs, the immediate impulse for many is to get them out. "I think a lot of folks are now thinking that the risks are higher than the rewards for keeping those weapons there," says Squassoni. But it's easier said than done. The NATO section of the airbase at Incirlik is surrounded by a Turkish base. Moving the 50 bombs would require dismantling the security systems and transiting them to a flight line under Turkish control. Recall that no U.S. airplanes on base are qualified to fly them, so a nuke-capable C-130 would have to come and fetch them. This does not sound like a recipe for a quiet removal. "You're very, very dependent and very vulnerable to Turkey in this operation if you decided to move them out," says Narang. Even if the Americans did manage to sneak the nukes from Turkey, the move could be a diplomatic slap in the face that helps drive Turkey from NATO. Here's another problem. If the situation in Turkey deteriorates to the point when the U.S. needs to relocate the 50 bombs, it may be too unsafe to remove them from the security cocoon where they now sit. "There are risks when you move things," says Narang. "They're actually probably more secure in the vaults at the

moment. The U.S. is kind of caught between a rock and a hard place. We should've moved them out a long time ago, but moving them now is probably riskier than just keeping them in the vault." Others argue that the time is right to airlift them from the area, no matter how awkward the conversation with Turkey. "Whether the weapons are there or not is not going to make our relationship better," says Squassoni. "Could it make it worse? I would argue that Turkish actions are more to blame in terms of worsening U.S.-Turkish relations, but obviously taking those weapons out, you'd have to ask if you could do it quietly." Even if the Turks don't talk about them, the nuclear weapons in Incirlik are on the table as bargaining chips in a dangerous geopolitical game between regional and global powers. The irony is that these weapons, located abroad to reassure an ally against a threat that no longer exists, are now a source of such destabilization and friction.

Gale and Armitage 18: An attack using stolen weapons would be devastating and kill or maim hundreds of thousands

Gale, P. Robert and Amitage, James O. "Are we prepared for nuclear terrorism?" The New England Journal of Medicine. March 28 2018. https://www.nejm.org/doi/full/10.1056/NEJMsr1714289

Things can get considerably worse. The U.S. Department of Homeland Security and the Federal Emergency Management Agency (FEMA) developed 15 Disaster Planning Scenarios to deal with potential terrorist attacks and natural disasters. Scenario 1 is entitled "Nuclear Detonation — 10 Kiloton Improvised Nuclear Device." In this scenario, planners consid a situation in which terrorists from a "Universal Adversary" assemble a 10-kiloton nuclear device stolen from a nuclear facility in the former Soviet Union, smuggle the components into the United States, assemble it in a van, and detonate it in the center of Washington, D.C.6 What would happen? First, the percussive force, projectiles, and superfires would cause complete destruction or severe damage to buildings within 1 km of the epicenter and extending out to approximately 6 km. (A nuclear weapon is most effective when detonated approximately 1 km above the hypocenter rather than at ground level.) Communications would be disrupted by electromagnetic forces from the detonation. Many people within the immediate vicinity would be killed immediately, as would emergency and medical personnel, including many physicians and health care providers. Persons at greater distances, including first responders, would be exposed to high doses of neutron and gamma radiation from the initial blast and from radioactive fallout, which typically occurs after a ground detonation (Figure 2). Figure 3 compares the relative effects of a nuclear weapon, an improvised nuclear device, a radiologic dispersion device, and a radiologic exposure device. In the scenario of an attack with an improvised nuclear device, there would be approximately 100,000 immediate deaths and another 100,000 casualties requiring medical intervention. Guidelines for triaging these huge numbers of casualties have been published.7 Approximately half a million people would need to shelter in place for hours or days, after which they would leave the area in a planned and, hopefully, orderly evacuation. Although there are, of course, huge political, economic, social, psychological, and societal consequences associated with this scenario, our focus here is on medical preparedness and especially on dealing with radiation-induced bone marrow failure. If you think the notion of commandeering a nuclear weapon is far-fetched, consider this: during the recent attempted military coup in Turkey, dozens of U.S. nuclear weapons were at risk for takeover at the Incirlik Air Base, which is close to the border with Syria, where a civil war has been raging for 7 years. And although some argue that these weapons would be inoperable because of electronic safeguards (permissive action links), we and others are not convinced.

Negative Evidence[27]

Nuclear Deterrence

Tertrais (2022): Definition of deterrence

Tertrais, Bruno. "What Future For Nuclear Deterrence?" Fondation L'Innovation Politique. October 2022. https://www.fondapol.org/app/uploads/2022/10/fondapol-study-bruno-tertrais-what-future-for-nuclear-deterrence-10-2022-1.pdf

