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The Four (not so noble) Truths about Nuclear Governance

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Introduction

Not since the Cold War has the risk of a nuclear arms race been as high as it is today. Between Russia's nuclear sabre-rattling and the June 2025 US strikes on Iranian nuclear sites, this hardly comes as a shock. Some of the driving factors behind this state of affairs include the deterioration of arms control dialogue between the US and Russia, the imminent expiration of major disarmament treaties, and the growing tensions between the US and China.[1] Although these factors are contemporary developments—such as deteriorating dialogue and rising tensions—or predetermined occurrences—such as the expiration of treaties—there is another significant cause whose seeds were already sown during the peaceful peak of the US-dominated unipolar moment. That cause is a nuclear disarmament incentive structure which rewards proliferators and imperils adherents. From the signing of the Budapest Memorandum in 1994 to the 2025 Israeli/American strikes against Iran, the global community has failed to put in place an arms control framework that results in non-proliferation and de-escalation of conflict.

Through examining the cases of Ukraine, Libya, North Korea, and Iran, this paper will discern four distinct failures in the current nuclear treaty regime. These are 1) the failure to ensure the security of states who have relinquished their nuclear arms, 2) the failure to approach negotiations in good faith, faithfully carry out commitments made, and avoid taking power-playing maximalist positions, 3) the failure to maintain the cross-administration consistency needed in order to create the predictable conditions necessary for trustworthy diplomacy or effective pressure, and 4) the failure to recognise civilian nuclear energy production as a legitimate interest of states. As a result of these failures, we are seeing greater (covert) nuclear development, a reduced willingness to engage in arms control, and more pre-emptive strikes on purported nuclear facilities. Recognising the pressing security concerns about nuclear proliferation, and the existential threat that the status quo poses to peace and stability, this paper concludes with a few recommendations for addressing these failures.

[1] Stockholm International Peace Research Institute, *SIPRI Yearbook 2025, Summary* (2025), 12, https://www.sipri.org/sites/default/files/2025-06/yb25_summary_en.pdf.

The 1994 Budapest Memorandum and Subsequent Russian Invasions of Ukraine

When the Soviet Union collapsed, there were vast arsenals of nuclear warheads and delivery vehicles scattered across the soon-to-be independent Soviet republics, putting states like Ukraine in a complex diplomatic situation. Ukraine held the world's third largest nuclear stockpile after the United States and Russia in 1991, and although these nuclear weapons were not under the operational control of Ukraine during Soviet rule, they could be developed into an independent nuclear programme.[2] After a period of contentious internal debate, Ukraine became party to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and pledged to give up their nuclear weapons to Russia in 1994.[3] However, in exchange for relinquishing their nuclear weapons, Ukraine received security "assurances" from Russia, the United Kingdom, and the United States. This deal was known as the Budapest Memorandum, and similar agreements were also signed by Belarus and Kazakhstan.[4]

It should be noted that although Ukraine did have the capacity to integrate the warheads into a weapons programme and become a nuclear power, there was a tremendous amount of pressure for them not to do so.[5] Non-accession to the NPT would have rendered Ukraine an international pariah at a time when it was vying for legitimacy as an independent democratic state and would have dramatically complicated much-needed IMF and World Bank economic assistance.[6] These consequences of retaining nuclear weapons were raised by both the US and Europe, and Russia would likely not have responded passively to this decision either.[7]

Nevertheless, Ukraine was greatly concerned with the security implications of relinquishing their nuclear armaments vis-à-vis Russia, and pushed for binding security guarantees from the US.[8] However, the United States was unwilling to commit to any form of guarantee, which would require it to step in in case Ukraine was attacked.[9] Instead, Ukraine was provided a "security assurance" from the US, UK, and Russia, which was essentially a non-binding statement of intent to respect

