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# A theory of nuclear disarmament: Cases, analogies, and the role of the non-proliferation regime

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## ABSTRACT

What might prompt a nuclear-armed state to give up its arsenal? Nuclear disarmament has provided a nominally shared goal for virtually all the world's states for decades, yet surprisingly little effort has been devoted to systematically theorizing its drivers. This article aims to begin filling this void. I proceed in three steps. First, I discuss the conceptual, material, and ideational features of renunciation to arrive at a rudimentary understanding of what, fundamentally, nuclear disarmament as a political process involves. Second, I scope out the empirical evidence on which a general theory of nuclear renunciation might be based. Third, synthesizing the dominant explanations for the cases discussed in the second part, I outline a basic account of nuclear relinquishment and discuss the compatibility of this account with common assumptions about disarmament practice. I conclude that the best evidence available suggests that adversarial politics and stigmatization are necessary conditions for renunciation.

**KEYWORDS** Nuclear disarmament; theory; case studies; analogies; norms; adversarial politics

Nuclear disarmament is one of the United Nations' oldest aspirations. The goal of abolition commands large popular support across continents (Baron et al., 2020; Egeland & Pelopidas, 2021; International Committee of the Red Cross, 2020; Kafura, 2020), and has for half a century constituted a legally binding obligation under the near universally approved Treaty on the Non-Proliferation of Nuclear Weapons (NPT). Yet we know relatively little about the drivers of nuclear relinquishment, and there is no consensus about how the elimination of nuclear arms might be accomplished in practice. In one scholar's estimation, "[t]he political dynamics of nuclear disarmament are under-studied and under-theorised" (Burford, 2016, p. 1). In the words of another: "There is no theory of nuclear disarmament"

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(Harrington, 2011). While some commentators frame the elimination of nuclear weapons as first and foremost a technical challenge that can and will be met if only the right people are given time and resources “to do the hard work that is necessary” (Bender, 2021), others see abolition as a deeper problem unlikely to be cracked in the absence of resolute normative advocacy (Fihn, 2017). Yet others maintain that overt contestation of the prevailing nuclear order is counterproductive, and that proponents of disarmament should seek to “engage, not enrage” recalcitrant nuclear powers (Bishop, 2014). How are we to assess the merits of these conflicting takes? In other words: How might a theory of nuclear disarmament be developed and appraised?<sup>1</sup> Moreover, if we want to understand the future of the NPT (see the special issue “The NPT beyond 50” in this journal), understanding disarmament is essential.

While a collection of important and well-researched case studies of nuclear (non)relinquishment does exist (Albright & Stricker, 2016; Bell, 2021; Budjeryn, 2016; Burgess & Kassenova, 2012; Liberman, 2001; Potter, 1995; Reiss, 1995; Ritchie, 2010; Stevens, 2008; van Wyk & van Wyk, 2015), the comparatively limited academic literature on nuclear disarmament has focused primarily on the feasibility and desirability of particular elimination scenarios (Hynek & Smetana, 2016; Kelleher & Reppy, 2011; Lodgaard, 2017; Perkovich & Acton, 2011), the relationship between abolition and other widely shared policy objectives (e.g., Knopf, 2013; Müller et al., 1994; Walker, 2012), and the emergence of particular social movements and institutions (e.g., Bourantonis, 1993; Gibbons, 2018; Wittner, 1993–2003). Much of the policy literature on how disarmament might be advanced in practice focuses on proximate diplomatic issues and positions, showing relatively little concern for the causal mechanisms underpinning policy change. By contrast, the literature on nuclear (non)proliferation comprises numerous studies of the general causes of nuclear arms procurement and restraint (see e.g., Bell, 2016; Debs & Monteiro, 2017; Hymans, 2006; Rauchhaus et al., 2011; Rublee, 2009; Schneider, 2020; Solingen, 2007). That being said, practitioners of disarmament diplomacy often justify their positions with references to historical examples that are argued to provide lessons for disarmament policy. This article compiles these “lessons,” assesses their evidentiary value to theorizing about nuclear weapons relinquishment, and links them to the politics and function of the NPT.