Deterrence differs from persuasion and coercion, which involve convincing an actor to do something: the former by inducement; the latter by compulsion: demanding peace, for example. Coercion can be applied through an ultimatum - such as the Potsdam Declaration, which threatened Japan with "rapid and total destruction" if it did not surrender unconditionally - or through the use of force - such as the bombing of Hiroshima and Nagasaki. It is also distinct from dissuasion, which consists in persuading an actor to do something without the use of force. As Lawrence Freedman puts it, "Deterrence can be a technique, doctrine and a state of mind. In all cases it is about setting boundaries for actions and establishing risks associated with crossing these boundaries" 2 . Its foundations therefore exist in all areas of human activity, including international relations. The threat of economic sanctions, for example, is a form of deterrence - which failed with Russia in the winter of 2021-2022. Deterrence does not require fully rational actors. Rather, they must have a modicum of rationality, i.e. the ability to assess costs and benefits, even if erroneously. There must also be a "sufficiently shared normative framework"3 . The philosophers of the 18th century developed this concept by emphasizing certainty and celerity of punishment (Cesare Beccaria) or clarity, predictability and proportionality (Jeremy Bentham)4 . Contemporary criminology attests to the fact that the probability of response is fundamental - more so in relative terms than the severity of the punishment for transgression. This means that the reputation of the party seeking to deter, whether it is the police or a military adversary, is paramount. But deterrence also relies in part on fear. Deterrence comes from the Latin word terrere, which means "to frighten," and it does not require the recipient to be perfectly rational and can even be reinforced when the sender does not appear to be perfectly rational. Richard Nixon called it the "madman theory" and Donald Trump also adopted such a posture. In sum, deterrence is therefore more of an art than a science, and more like a game of poker than a game of chess.

[27] Please note that these cards are NOT fully cut – we believe it is usually best for debaters to cut their own cards and decide how they are best read in order to be advantageous for their individual cases. However, we have highlighted what we consider to be relevant sections to provide a guide on where you might cut the card.

Tertrais (2018): Nuclear deterrence has reduced conflict between great powers

Tertrais, Bruno. “The Causes of Peace: The Role of Deterrence.” Recherches and Documents. January 2018. https://frstrategie.org/sites/default/files/documents/publications/recherches-et-documents/2018/201802.pdf

Exhibit A in support of nuclear deterrence is the absence of major power war since 1945.16 If one defines great powers as the five permanent members of the United Nations Security Council, which are also the five Nuclear Weapons States in the sense of the Nuclear Nonproliferation Treaty (NPT), clearly there was never any open military conflict between them, even less a major war (1,000 battle-related deaths in a single year). A broader definition including Germany and Japan, which are protected by the US nuclear umbrella, also makes the cut. John Lewis Gaddis forged the expression the “Long Peace” forty years after the end of the Second World War; it is now seven decades old. No comparable period of great power peace has ever existed in the history of modern States (perhaps not even since the Roman Empire). For instance, there were two dozen conflicts among major powers in the equivalent amount of time following the Treaties of Westphalia (1648), and nine between the Vienna Congress (1815) and the First World War.17 Is there not here an exceptional proposition that deserves an explanation? The idea of a Long Peace has been challenged by two arguments. The first is that it is not so exceptional. Here, coding (i.e. what is a major power war? what is the relevant duration of the Long Peace?) is the bone of contention. Some would mark its beginning only in 1947 (the Iron Curtain speech), in 1949 (the first Soviet nuclear test), or even in 1953 (the end of the Korean War). Some would end it as early as 1989: the narrowest definition thus leads to a “Short Long Peace” of only… 36 years. If one simultaneously discounts some past events as being non-major power wars, then previous periods of nonwar become lengthier, thus negating the exceptionality of the Long Peace. For instance, discounting the Franco-Spanish War of 1823 and the First Russian-Turkish War of 1828- 1829 leads to a 33 years period of great power peace (1815-1848); and discounting the Second Russian-Prussian War of 1877-1878 and the Russian-Japanese War of 1905 leads to a 43 years period of peace (1871-1914). Thus two authors claim that “historical periods of major power peace are frequently as long as forty-two years”. 18 This is a valuable debate, but I am not convinced of the “banality of the Long Peace”. First, because I find the coding of the Korean War as a major power one debatable. It pitted US-led UN forces against North Korea and, a few months later, its Chinese ally. At that time, the People’s Republic of China was neither a permanent member of the UN Security Council (its Second World War victor’s seat was occupied by Taipei), nor an economic giant, a formidable military power, or a nuclear State. Its intervention was mostly defensive: the fear that the United States forces would attack China.19 Second and most importantly, because I find no reason to conclude the Long Peace in 1989 or any posterior year. Even if one uses 1953 as a starting point and demotes several past major power wars, 63 years without a great power war is an exceptional duration. The second is that it is statistically irrelevant. According to Pasquale Cirillo and Nassim Nicholas Taleb, the history of large-scale wars shows a fat-tailed distribution, in which properties such as the mean are determined by extremes. It is also a homogeneous Poisson (purely random) process in the past 500 years. A seventy-year period without a massively destructive event means nothing from a statistical point of view, given that in the past 2,000- plus years, the “waiting time” between two 10-million deaths events – an example taken from their results – is, on average, 133 years, and the mean absolute deviation is 136 years (though only 52 and 63 years when rescaled to today’s population).20 Steven Pinker accepts that the distribution of wars may be a Poisson process but writes: “nothing says that the probability has to be constant over long stretches of time”.21 The occurrence of major war may be random, but its probability not constant, a “non-stationery Poisson process with a declining rate parameter”. 22 He accepts the theoretical possibility that the Long Peace could be just a statistical illusion, but argues that a combination of historically unprecedented developments that have accompanied the absence of major power war gives credence to the idea that “something new” is happening, lowering the chances of such war, without discarding the possibility of a new one, which could be even more destructive than its predecessors.23 Cirillo and Taleb reply that “data does not support the idea of a structural change in human belligerence”.24 They do not, however, limit their analysis to great power wars, the immediate topic of our analysis, and their paper does not directly address whether or not the absence of any great power war (be it a 1,000 deaths one or a 10 million one) in the past 63 years is a statistical anomaly. It is quite possible that the Long Peace is not statistically exceptional and thus does not need an explanation. However, if there is a credible explanation for it, then it may not be just a long period of non-major powers war (in addition to the fact that each year without a nuclear war makes the “Long Peace through Nuclear Deterrence” hypothesis more credible). Especially since two other interesting phenomena have been observed. A broader dataset includes other dyads of nuclear-armed countries involving India, Israel, North Korea, Pakistan and South Africa (until the late 1980s). There has never been a major war between two nuclear-armed States.25 Beyond this mere observation, two recent quantitative studies have shown that the possession of nuclear weapons by two countries significantly reduced – all things equal – the likelihood of war between them.26 Events in Asia since 1949 provide an interesting test case. China and India fought a war in 1962, but have refrained from resorting to arms against each other ever since. There were three India-Pakistan wars (1947, 1965 and 1971) before both countries became nuclear; but since the late 1980s (when the two countries acquired a minimum nuclear capability), none of the two has launched any significant air or land operations against the other. Neither the Ussuri crisis of 1969, nor the Kargil conflict of 1999, qualify as major wars (none caused the death of more than 1,000).The third data set concerns dyads in which only one party is endowed with or protected by nuclear weapons. No nuclear-armed country has ever been invaded, or its territory the object of a major military attack.28 The 1973 Yom Kippur War and the 1982