[2] Arms Control Association, "Ukraine, Nuclear Weapons, and Security Assurances at a Glance," March 2022, https://www.armscontrol.org/factsheets/ukraine-nuclear-weapons-and-security-assurances-glance; Mariana Budjeryn and Matthew Bunn, *Budapest Memorandum at 25: Between Past and Future* (The Belfer Center for Science and International Affairs, 2020), https://www.belfercenter.org/publication/budapest-memorandum-25-between-past-and-future.
[3] Arms Control Association, "Ukraine, Nuclear Weapons, and Security Assurances at a Glance."
[4] Arms Control Association, "Ukraine, Nuclear Weapons, and Security Assurances at a Glance"; Budjeryn and Bunn, *Budapest Memorandum at 25*.
[5] Budjeryn and Bunn, *Budapest Memorandum at 25*.
[6] Ibid.
[7] Ibid.
[8] Arms Control Association, "Ukraine, Nuclear Weapons, and Security Assurances at a Glance."
[9] Budjeryn and Bunn, *Budapest Memorandum at 25*.

Ukrainian sovereignty. The non-binding nature of this assurance was later reiterated by both Russia and the United States in 2011 and 2013 respectively.[10]

As such, due to the pressures Ukraine was facing and the unwillingness of the international community to make stronger commitments to Ukraine, Ukraine was left with little more than a soft promise of security in exchange for their nuclear capabilities. The fragility of this agreement was on full display when Russia invaded Crimea and the Donbass region in 2014 and later launched a full-scale invasion in 2022. Notably, Russia's possession of and posturing with their nuclear arsenal served as a shield for their aggression significantly hindered western support for Ukraine.[11]

The case of Ukraine constitutes a failure protect a state which relinquished its nuclear arsenal in response to demands from the international community. No security guarantees were issued in 1994, paving the way for two Russian invasions, which themselves did not receive a forceful response by the international community. What makes this case especially troubling is that Ukraine was closely aligned with the western community which still did not result in security guarantees or compel a stronger rally to defend Kyiv's sovereignty. This signals to other states that obtaining concrete security guarantees is nigh impossible, and that assurance will not ensure your security, dramatically raising the risk of relinquishing nuclear weapons.[12] Nuclear weapons were shown to both be the only sure-fire way to maintain your security, and a way to enable aggressive action.

[10] Julian Borger, "We Knew in 2011 Putin Would Attack Ukraine, Says Bill Clinton," World News, *The Guardian*, May 5, 2023, https://www.theguardian.com/world/2023/may/05/we-knew-putin-would-attack-ukraine-back-in-2011-says-bill-clinton; Embassy of the United States in Belarus, "2013 Press Releases | Embassy of the United States Minsk Belarus," April 12, 2013, https://web.archive.org/web/20140419030507/http://minsk.usembassy.gov/budapest_memorandum.html.

[11] *Russia's Updated Basic Principles for Nuclear Deterrence A Broom for All Corners?* (Swedish Defence Research Agency, 2025), 3, https://www.foi.se/en/foi/reports/report-summary.html?reportNo=FOI%20Memo%208829; Yev Kopiika, "A Timeline of Russia's Nuclear Threats Against the West," UNITED24 Media, June 27, 2024, https://united24media.com/war-in-ukraine/a-timeline-of-russias-nuclear-threats-against-the-west-947; Steven Pifer, "How Credible Is Russia's Evolving Nuclear Doctrine?," *Brookings*, November 14, 2024, https://www.brookings.edu/articles/how-credible-is-russias-evolving-nuclear-doctrine/; Heather Williams et al., *Russian Nuclear Calibration in the War in Ukraine*, February 23, 2024, https://www.csis.org/analysis/russian-nuclear-calibration-war-ukraine; Mark S. Bell, "The Russia-Ukraine War and Nuclear Weapons: Evaluating Familiar Insights," *Journal for Peace and Nuclear Disarmament* 7, no. 2 (2024): 494–508, https://doi.org/10.1080/25751654.2024.2425379; Zack Beauchamp, "Why the US Won't Send Troops to Ukraine," Vox, February 25, 2022, https://www.vox.com/policy-and-politics/2022/2/25/22949351/ukraine-russia-us-troops-no-fly-zone-nuclear-weapons.