The scholarly inattention to the causes of renunciation could have several explanations. Most obviously, there have been few straightforward cases of relinquishment, giving would-be analysts of nuclear elimination processes limited empirical material to work with. However, an even greater paucity of evidence has not hindered theory formation in other areas of security studies, including the study of nuclear war and escalation (e.g., Posen, 1991; Schofield, 2013; Wellerstein et al., 2019). Another cause of the

academic community's limited attention to the determinants of nuclear disarmament might be that many scholars simply consider elimination to be impossible or secondary to other processes. For Buzan (1987, pp. 250, 254), nuclear weapons cannot be "disinvented," and the systemic condition of anarchy renders the logic of disarmament "so obviously flawed that except for propaganda purposes, and for limited reductions in the context of arms control, the idea is, as the historical record indicates, a non-starter" (for a critique of this argument, see Cooper, 2006).<sup>2</sup> Of course, Buzan's claim would soon be overtaken by events, as South Africa and three states in the post-Soviet space gave up nuclear arsenals only a few years later. In the less absolutist words of Bull (1959, p. 42), "armaments are a consequence, not a cause, of political tension," and "a reduction in this tension can be expected to lead to a reduction in the level of armaments." Individual nuclear choices, in this view, are epiphenomenal to the wider security circumstances in which they are made (Freedman, 2009).

However, it is increasingly clear that a narrow focus on purportedly objective security circumstances is unwarranted. Most contributors to nuclear security studies now agree that nuclear arms "are more than tools of national security; they are political objects of considerable importance in domestic debates and internal bureaucratic struggles and can also serve as international normative symbols of modernity and identity" (Sagan, 1996, p. 55; Pelopidas, 2015). Nuclear-armed states have found it difficult to give up their arsenals even when the threats that originally motivated or were used to justify acquisition have faded or disappeared altogether (Ritchie, 2010, p. 466). It would be difficult to argue, for example, that France or the United Kingdom are presently (or were ever) faced with more arduous security circumstances than the dozens of smaller and militarily more vulnerable states that have refrained from building nuclear weapons despite having the capacity to do so (see Pelopidas, 2015). In fact, most scholars of international security have long agreed "threats" and "security conditions" are not altogether objective, unmediated realities, but perceptions conditioned by cultural and political forces. This consensus comprises liberalism, critical security studies, poststructuralism, constructivism, and most contemporary strands of realism (see e.g., Legro & Moravcsik, 1999; Quinn, 2018).

The notion that threats are in part (inter)subjective and mediated of course does not imply that security is entirely divorced from material realities. Most would agree that material capabilities remain important factors in international politics. It does imply, however, that beliefs about security, including opinions about the strategic value of nuclear weapons or notions of how nuclear-armed adversaries should be dealt with, are influenced by social forces. There is ample evidence that, in practice, policymakers' beliefs about the value and legitimacy of nuclear weapons, arms control, and disarmament are shaped by institutions, economics, and ideology

(Hymans, 2006; Rublee, 2009; Solingen, 2007). To understand states' nuclear choices, one must understand the processes that shape political debates and decision-making (Saunders, 2019, p. 184). Key to this is to investigate the imagined pasts and futures that inform policymaking (Lebow & Pelopidas, 2021).

What might prompt current and future nuclear-armed states to give up their arsenals? And, perhaps equally important, how might alternative answers to this question be adjudicated? These are the questions I seek to address in this article. The text is divided into three parts. First, I discuss what nuclear renunciation involves and provide a working definition of a “hard case” of nuclear disarmament. Second, I scope out the historical examples and analogies most commonly invoked as exemplars for nuclear disarmament, assessing their evidentiary value against the definition developed in the first part. Third, synthesizing the dominant explanations discussed in the second part, I sketch out a rudimentary account of factors influencing states' nuclear disarmament choices and conclude that social stigmatization constitutes a necessary condition for change. To be clear, the purpose of this article is neither to rehash longstanding debates about the feasibility or desirability of nuclear zero(s) nor to speculate about ideal transition strategies or prescriptive “ways out of the nuclear age” (Freedman, 2009, p. 14). Rather, the aim is to compile relevant evidence and to begin outlining a descriptive theory of nuclear disarmament.

### **What is nuclear disarmament anyway?**

The fact that individuals and organizations attach different value to nuclear weapons as status symbols and instruments of (in)security has made it difficult to derive accurate predictions of nuclear behavior from general statements about the nature of international politics. For example, prognoses of future nuclear proliferation anchored in macro-level realist theories have invariably hit wildly off the mark, significantly overestimating states' demand for nuclear armament (Pelopidas, 2015). More convincing theories of nuclear proliferation have been formulated and tested through careful examination of historical cases. It stands to reason that the same would be the case for theories of nuclear weapons relinquishment. But which cases might theorists of disarmament draw on when formulating and testing their accounts? The most obvious place to start would be historical instances of nuclear weapons renunciation. However, these cases are few and far between and may not be wholly representative of the full population of cases of interest—that is, the relinquishment of nuclear weapons by all current and future nuclear-armed states. After all, the question posed here is not only why, to date, some nuclear-armed states have disarmed and not others (see Tagma, 2010), but also what it would take for current or possibly future nuclear powers to disarm in the time to come.