Falklands War are often suggested as counter-examples. But these are not persuasive. Israel was invaded in 1948, on the day of its independence. But in 1973, Arab States deliberately limited their operations to disputed territories (the Sinai and the Golan Heights).29 It is thus incorrect to take the example of the Yom Kippur war as a "proof" of the failure of nuclear deterrence. (Likewise, India refrained from penetrating "undisputed" Pakistani territory since 1990, whereas it had done so in 1965 and 1971.) The Falklands Islands, invaded by Argentina in 1982, were a British Dependent Territory for which nothing indicates that it was covered by nuclear deterrence. Furthermore, it would be erroneous to take these two events as evidence that extended deterrence does not make sense, since the latter is meant to cover interests that are much more important to the protector than non-essential territories; for instance, during the Cold war Germany was much more "vital" to the United States than, say, Puerto Rico. No country covered by a nuclear guarantee has ever been the target of a major attack. Here again evidence can be found a contrario. The United States refrained from invading Cuba in 1962, for instance (the 1961 Bay of Pigs attempted invasion was a proxy operation), but did not hesitate in invading Grenada, Panama or Iraq. The Soviet Union invaded Hungary, Czechoslovakia and Afghanistan, but not a single US treaty ally. China has refrained from invading Taiwan, which benefits from a US de facto defense commitment, even if (deliberately) ambiguous. North Korea invaded its southern neighbor in 1950 after Washington had excluded it from its "defensive perimeter", but has refrained from doing so since Seoul has been covered with a nuclear guarantee. US allies South Vietnam or Kuwait were not covered by a US nuclear protection. Russia could afford to invade Georgia or Ukraine because they were not North Atlantic Treaty Organization (NATO) members.

Waltz 2012: Nukes are the only effective deterrent against other nukes, Iran and Israel confirm

Waltz, Kenneth N. “Why Iran Should Get the Bomb.” Foreign Affairs. August 2012. https://www.jstor.org/stable/pdf/23218033.pdf?refreqid=excelsior%3A9c501094c846784390c18446a7961ba2&ab_segments=&origin=&initiator=&acceptTC=1

The third possible outcome of the standoff is that Iran continues its current course and publicly goes nuclear by testing a weapon. U.S. and Israeli officials have declared that outcome unacceptable, arguing that a nuclear Iran is a uniquely terrifying prospect, even an existential threat. Such language is typical of major powers, which have historically gotten riled up whenever another country has Israel's regional nuclear monopoly, which has proved remarkably durable for the past four decades, and has long fueled instability in the Middle East. In no other region of the world does a lone, unchecked nuclear state exist. It is Israel's nuclear arsenal, not Iran's desire for one, that has contributed most to the current crisis. Power, after all, begs to be balanced. What is surprising about the Israeli case is that it has taken so long for a potential balancer to emerge. Of course, it is easy to understand why Israel wants to remain the sole nuclear power in the region and why it is willing to use force to secure that status. In 1981, Israel bombed Iraq to prevent a challenge to its nuclear monopoly It did the same to Syria in 2007 and is now considering similar action against Iran. But the very acts that have allowed Israel to maintain its nuclear edge in the short term have prolonged an imbalance that is unsustainable in the long term. Israel's proven ability to strike potential nuclear rivals with impunity has inevitably made its enemies anxious to develop the means to prevent Israel from doing so again. In this way, the current tensions are best viewed not as the early stages of a relatively recent Iranian nuclear crisis but rather as the final stages of a decades-long Middle East nuclear crisis that will end only when a the balance of military power is restored. do so after the eu announced its planned oil embargo in January. The Iranian clearly concluded that it didn't want to provoke what would surely have been a swift and devastating American response to such a move. One reason the danger of a nuclear Iran has been grossly exaggerated is that the debate surrounding it has been distorted by misplaced worries and fundamental misunderstandings of how states generally behave in the international system. The first prominent concern, which undergirds many others, is that the Iranian regime is innately irrational. Despite a widespread belief to the contrary, Iranian policy is made not by "mad mullahs" but by perfectly sane ayatollahs who want to survive just like any other leaders. Although Iran's leaders indulge in inflammatory and hateful rhetoric, they show no propensity for self-destruction. It would be a grave error for policymakers in the United States and Israel to assume otherwise. Yet that is precisely what many U.S. and Israeli officials and analysts have done. Portraying Iran as irrational has allowed them to argue that the logic of nuclear deterrence does not apply to the Islamic Republic. If Iran acquired a nuclear weapon, they warn, it would not hesitate to use it in a first strike against Israel, even though doing so would invite massive retaliation and risk destroying everything the Iranian regime holds dear. Although it is impossible to be certain of Iranian intentions, it is far more likely that if Iran desires nuclear weapons, it is for the purpose of providing for its own security, not to improve its offensive capabilities (or destroy itself). Iran may be intransigent at the NEGotiating table and defiant in the face of sanctions, but it still acts to secure its own preservation. Iran's leaders did not, for example, attempt to close the Strait of Hormuz despite issuing blustery warnings that they might Nevertheless, even some observers and policymakers who accept that the Iranian regime is rational still worry that a nuclear weapon would embolden it, providing Tehran with a shield that would allow it to act more aggressively and increase its support for terrorism. Some analysts even fear that Iran would directly provide terrorists with nuclear arms. The problem with these concerns is that [but] they contradict the record of every other nuclear weapons state going back to 1945. History shows that when countries acquire the bomb, they feel increasingly vulnerable and become acutely aware that their nuclear weapons make them a potential target in the eyes of major powers. This awareness discourages nuclear states from bold and aggressive action. Maoist China, for example, became much less bellicose after acquiring nuclear weapons in 1964, and India and Pakistan have both become more cautious since going nuclear. There is little reason to believe Iran would break this mold. As for the risk of a handoff to terrorists, no country could transfer nuclear weapons without running a high risk of being found out. U.S. surveillance capabilities would pose a serious obstacle, as would the United States' impressive and growing ability to identify the source of fissile material. Moreover, countries can never entirely control or even predict the behavior of the terrorist groups they