[12] Rebecca Davis Gibbons et al., "Nuclear Disarmament and Russia's War on Ukraine: The Ascendance and Uncertain Future of the Treaty on the Prohibition of Nuclear Weapons," *American Academy of Arts & Sciences*, Promoting Dialogue on Arms Control and Disarmament, 2023, https://www.amacad.org/publication/altered-nuclear-order-wake-russia-ukraine-war/section/2.

Libya in the Wake of the 2003 US Invasion of Iraq

Libya's nuclear disarmament was closely preceded by the American invasion of Iraq and the broader war on terror and failed to result in the outcomes that Libya was aiming for. In 2003, allegations of Iraqi WMD development, though lacking evidence, were given as grounds to engage in military intervention and regime change. Following the US invasion of Iraq, Libya dismantled their WMD programme in late 2003. It is unclear if the invasion of Iraq incited Gaddafi to dismantle the programme, or whether it was merely the continuation of a process started earlier.[13] Regardless, Libya hoped that through dismantling their programme sanctions against them would be lifted and that they would be welcomed by the international community; further, Gaddafi hoped that their national sovereignty, and his regime's survival, would be assured through security guarantees.[14] However, acceptance and sanction relief stalled, and security guarantees were quickly taken off the table, with the international community eventually backing a popular uprising against Gaddafi in 2011.[15]

Already in 2005, Libyan officials reported feeling humiliated and cheated over the lack of the aforementioned benefits from dismantling their WMD programme, and especially with the western framing that Libya's disarmament occurred as a consequence of the invasion of Iraq and the war on terror.[16] After the uprising, Gaddafi's son summarised this sentiment by stating that "it's a good lesson for anybody […] that you have to be strong, you [can] never trust them [i.e., NATO] and you have to be always on alert. Because those people they don't have friends. Over one night they change their mind, and they start bombing ... and the same thing could happen to any other country."[17]

The case of Libya constitutes a failure to faithfully carry out commitments made in adequately rewarding states for disarmament. By framing the disarmament in a way that goes against Libya's wishes and dragging one's feet on international reintegration and sanctions relief, Libya's adherence to arms control was made to look foolish, especially considering the 2011 uprising. Although supporting a popular revolt against an authoritarian government does not set a bad precedent in and of itself, the fact that it came after eight years of unrequited concession leaves a mark. Had the international community properly rewarded Libya for their disarmament, subsequent involvement in a popular uprising would not make it seem as if disarmament was a long-term plot to facilitate regime change. The case of Libya signals to other states that you may not be appropriately rewarded, and even be humiliated, for disarming, particularly if you are not aligned with global hegemons.

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[13] Sammy Salama, "Was Libyan WMD Disarmament a Significant Success for Nonproliferation?," *The Nuclear Threat Initiative*, August 31, 2004, https://www.nti.org/analysis/articles/was-libyan-wmd-disarmament-success/; Martin Indyk, "The Iraq War Did Not Force Gadaffi's Hand," *Brookings*, March 9, 2004, https://www.brookings.edu/articles/the-iraq-war-did-not-force-gadaffis-hand/; Arms Control Association, "Chronology of Libya's Disarmament and Relations with the United States," January 2018, https://www.armscontrol.org/factsheets/chronology-libyas-disarmament-and-relations-united-states.

[14] Ludovica Castelli, "Lessons From Libya's Nuclear Disarmament 20 Years On," *Stimson Center*, December 15, 2023, https://www.stimson.org/2023/lessons-from-libyas-nuclear-disarmament-20-years-on/.

[15] Castelli, "Lessons From Libya's Nuclear Disarmament 20 Years On."

[16] Målfrid Braut-Hegghammer, "Giving Up on the Bomb: Revisiting Libya's Decision to Dismantle Its Nuclear Program | Wilson Center," October 23, 2017, https://www.wilsoncenter.org/blog-post/giving-the-bomb-revisiting-libyas-decision-to-dismantle-its-nuclear-program.