Additional data might therefore be acquired through examination of carefully curated analogies, observable implications of rival hypotheses, and information at higher or lower levels of theoretical aggregation (Gordon, 1991, p. 50; King et al., 1994, pp. 11, 224–225). In fact, historical “lessons” from other fields of national or international politics are frequently invoked by practitioners of nuclear arms control and disarmament, albeit seldom in a systematic fashion. Below, I assess the evidentiary value of these cases for theorizing about nuclear renunciation. For such an assessment to be possible, it must first be established what, fundamentally, the politics of nuclear renunciation involves.

As understood in this article, nuclear “renunciation” or “disarmament” involves the complete relinquishment of a nuclear arsenal by a given state, including the physical dismantlement of all nuclear warheads and their dedicated means of delivery, to wit, the kinds of actions a former nuclear-armed state would have to undertake to win recognition as a nonnuclear-weapon state under the NPT. Yet what this necessitates or implies in political terms varies greatly depending on the facts on the ground. In other words, the resistances to relinquishment may be greater or lesser depending on the degree to which nuclear weapons have been entrenched in the society of the respective state. In broad brushstrokes, these resistances can be divided into two kinds—material and ideational. First, as suggested by the case-study literature on nuclear politics, depending on the size and composition of the nuclear weapons program in question, disarmament can be powerfully resisted by material vested interests (Eaves, 2021; Nolan, 1999; Ritchie, 2010; Sauer, 2005). After all, the production and maintenance of nuclear weapons typically involves a significant number of jobs, valuable contracts, and loci for bureaucratic inertia for a myriad of companies, government agencies, think tanks, and organizations. It stands to reason that disarmament will be more difficult to achieve in a nuclear-armed state with an active nuclear weapons complex attended by a network of vested interests resisting abolition.

Second, the case-study literature further suggest that nuclear political inertia is sometimes inoculated through ideational structures expressed through strategic narratives, public discourse, and national myths (Adamsky, 2019; Ritchie, 2010; Walker, 2020). It follows that the forces of change will face greater resistance in states where such ideational structures are more prevalent or developed. For example, it is likely more difficult for a government department or agency to support renunciation if it for decades has been publicly invested in the view that nuclear arms are vital and irreplaceable instruments of security. It should be noted, however, that notwithstanding the dichotomous conceptualization provided here, the material and ideational structures are in practice often deeply intertwined, with think tanks funded by vested interests playing important roles in public debate.

In summary, on the conceptual level, nuclear disarmament as understood here involves (1) the complete dismantlement of a nuclear arsenal. A “hard case” of nuclear disarmament would further involve the complete dismantlement of a nuclear arsenal by a state with (2) an active nuclear weapons complex attended by a network of stakeholders materially or institutionally invested in the retention of nuclear weapons, and (3) a salient nuclear culture favoring the continued possession of nuclear arms. Note that these criteria apply to states and not their external conditions. Of course, variables such as geopolitical tension, the normative environment, the occurrence of wider political turmoil, or the availability of particular forms of expertise or verification arrangements might serve to render nuclear disarmament more or less likely to happen. The argument here is that the impact of these variables likely depends on the makeup of the state in question, that is, that the same exogenous pressures will have differential outcomes depending on the extent to which nuclear weapons have been entrenched in material and ideational structures.

In the next section, I assess the evidentiary value of the various “lessons” for disarmament offered by nuclear policy analysts and practitioners against the three criteria developed above. The assumption here is that a case will have greater evidentiary value the more it resembles a “hard case” of nuclear disarmament.

## Cases and analogies

### *South Africa's renunciation of nuclear weapons*

South Africa remains the only state to have built and then dismantled a nuclear arsenal. The available case-study literature underscores two crucial factors in the denuclearization of South Africa. Firstly, South Africa's decision to renounce nuclear weapons came about in the context of wider political upheavals, specifically the institution of sweeping democratic reforms and the dismantlement of the apartheid regime (Bell, 2021; Liberman, 2001; van Wyk & van Wyk, 2015). This observation seems broadly consistent with the view that radical political changes typically occur in tandem with wider crises or turmoil (e.g., Friedman, 2002, p. xiv). At the same time, however, the South African processes of disarmament and democratization were deeply intertwined; opposition to nuclear weapons had been central to the wider political mobilization that helped foster political change and upheaval in the first place (see Burgess & Kassenova, 2012; van Wyk & van Wyk, 2020).