sponsor. Once a country such as Iran acquires a nuclear capability, it will have every reason to maintain full control over its arsenal. Why Iran Should. Get the Bomb After all, building a bomb is costly and dangerous. It would make little sense to transfer the product of that investment to parties that cannot be trusted or managed. states. Once Iran crosses the nuclear threshold, deterrence will apply, even if the Iranian arsenal is relatively small. No other country in the region will have an incentive to acquire its own nuclear capability, and the current crisis will finally dissipate, leading to a Middle East that is more stable than it is today. Another oft-touted worry is that if Iran obtains the bomb, other states in the region will follow suit, leading to a nuclear arms race in the Middle East. But the nuclear age is now almost 70 years old, and so far, fears of proliferation have proved to be unfounded. Properly defined, the term "proliferation" means a rapid and uncontrolled spread. Nothing like that has occurred; in fact, since 1970, there has been a marked slowdown in the emergence of nuclear states. There is no reason to expect that this pattern will change now. Should Iran become the second Middle Eastern nuclear power since 1945, it would hardly signal the start of a landslide. When Israel acquired the bomb in the 1960s, it was at war with many of its neighbors. Its nuclear arms were a much bigger threat to the Arab world than Iran's program is today. If an atomic Israel did not trigger an arms race then, there is no reason a nuclear Iran should now.

Hagal, et.al. (2021): Aggression from Russia China and North Korea, in combination with a series of military reductions in the Middle East have made nuclear deterrence an increasingly important issue

Hagal, Chuck, Rifkind, Malcolm, and Rudd, Kevin. "Preventing Nuclear Proliferation and Reassuring America's Allies." The Chicago Council on Global Affairs. https://globalaffairs.org/sites/default/files/2021-02/report_preventing-nuclear-proliferation-reassuring-americas-allies.pdf

In recent decades, the threat of nuclear proliferation has emanated primarily from the Middle East and from south and northeast Asia. But the proliferation threat wasn't always concentrated in these regions. Long before countries like North Korea and Iran topped the list of nuclear threats, leaders in Washington and elsewhere worried about a different group of countries—America's allies in Europe and Asia. Indeed, in the early 1960s, intelligence officials projected that by the mid-1970s there likely would be 10 to 15 nuclear powers in the world within a decade, as countries like Australia, Germany, Italy, Japan, South Korea, and Turkey would opt to join a growing nuclear club. The nuclear Non-Proliferation Treaty (NPT) of 1968 was designed to prevent this, and it did. But it succeeded in large part because of a concerted US effort since the 1960s to reassure its allies around the world that America's nuclear umbrella would extend to their territory and ensure their security. Rather than developing their own national nuclear capabilities, key allies in Europe and Asia opted to rely on the US nuclear guarantee instead. Since the NPT entered into force in 1970, just four countries (India, Israel, Pakistan, and North Korea) have acquired nuclear weapon. More recently, however, questions about the credibility of the American nuclear guarantee have arisen again in Europe and Asia. Allies in both regions confront growing military threats from a resurgent Russia, a rising China, and a nuclear North Korea At the same time, successive US administrations have sought to retreat from some longstanding commitments, leaving America's allies around the world uncertain whether they can still rely on the United States for their defense and security—nuclear and otherwise So far, the discussions abou nuclear deterrence and reassurance have played out largely beyond public view. But the issue is becoming increasingly salient, given growing threats from Russia and China especially, and growing doubts about the United States America and its allies cannot ignore this new reality. For if we are to prevent new nuclear proliferation among these allies, it is essential to acknowledge that what has long been unthinkable is becoming thinkable once more. Although the Biden administration has pledged to reaffirm long-standing US security commitments to its allies, a change in administration alone is unlikely to suffice in reestablishing the credibility of the US security guarantee, including the nuclear umbrella, in the eyes of most allies. Trust has been broken, and it will take more than a simple return to business as usual to reassure allies of America's commitments. If Washington is to reestablish its credibility, it will take time and great effort on the part of both the United States and its allies to rebuild confidence in their joint framework for collective defense. The United States will have to take the lead in rebuilding trust and confidence in its security commitments—including the nuclear guarantee. It will have to demonstrate that commitment in new and evident ways and work closely and collaboratively with its allies in Europe and Asia to renew their collective defense framework, including especially its long-NEGlected but increasingly important nuclear dimension. At the same time, allies will need to do their part to help rebuild the relationships with Washington and among themselves to strengthen overall deterrence and make US reassurance more credible and convincing. And all of the allies will need to commit to rethinking the arms control framework, nuclear and conventional, that should guide relations between the United States, Russia, China, and key Asian and European powers.