[17] Norman Cigar, *Libya's Nuclear Disarmament:*, January 2012, 5.

North Korea in the Wake of the 2003 US Invasion of Iraq

While Libya dismantled their nuclear programme following the invasion of Iraq in 2003, North Korea took a highly-offensive approach to nuclear governance which has since been met with erratic responses from the US. North Korea withdrew from the NPT in 2003, and just three years later it conducted its first nuclear test.[18] North Korea is then able to negotiate for the release of $25 million in frozen funds, thousands of tons of oil, sanction relief, and their removal from the list of state sponsors of terrorism in exchange for declaring and disabling its nuclear programmes.[19] However, North Korea renege on their commitments by 2009 and continued their nuclear programme, leading to the resumption of sanctions and their eventual reclassification as a state sponsor of terrorism.[20] While North Korea revealed new uranium plants in late 2010, Gaddafi was soon toppled in Libya, leading North Korean officials to state it was a mistake for Libya to trust the west and give up their WMDs in 2003.[21] Since then, approaches to nuclear diplomacy with North Korea have swung wildly between, and sometimes within, US administrations, ranging from maximum pressure campaigns to futile public spectacles.[22] 15 years later North Korea is still continuing its nuclear programme and does not seem near any regime change, despite the broader regional instability caused by their possession of nuclear weapons.

The case of North Korea serves as a counter example to Libya and makes a positive case for keeping your nuclear weapons, as well as demonstrates a failure of foreign policy consistency towards rogue nuclear states. Unlike Libya, North Korea accelerated its nuclear programme after the invasion of Iraq and a continued US demand for total denuclearisation. Because of creating and keeping nuclear weapons, North Korea has not been subject to any serious attempts at regime change (despite being internationally ostracised), has been able to extract concessions from the west (partially though credible offensive nuclear threats), and is able to keep developing their nuclear programme still today. This is in part due to the west's inability to maintain a consistent long-term strategy towards North Korea. From Bush's hardline "axis of evil approach," to Obama's "strategic patience," to Trumps's explicit threats *and* historical relationship building; this extreme variability gives North Korea plenty of room to manoeuvre and reduce pressure. Although it offers limited appeal to its people, North Korea makes a good case for authoritarian leaders to develop and hold on to nuclear weapons.

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[18] Staff, "North Korea Withdraws from Nuclear Treaty," World News, *The Guardian*, January 10, 2003, https://www.theguardian.com/world/2003/jan/10/northkorea1; Council on Foreign Relations, "Timeline: North Korean Nuclear Negotiations," 2024, https://www.cfr.org/timeline/north-korean-nuclear-negotiations.

[19] Council on Foreign Relations, "Timeline."

[20] Council on Foreign Relations, "Timeline."

[21] Council on Foreign Relations, "Timeline"; Mark McDonald, "North Korea Suggests Libya Should Have Kept Nuclear Program," World, *The New York Times*, March 24, 2011, https://www.nytimes.com/2011/03/25/world/asia/25korea.html; Afp, "North Korea Cites Muammar Gaddafi's 'destruction' in Nuclear Test Defence," *The Telegraph*, January 9, 2016, https://www.telegraph.co.uk/news/worldnews/asia/northkorea/12090658/North-Korea-cites-Muammar-Gaddafis-destruction-in-nuclear-test-defence.html.

[22] Council on Foreign Relations, "Timeline"; The Economist, "Donald Trump and Kim Jong Un Hold a Border Photo-Op," *The Economist*, June 30, 2019, https://www.economist.com/asia/2019/06/30/donald-trump-and-kim-jong-un-hold-a-border-photo-op.

The 2015 Joint Comprehensive Plan of Action and the 2025 US-Israeli Strikes on Iran

Although Iran also continued to develop nuclear weapons after the invasion of Iraq, it did eventually enter into a comprehensive arms control framework in 2015. Like North Korea, Iran castigated Gaddafi for his decision to relinquish nuclear weaponry, proclaiming that Iran was right to continue their nuclear development.[23] However, due to an economy suffering from high inflation and currency devaluation caused by sanctions, Iran agreed to enter negotiations for the Joint Comprehensive Plan of Action (JCPOA). The JCPOA was notably different from Gaddafi's deal, in that Iran would not be completely dismantling their decades old nuclear weapons programme but rather severely restricting it while allowing for inspections by the International Atomic Energy Agency IAEA. In exchange, Iran would be provided sanctions relief. The agreement was signed in 2015 and went into force in 2016.[24]

In 2018 US President Trump unilaterally withdrew from the JCPOA and reimposed sanctions, marking the beginning of a rapid deterioration in relations which had just began to improve in light of the JCPOA. The withdrawal, alongside a newly enacted US travel ban affecting Iranians and later the assassination of Soleimani, rendered the deal wholly defunct and shattered Iranian trust in any other negotiations.[25] This lead Iran to fully abandon the JCPOA and resume work on their nuclear weapons programme, creating major security concerns.[26] In 2025, Trump and Iran initiated talks in an attempt to formulate new deals, however they were unable to reach an agreement. Iran rejected the US offer on the 9th of June, reportedly due to the US refusing to allow any form of uranium enrichment on Iranian soil, even for civilian purposes.[27] On the 12th of June, an IAEA report found Iran non-compliant with its NPT obligations, shortly after which Israel launched 12 days of attacks,

[23] Cigar, *Libya's Nuclear Disarmament:*, 6–8; Reuters, "Don't Bomb Libya, Arm Rebels, Says Iran's Khamenei," World, *Reuters*, March 21, 2011, https://www.reuters.com/article/world/dont-bomb-libya-arm-rebels-says-irans-khamenei-idUSTRE72K50L/.

[24] Fred Frommer and Adam Zeidan, "Joint Comprehensive Plan of Action (JCPOA) | Iran Nuclear Deal, Members, Snapback Sanctions, Barack Obama, & Donald Trump | Britannica," June 18, 2025, https://www.britannica.com/topic/Joint-Comprehensive-Plan-of-Action; Kali Robinson, "What Is the Iran Nuclear Deal?," Council on Foreign Relations, October 27, 2023, https://www.cfr.org/backgrounder/what-iran-nuclear-deal.

[25] Robinson, "What Is the Iran Nuclear Deal?"; Dan Smith, "The US Withdrawal from the Iran Deal: One Year On," Stockholm International Peace Research Institute, May 7, 2019, https://www.sipri.org/commentary/expert-comment/2019/us-withdrawal-iran-deal-one-year; BBC, "Trump Travel Ban: What Does This Ruling Mean?," US & Canada, *BBC News*, June 26, 2018, https://www.bbc.com/news/world-us-canada-39044403.

[26] Reuters, "Iran's Stock of Enriched Uranium Exceeds Nuclear Deal's Limit, IAEA Says," World, *Reuters*, July 1, 2019, https://www.reuters.com/article/world/irans-stock-of-enriched-uranium-exceeds-nuclear-deals-limit-iaea-says-idUSKCN1TW2TG/; BBC, "Iran Nuclear Deal: Government Announces Enrichment Breach," *BBC News*, July 7, 2019, https://www.bbc.com/news/world-middle-east-48899243; BBC, "Iran Rolls Back Nuclear Deal Commitments," *BBC News*, January 5, 2020, https://www.bbc.com/news/world-middle-east-51001167.