Great Power Conflict

Kallenborn (2024): Nuclear deterrence reduces risk of great power conflict

Kallenborn, Zachary. "Why a nuclear weapons ban would threaten, not save, humanity." Bulletin of the Atomic Scientists. January 10 2024.
https://thebulletin.org/2024/01/why-a-nuclear-weapons-ban-would-threaten-not-save-humanity/

On January 22, 2021, the Treaty on the Prohibition of Nuclear Weapons entered into force with 69 state parties. The treaty aims to ban nuclear weapons, bringing global nuclear weapons arsenals down to zero. Treaty states, the International Campaign to Abolish Nuclear Weapons, and other global zero activists that pushed for the treaty frequently highlight the existential harms from nuclear weapons, including in the second meeting of state parties to the treaty. The concern is legitimate. A 2022 study in *Nature* estimated a nuclear war between the United States and Russia would blast massive amounts of soot into the atmosphere, disrupting the global climate, and causing massive food shortages that could kill over five billion people. But nuclear weapons are not the only threat to humanity. An asteroid over 1 kilometer in diameter striking the Earth, genetically engineered biological weapons, super volcanoes, extreme climate change, nanotechnology, and artificial superintelligence all could generate existential harm, whether defined as the collapse of human civilization or literal human extinction. To address those challenges, humanity needs global cooperation to align policies, pool resources, maintain globally critical supply chains, build useful technologies, and prevent the development of harmful technologies. Nuclear deterrence—alongside robust international organizations, laws, norms, alliances, and economic dependencies—helps make that happen. Global governments and organizations aiming to reduce existential risks should support nuclear risk-reduction measures but oppose quick, complete abolition of nuclear weapons. Nuclear abolition creates serious risk of returning to an era of great power conflict, which could drastically increase existential risk. A global war between China, Russia, the United States and their respective allies risks the survival of the global cooperative system necessary to combat other existential threats, while threatening infrastructure necessary for risk mitigation measures and accelerating other existential risk scenarios. As Iskander Rehman wrote in his recent in-depth study of great power war: "Protracted great power wars are immensely destructive, whole-of-society affairs, the effects of which typically extend well beyond their point of origin, spilling across multiple regions and siphoning huge amounts of personnel, materiel and resources… Ultimately, protracted great-power wars usually only end when an adversary faces total annihilation, or collapses under the weight of its own exhaustion." If the great powers collapse, the global system may collapse with them. Nuclear deterrence can help prevent that. Nuclear weapons place a cap on how bad great power conflict can become and may deter the emergence and escalation of great power war. If China, the United States, or Russia faced a genuine existential threat, the nuclear weapons would emerge, threatening nuclear retaliation. As Chinese General Fu Quanyou, head of the People Liberation's Army General Staff until 2002, once said: "The U.S. and Soviet superpowers both had strong nuclear capabilities able to destroy one another a number of times, so they did not dare to clash with each other directly, war capabilities above a certain point change into war-limiting capabilities." Mutually assured destruction also helps prevent serious great power conflict from breaking out in the first place. During the current war between Ukraine and Russia, Russian President Vladimir Putin has used nuclear threats to deter direct NATO involvement and keep the conflict local. The United States might wish to support Ukraine against Russia, but it's not willing to risk a Russian nuclear strike on New York City or Washington, DC to do more than provide money and material. Removing that deterrence by banning nuclear weapons means a potential return to protracted, global great power war.

Kallenborn (2024): Great power warfare is an existential threat

Kallenborn, Zachary. "Why a nuclear weapons ban would threaten, not save, humanity." Bulletin of the Atomic Scientists. January 10 2024.
https://thebulletin.org/2024/01/why-a-nuclear-weapons-ban-would-threaten-not-save-humanity/