[27] Patrick Wintour and Patrick Wintour Diplomatic editor, "Iran on Brink of Rejecting US Proposal on Nuclear Programme," World News, *The Guardian*, June 2, 2025, https://www.theguardian.com/world/2025/jun/02/iran-on-brink-of-rejecting-us-proposal-on-nuclear-programme.

to which Iran responded in kind.[28] The United States also conducted a strike against Iran's nuclear facilities, with early intelligence suggesting only limited damage.[29] Following these attacks Iran has suspended all cooperation with the IAEA and tensions remain high.[30]

The case of Iran demonstrates the inefficacy of maximalist demands and one of the most blatant failures of diplomatic consistency in modern history. The JCPOA was a historic diplomatic agreement whose existence could only emerge from a highly particular state of world affairs in which Iran direly needed to come to the table. Through withdrawing from the deal in 2018, the first Trump administration not only squandered a deal that many experts thought would have been effective but also wasted a unique moment in which Iran was most in need of dealmaking.[31] The lack of trust arising from this decision was later compounded by the US approach to the 2025 negotiations, in which it demanded that Iran be prohibited from all uranium enrichment, even for civil purposes, on its soil. Not only is uranium enrichment for civilian purposes an important energy and cultural issue for Iran, but this demand also goes further than the JCPOA did.[32] Making such maximalist demands at a time when trust in the US is at an all-time low and Iran is in a stronger negotiating position constitutes a fantastical approach with no realistic prospects for success.[33] Thus, by going beyond negotiating Iran's nuclear arms programme and also demanding an end to civilian nuclear development, the US eroded its chances of being able to reach a deal altogether.[34] Given what a pressing security concern the Iranian nuclear weapons programme is, making a diplomatic solution impossible made kinetic escalation inevitable.

[28] Aleksandar Brezar, "UN Nuclear Watchdog Finds Iran in Breach of Its Obligations," Euronews, June 12, 2025, 102600, https://www.euronews.com/2025/06/12/un-nuclear-watchdog-finds-iran-in-non-compliance-with-nuclear-obligations; Gram Slattery et al., "US Strikes Failed to Destroy Iran's Nuclear Sites, Intelligence Report Says," Middle East, *Reuters*, June 25, 2025, https://www.reuters.com/world/middle-east/trump-announces-israel-iran-ceasefire-2025-06-23/.
[29] Slattery et al., "US Strikes Failed to Destroy Iran's Nuclear Sites, Intelligence Report Says."
[30] Erika Solomon, "Nuclear Inspectors Leave Iran After Cooperation Halted With U.N. Watchdog," World, *The New York Times*, July 4, 2025, https://www.nytimes.com/2025/07/04/world/middleeast/nuclear-inspectors-iran-iaea.html.
[31] The Belfer Center for Science and International Affairs, "Iran Experts on Restoring Iran Nuclear Agreement," February 25, 2021, https://www.belfercenter.org/publication/iran-experts-restoring-iran-nuclear-agreement; Robinson, "What Is the Iran Nuclear Deal?"
[32] Patrick Wintour, "Why Is Iran's Nuclear Programme so Essential to Its Identity?," World News, *The Guardian*, June 23, 2025, https://www.theguardian.com/world/2025/jun/23/why-iran-nuclear-programme-essential-to-its-identity.
[33] Sina Azodi, "Why a Maximalist Approach to Iran Talks Won't Work," *Foreign Policy*, July 29, 2025, https://foreignpolicy.com/2025/05/28/iran-nuclear-talks-enrichment-standoff-trump-administration/.
[34] Kelsey Davenport, "Zero Enrichment: An Unnecessary, Unrealistic Objective to Prevent an Iranian Bomb," Arms Control Association, 2025, https://www.armscontrol.org/issue-briefs/2025-06/zero-enrichment-unnecessary-unrealistic-objective-prevent-iranian-bomb#.