War among great powers increases existential risk in at least four ways. First, the global cooperative system necessary to combat existential threats may be seriously damaged or destroyed. Second, combatants might target and destroy infrastructure and capacity necessary to implement existential risk mitigation measures. Third, military necessity may accelerate the development of technologies like artificial intelligence that create new existential risks. Fourth, a great power war following nuclear abolition could touch off rapid, unstable nuclear rearmament and proliferation.After World War II, the United Nations, NATO, the International Monetary Fund, the International Atomic Energy Agency, and numerous other international organizations were built to stabilize the world and prevent such a global catastrophe from happening again. That cooperative framework allowed for the United Nations Intergovernmental Panel on Climate Change, enabled global partnerships on biosecurity through the G-7, and facilitated high-level discussions on the risks of artificial intelligence. However, a massive global war would undermine the very foundations of this order, because it would show the economic, political, and institutional ties between nations were never enough to prevent global conflict. Plus, World War III might result in the crippling or destruction of the powerful states and institutions that hold up global governance: China, France, Russia, the United States, the United Kingdom, the European Union, NATO, and others. The global community may lose the cooperative institutions necessary for climate change reduction, limiting or controlling risky biological research, prevent the creation and proliferation of artificial superintelligence, and generally defend the planet. Great power war could accelerate a broad range of technologies that generate new and increase other existential risks. Russian President Putin noted in 2017 that, "[w]hoever becomes the leader in [artificial intelligence] will become the ruler of the world." A great power war would almost certainly accelerate research, development, and implementation of artificial intelligence. One can easily imagine a Manhattan Project for artificial superintelligence, bringing together NATO's leading artificial intelligence researchers and organizations to create a superintelligence (or close enough to it) to defend friendly cybernetworks and attack adversarial ones, manipulate adversary decision-making, or create and manage insurgent forces. Although quantum computing is not an existential risk, accelerating development to help break adversary encryption or other military purposes would exacerbate artificial intelligence-related risks, too. Quantum computing offers potentially millions of times more computing power than classical computers, and computing power is a critical resource necessary to train artificial intelligence models. Great power war might also spur massive investment in biotechnologies like genetic engineering to enhance soldier effectiveness. Improvements and proliferation in genetic engineering generate a range of biological warfare concerns from creating new biological warfare agents to making existing agents more harmful. In a war for survival, infrastructure necessary to mitigate existential risks might be destroyed. Space launch capabilities constitute a prime example: On November 24, 2021, NASA launched the Double Asteroid Redirection Test from Vandenburg Space Force Base near Santa Barbara, California. If China and the United States were at war, Vandenburg Space Force Base would be a viable and desirable target for Chinese attacks. China has long recognized that the United States military depends heavily on space assets for communication, remote sensing, and position, navigation, and timing. And Vandenburg is home to the Combined Space Operations Center, the Space Force center responsible for executing "operational command and control of space forces to achieve theater and global objectives." Damaging or destroying the base, including its space launch capabilities, could help China win the war. At the same time, damaging or destroying the base would make it harder for the United States to carry out asteroid deflection research and, depending on timing, prevent the United States from launching a planetary defense mission when an asteroid is inbound. General loss of state capacity could also draw resources and policy attention away from existential risk mitigation. Research by Greg Koblentz of George Mason University and King's College London researcher Filippa Lentzos mapped 69 Biosafety Level 4 laboratories around the world. At these labs, research is conducted on the most dangerous pathogenic material, like the microorganisms that cause smallpox and Ebola. The United States and global community expends significant resources to secure those facilities: President Biden's Fiscal Year 2023 budget provides $1.8 billion to strengthen biosecurity and biosafety. But in a World War III involving the United States and China, biosecurity may fall by the wayside. Even if the United States prevails, rebuilding Tokyo, Los Angeles, Seoul, or other major cities demolished during the fighting would command tremendous resources, and attention. Finally, a World War III breaking out after nuclear abolition could trigger rapid, unstable nuclear

rearmament and proliferation. The United States, Russia, China, and other nuclear powers would almost certainly realize that nuclear abolition was a mistake and rearm themselves. A post-abolition World War III would also likely demonstrate to many other states that nuclear weapons are necessary to defend their sovereignty. Rapid nuclear rearmament and proliferation could be highly destabilizing, with significant new risks of nuclear war, because new nuclear arsenals may not be accompanied by the necessary crisis communication, secure second-strike, and general deterrence doctrine necessary to ensure stability. Even if nuclear abolition were achieved, the basic knowledge underlying nuclear weapons would not disappear. Even if all nuclear warheads were dismantled, weapon designs were destroyed, and enrichment facilities closed, the historical and scientific knowledge of nuclear energy and nuclear weapons would not disappear. Nuclear weapons knowledge would need to be retained even in a global zero world to support any monitoring or verification programs aimed at ensuring that a nuclear global zero stays "zero." That knowledge could provide the seeds for rearmament. So, while nuclear abolition might reduce nuclear-related existential risks in the short-term, abolition might counterintuitively increase nuclear existential risk in the long-term.

WMDs - Chemical Weapons and Bioweapons

Horowitz and Narang (2013): Nuclear weapons deter states from pursuing chemical and biological weapons

Horowitz, Michael C. and Narang, Neil. "Poor Man's Atomic Bomb? Exploring the Relationship Between 'Weapons of Mass Destruction'". Journal of Conflict Resolution. https://fsi9-prod.s3.us-west-1.amazonaws.com/s3fs-public/Journal_of_Conflict_Resolution-2013-Horowitz-0022002713509049.pdf