Takeaways for the Future

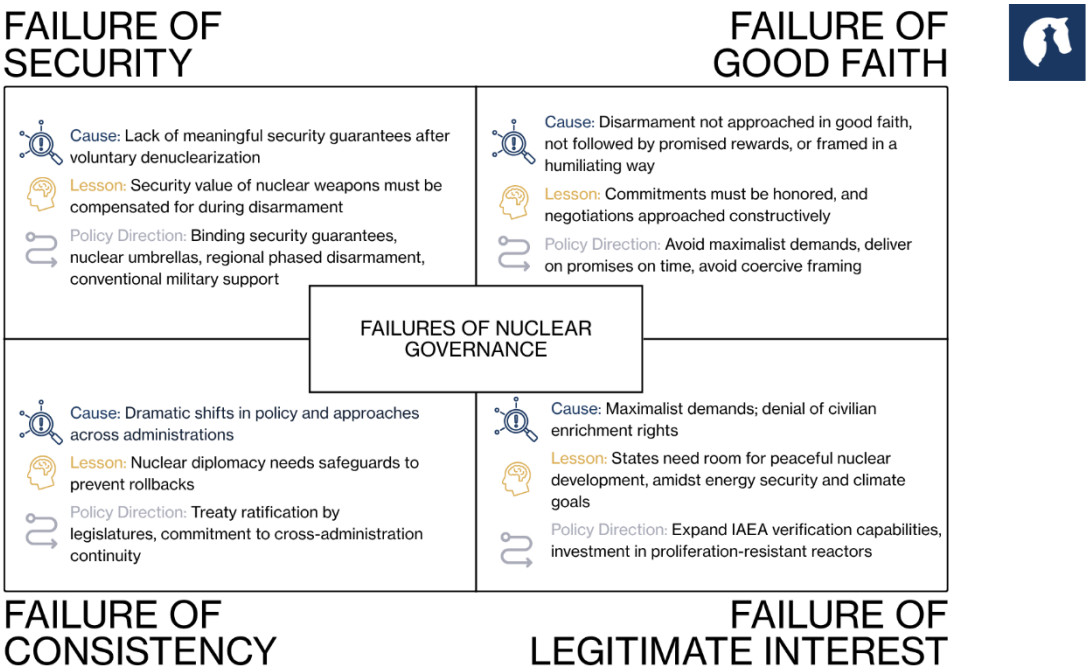

Figure 1: *The causes, lessons, and future policy directions for each of the four failures*

These case studies of Ukraine, Libya, North Korea, and Iran allow us to identify four historical failures and derive some guidance for the future of nuclear governance. First, *failure of security*. The historical failure to ensure the security of states who have relinquished their nuclear arms must be acknowledged, and material arrangements to meet those security needs must be developed. Given that states are first and foremost concerned with their survival, and that nuclear weapons have been shown to be the premier way to ensure your survival, then adequate recompense must be given for states to give them up.[35] Although it may be possible to incite nuclear disarmament with massive economic reward, the unique security value of nuclear weapons is hard to compensate for using purely economic means. Binding security guarantees, nuclear umbrellas, regional phased disarmament, and perhaps extensive conventional military support are all potential alternatives to approximate the security value of nuclear weapons. Acknowledging the previous failures to ensure the security of disarming states is important to signal an understanding that future arrangements must be more substantial in nature.

Second, *failure of good faith.* Dialogue and negotiation must be the first-order approach for achieving disarmament, and parties to such negotiations must act in good faith, avoid taking power-playing maximalist positions, and faithfully carry out the commitments made. By humiliating states like Libya through framing their disarmament as a result of being intimidated by a show of force in Iraq, negotiation is made a less attractive option for other states. By being slow to follow up on your commitments, as with Libya, you cast doubt on any prospective benefits of disarming, causing states to prefer the status quo of getting or staying armed. By making maximalist demands that are not necessary to ensure disarmament, such as demanding that Iran stop even civilian uranium

[35] Scott D. Sagan, "Why Do States Build Nuclear Weapons?: Three Models in Search of a Bomb," *International Security* 21, no. 3 (1996): 61–62, https://doi.org/10.2307/2539273.

enrichment, you throw wrenches into the negotiation process that are likely to shut it down entirely. Approaching negotiations in this way prevent states from being willing to engage diplomatically, erodes trust in the terms of prospective agreements, and make reaching an agreement impossible, contributing to the risk of kinetic escalation. Exploring ways to credibly signal commitment, such as through leveraging domestic pressure or issuing a pre-emptive concession, can promote transparent good-faith behaviour.[36]