Figure 2 plots the survival curve for the pursuit of chemical weapons. It demonstrates the dramatic effect of nuclear weapons acquisition on the demand for CBWs. Countries possessing nuclear weapons are at essentially zero risk of initiating pursuit of chemical over time, along with countries that have a biological weapon (these two survivor functions appear as one overlapping line). Countries pursuing biological weapons, on the other hand, still have a large desire for chemical weapons. They ''fail'' and pursue chemical weapons at a significantly higher rate. The effects of our covariates on chemical weapons pursuit are similar to nuclear weapons pursuit in direction, though they often fall short of significance. For example, there is weak evidence that GDP per capita and GDP per capita squared are positively associated with a greater risk of chemical weapons pursuit (the former is statistically insignificant, while the latter is significant at the 10 percent level). However, no other covariate appears to have a statistically significant effect on chemical weapons pursuit, even though the direction on each variable fits with conventional wisdom. For example, membership in the CWC appears to be associated with a lower risk of chemical weapons pursuit, while a more dangerous external security environment and greater domestic unrest are both positively related to the risk of chemical weapons pursuit. Finally, we turn to estimating the effect of both nuclear and chemical weapons pursuit and acquisition on the risk of initiating biological weapons pursuit in models 5 and 6. These results are equally interesting because they provide support for the notion that biological weapons (in addition to chemical weapons) can also be appropriately considered a ''poor man's nuclear bomb.'' Similar to the impact of possessing nuclear weapons on the probability a state pursues chemical weapons, nuclear weapons possession has a strong negative effect on biological weapons pursuit in both models 5 and 6. After holding the underlying level of demand constant in model 6, simply possessing a nuclear weapon appears to decrease the instantaneous risk that a state will pursue biological weapons to virtually zero (1.44 107). This is consistent with the understanding of nuclear weapons as so powerful that they make the possession of other types of WMDs less relevant. Even before countries such as the United States abandoned their chemical weapons programs, for example, they abandoned their biological weapons program. The United States eliminated its offensive BW program under a Nixon administration order in 1969 and had shut down the program by the time it signed the BWC in 1972. France and Great Britain similarly eliminated their offensive BW programs. Russia stands in stark contrast to this argument, however. Evidence revealed after the cold war demonstrated that the Soviet Union maintained a vibrant offensive BW program at the Biopreparat complex through the end of the cold war. This demonstrates that grouping CBWs into a single category may not accurately represent the way countries actually think about them. Biological weapons, given their greater theoretical destructive capacity, may be considered somewhat differently. This is a potential path for future research. In contrast to the general relationship between nuclear weapons acquisition and biological weapons pursuit, nuclear weapons pursuit is associated with 2.25 times greater risk of biological weapons pursuit in this earlier stage of development. Chemical weapons, on the other hand, appear to have the effect of stimulating biological weapons pursuit at both the possession and pursuit stage, consistent with a complementary interpretation.

Goldman (2014): Bioweapons are easy to create, without nuclear deterrence, nothing stands to block humanity-threatening proliferation

Goldman, Bruce. “How Contagious Pathogens Could Lead to Nuke-Level Casualties.” Stanford Medicine. May 19 2014.
https://med.stanford.edu/news/all-news/2014/05/how-contagious-pathogens-could-lead-to-nuke-level-casualties.html

At its peak, the Soviets' bioweapons program, called Biopreparat, employed close to 60,000 people at nearly 40 facilities throughout the country. As she examined one of those facilities, which housed dangerous microorganisms, Trounce said, "It immediately struck me that it was not in good shape. The only barrier to entry was a barbed-wire fence, with nobody at the gate. I saw cats wandering in and out. "It blew my mind," Trounce continued. "As a Soviet citizen, I had had no idea these facilities even existed. To come as a U.S. citizen and see these facilities where thousands of scientists had been working on the deadliest pathogens was unbelievable. Who knows what I didn't see?" Did that massive Soviet bioweapons inventory ever get entirely dismantled? "I don't know," says Trounce. "I don't think anybody really does, and if they do it's classified information. What we do know is that there are three Russian Ministry of Defense bioweapons laboratories that remain closed to international examination." In any case, nobody harboring these weapons today would admit it, because it is in defiance of international law. But the fact is that thousands of Soviet scientists at numerous facilities kept producing offensive bioweapons for 20 years after signing a treaty banning them. Retired Rear Adm. Ken Bernard, MD, a guest speaker for the course, said that any claims that such programs have been eliminated should be treated with skepticism. "The Soviets completely lied to us before," he said. "Throughout the 1980s, they were producing tons and tons of smallpox and anthrax, even as the U.S. stopped vaccinating for smallpox.” Bernard, whose immersion in government service as a biosecurity official dates back to 1980, was a special assistant on biosecurity matters to presidents Bill Clinton and George W. Bush. In any case, focusing on existing inventories isn't enough, Trounce said. "Somebody can just come out with these things in a short amount of time. You don't have to build a nuclear reactor, which takes years, and procure exotic materials." If bioweaponry itself is nothing new, there's been a twist on it in the past few decades: A shift from biowarfare to bioterrorism. "What took hundreds of scientists and huge resources just a few decades ago now can be done within just a few weeks," Trounce said. Moreover, it can be done without the massive footprint characterizing both Cold War bioweapons projects and current nuclear-weapons programs. A bioweapon is a poor man's nuke. The secrets involved in building one aren't hard to come by, said David Relman, MD, the new co-director of Stanford's Center for International Security Cooperation. "It takes only the skills a good laboratory technician has mastered," said Relman, professor of microbiology and immunology and the Thomas C. and Joan M. Merigan Professor. Former technicians retain the skills they've learned, he noted. "That adds up to a lot of people who know a lot and know their way around labs." You can say "don't build a nuclear facility" and monitor for compliance. How do you tell someone not to build a biology lab? That gives rise to another, extremely disturbing consideration: Plausible deniability. It's easy to mask bioweapons research. You can buy equipment such as gene and protein synthesizers over the Internet. "They're the same as what you see in the legitimate biotech industry, so it wouldn't look suspicious," Trounce said. The materials and equipment you'd use are largely ubiquitous laboratory reagents and glassware, as opposed to the hard-to-get raw materials and instrumentation needed for making nuclear weapons. Information on how to configure pathogens' underlying genetic structures is public. "Smallpox has a 35-40 percent fatality rate and is not as contagious as measles," said Block. "Now imagine an organism as fatal as HIV and as contagious as measles. With modern air travel, a pandemic caused by a pathogen of this sort could take out maybe 90 percent of the people it reached. That would destroy a society." A high-tech bioweapon could cost only $1 million to build, Block said. "That's thousands of times cheaper than going nuclear. Iran's centrifuges alone cost them billions." But there's no need to create a brand-new organism from scratch. Lots of potentially suitable pathogens are ready-made, courtesy of Mother Nature. The bacterial pathogens that cause anthrax and botulinum, to name a couple, are found in the wild. Once you have such a biological agent, you can have 10 times as much of it tomorrow, because it grows exponentially. It costs only a few thousand dollars to culture it. You can store it in a freezer. "Botulinum toxin is about the most poisonous compound known," said Bernard. "Physicians buy it legally, to inject into people's eyebrows. Who can be sure there's no off-site, illegal production? Suppose a stranger were to say, 'I want 5 grams - here's $500,000'"? Five grams - 1 teaspoon - of botulinum toxin is easily enough to kill hundreds of thousands of people. The paralytic toxin, secreted by the bacterial organism Clostridium botulinum, can be countered with an antitoxin, but patient survival may require months of mechanical ventilation on an artificial respirator. In a 2005 study, Lawrence Wein, PhD, the Business School Trust Faculty Fellow and the Jeffrey S. Skoll Professor of Management in