Third, *failure of consistency.* Consistency must be maintained throughout administrations in order to create the predictable conditions necessary for trustworthy diplomacy or effective pressure.[37] Arms control is fundamentally a trust-based and long-term endeavour. Given what a massive concession relinquishing nuclear weapons is, and how many years developing them takes, compensation for disarmament will likely need to be continuous over an extended period. If the benefits for disarming are only maintained throughout a single, or a few administration(s), it will result in rising demands for disarming to compensate for the risk, or an unwillingness to participate in negotiations altogether. Notably, this issue even arises in precursors to disarmament agreements, such as when setting up arms control frameworks or dialogues. Even though they don't require giving up anything material, the risk of a partner state withdrawing from it in the future makes it less likely that states will be willing to spend the time and resources setting them up in the first place. Implementing adherence safeguards, such as ensuring that treaties are ratified by legislatures and require legislative review before withdrawal, can go a long way in fostering long-term consistency. Additionally, if an approach of economic pressure and diplomatic isolation is pursued, then it must also be sustained across administrations in order to be effective. Unless a concrete and viable opportunity for disarmament cooperation arises, maintaining the pressure is critical to achieve long-term effect in these cases.

Fourth, *failure of legitimate interest*. States must be enabled to pursue legitimate energy needs through nuclear methods, especially as a means to decarbonize and avoid climate catastrophe. Given the importance of energy security both in its own right and as part of the green transition, not leaving room for nuclear energy in disarmament procedures creates two problems. First, being disallowed from enriching uranium for civilian purposes ranges from a roadblock to a red line in negotiations, as many states are striving to improve energy generation and security. Not being able to pursue civilian nuclear energy may also contribute to a perception of unfairness, which hurts compliance.[38] It is also a deeply unnecessary requirement for disarmament, as turning low-enriched uranium into weapons grade uranium is a lengthy process, and there exists mechanisms through the IAEA to supervise enrichment and ensure compliance. Second, we are at the cusp of a climate catastrophe, and preventing states from pursuing one of the most effective carbon neutral methods of energy generation impedes the transition away from fossil fuels. Aside from increasing support for the IAEA to improve its compliance verification capabilities, pursuing alternative nuclear energy technology such as Thorium reactors can help reduce proliferation pathways in civilian energy production processes.

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[36] James D. Fearon, "Signaling Foreign Policy Interests: Tying Hands versus Sinking Costs," *The Journal of Conflict Resolution* 41, no. 1 (1997): 68–90.
[37] Robert Axelrod and Robert O. Keohane, "Achieving Cooperation under Anarchy: Strategies and Institutions," *World Politics* 38, no. 1 (1985): 250, https://doi.org/10.2307/2010357.
[38] Rebecca Davis Gibbons and Stephen Herzog, "Durable Institution under Fire? The NPT Confronts Emerging Multipolarity," *Contemporary Security Policy* 43, no. 1 (2022): 50–79, https://doi.org/10.1080/13523260.2021.1998294.

Diplomacy is an integral aspect of a comprehensive counter-proliferation strategy, and critically reflecting on historical failures is an important step in developing more effective nuclear arms control approaches for the future. Although these recommendations are not silver bullets, they have the potential to go a long way in reducing the risk of repeating the errors made in the last 30 years of nuclear governance. Furthermore, current geopolitical trends require us to be particularly vigilant of these failures. An increasingly isolationist United States, the major historical security guarantor, raises the risk of repeating the *failure of security*. The return of great power politics incites competitive winner-take-all behaviour that increases the risk of repeating the *failure of good faith*. Radical inter-administration policy shifts and growing political polarisation increase the risk of repeating the *failure of consistency*. Heightened energy competition and the delegitimisation and weakening of international organisations increases the risk of the *failure of legitimate interest*. With proliferation concerns on the rise, ever-growing tensions between major powers, and the resurgence of kinetic inter-state conflict, we cannot afford to keep making old mistakes.