the Graduate School of Business, explored the hypothetical effects of dropping botulinum toxin into the milk supply. Milk from myriad farms gets bottlenecked in a relatively small number of large temporary storage vats, and then dispersed to a wide network of retail outlets. Tampering with the country's food supply is surprisingly effective when a foodstuff goes through a production or distribution bottleneck, Wein discovered. "It's generally possible to know who was behind a nuclear attack, because you can trace material by its composition 'signature,'" said Trounce. "Biological agents are ubiquitous. You could even obtain them within the target country. It may be impossible to figure out who the bad guy is. That's ideal for terrorism."

Small State Proliferation

Schellenberger (2018): Denying small state actors nuclear weapons forces them to submit to western military dominance

Schellenberger, Michael. "Who are we to deny weak nations the nuclear weapons they need for self-defense?" Forbes magazine. August 28 2018. https://www.forbes.com/sites/michaelshellenberger/2018/08/06/who-are-we-to-deny-weak-nations-the-nuclear-weapons-they-need-for-self-defense/

The end of extended deterrence provided by the U.S. to Europe should not come as a surprise. Its temporary nature was foreseen as early as 1962, when André Fontaine wrote in *Le Monde*: "It is inconceivable, unless we are resigned to an interminable cold war, that Europe forever relies on America for its security and for the orientation of its diplomacy." As to be expected, the usual fears are being drummed up against why a militarily-weak nation like Germany shouldn't get the bomb. "If Germany was to relinquish its status as a non-nuclear power, what would prevent Turkey or Poland, for example, from following suit?" a former German ambassador to the U.S., wrote in response to Hacke's essay. "Germany as the gravedigger of the international nonproliferation regime? Who can want that?" In truth, it's remarkable the nonproliferation regime has lasted as long as it has. It made sense for nuclear-armed nations in the 1950s and 60s to try to prevent the spread of nuclear weapons. After all, nations weren't accustomed to the revolutionary new technology, and the likelihood was far higher back then that a weapon could get used accidentally or fall into the wrong hands. But 60 years later, in a multipolar world where the dominant power, the U.S., has grown tired of its role as global hegemon, the non-proliferation regime is falling apart under the weight of its own contradictions. The division of the world into nuclear-armed and unarmed nations has long been arbitrary and unfair. Nuclear-armed nations, except for France, hypocritically punished India for decades with trade sanctions for acquiring a weapon. People rightly worry about accidental or unauthorized use of weapons, such as by terrorists, but nations today safeguard their weapons and materials far better than they did in the past. After the fall of the Soviet Union, the United States spent $10 billion to help Russia maintain control of and destroy many of its nuclear weapons, and intelligence agencies around the world work together to prevent nuclear materials from falling into the hands of non-state actors. As for terrorism, why would a nation like Iran go to all the trouble of getting a bomb only to give it to a non-state actor like Hamas or Hezbollah? Not only would doing so risk retaliation from Israel, but the bomb could be used by those groups to gain leverage over Iran itself. Today, the greatest opposition to the spread of nuclear weapons to weak nations like North Korea and Iran comes from militaristic figures like U.S. national security advisor John Bolton, who advocated the disastrous invasion of Iraq, and who now advocates "the Libya model" for North Korea. It's easy to see why. "In a world without nuclear weapons," a U.S. nuclear weapons designer explained, "the U.S. would have uncontested military dominance." In other words, a world without nuclear weapons would be a world where relatively weak nations — like France and Britain before World War II and North Korea and Iran today — are deprived the only power on Earth capable of preventing a military invasion by a more powerful adversary. Who are we to deny weak nations the nuclear weapons they need for self-defense? The answer should by now be clear: hypocritical, short-sighted, and imperialistic.

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