Second, the scholarship on the South African government's decision to disarm suggests that policymakers were influenced by political contestation, popular mobilization, and shifting conceptions of norms and appropriate

action (Burgess & Kassenova, 2012). The norm of nonproliferation, in particular, appears to have exercised significant influence on South African policymakers' thinking (Bell, 2021; Liberman, 2001; Nah, 2018; van Wyk, 2015; van Wyk & van Wyk, 2015). While the nonproliferation norm was initially resisted by many of the states it was intended to restrain, determined political advocacy, diplomatic arm-twisting, and wider efforts at "strategic social construction" have over time compelled all but a handful of the world's states to embrace the NPT (Smetana, 2020, pp. 63–102; see also Rublee, 2009). For the South African foreign ministry, "South Africa's national pride would be enhanced by South Africa [disarming, joining the NPT, and thus] 'becoming a respected member of the international community'" (van Wyk, 2015, p. 408).

The influence of the security environment on South Africa's decision to disarm is a subject of ongoing scholarly debate. While some argue that the winding down of the Cold War lowered the threat of Soviet or Soviet-sponsored aggression against South Africa, allowing Pretoria to give up its nuclear arsenal (Albright & Stricker, 2016; Bell, 2021, chapter 3), others find the insecurity explanation unpersuasive (Liberman, 2001, p. 46; Nah, 2018, pp. 73–75). Either way, in a realist perspective, the systemic condition of anarchy and resulting imperative of self-help arguably should have been enough to motivate continued retention irrespective of any immediate threat (see Buzan, 1987, p. 250; Tagma, 2010, p. 170).

While the South African case offers important empirical observations, it does not fulfill all the criteria for a "hard case" of nuclear disarmament. Most importantly, Pretoria did not openly disclose its possession of nuclear weapons until after the decision to disarm had been implemented. Consequently, while South African society was in some respects heavily militarized and Pretoria's bomb was close to an open secret (Grundy, 1986), the practice of nuclear deterrence specifically was never culturally or ideologically salient. As a result, the advocates of disarmament were not obliged to wrestle with "nuclearized" national myths or publicly articulated strategic narratives. Also, in contrast to the traditional major powers, South Africa lacked access to the legitimizing tool of being defined as a "nuclear-weapon state" under the NPT. That said, South Africa did possess a full if not large nuclear weapons production complex, and an actor-network composed of military and intelligence entities, the Atomic Energy Corporation, Advana Central Laboratories, and the Armaments Corporation of South Africa staunchly resisted renunciation behind closed doors (Liberman, 2001; van Wyk, 2015). In summary, while South Africa does not (or only very partially) satisfy the third criterion of a "hard case" of nuclear disarmament established above, it would appear to satisfy the first and to a significant degree the second.

## ***The relinquishment of nuclear weapons by Belarus, Kazakhstan, and Ukraine***

It has sometimes been argued that the three former Soviet republics, which inherited nuclear weapons upon the dissolution of the Soviet Union, did not meaningfully possess nuclear weapons because they did not have access to the launch codes for the strategic nuclear forces stationed on their territories. Yet these launch codes could by all accounts have been broken in due course had the states in question attempted to do so. In addition, Belarus and Ukraine were in control of significant stocks of tactical nuclear weapons that did not require launch codes for employment (Budjeryn, 2016, p. 257). What, then, does the case-study literature reveal about the drivers of relinquishment in Belarus, Kazakhstan, and Ukraine?

First, as in the case of South Africa, where renunciation occurred in tandem with sweeping political reforms and regime change, the three post-Soviet republics made their respective decisions to relinquish in the context of wider political disruptions. In each of the three states, renunciation occurred shortly after the achievement of national independence from the Soviet Union. Eager to build new national identities and strategic narratives, Belarusian, Kazakhstani, and Ukrainian elites found the nonnuclear path to offer a useful contrast to their countries' Soviet pasts (Budjeryn, 2016, p. 183, 233; Potter, 1995). However, as in the case of South Africa, it would be a simplification to suggest that renunciation was an aberrant byproduct of other processes. In Kazakhstan, in particular, opposition to nuclear weapons had been central to the wider mobilization that contributed to the Soviet Union's disintegration (Burgess & Kassenova, 2012).

Second, and again resembling the case of South Africa, students of all three cases have found that policymakers were influenced by normative pressure and international standards of civilization, in particular the NPT and attendant norm of nuclear nonproliferation (Budjeryn, 2016; Burgess & Kassenova, 2012, p. 98; Potter, 1995). In the words of a senior Ukrainian official, by relinquishing nuclear weapons and joining the NPT, Ukraine would receive "a kind of passport to the international community of civilized nations" (Stevens, 2008, p. 59). In Kazakhstan, adversarial antinuclear politics had been prevalent for some years.

In all three cases, the security environment was ambiguous or even threatening when the respective decisions to renounce nuclear arms were made. For Belarus, Kazakhstan, Ukraine, as well as other medium-sized and small post-Soviet states, border conflicts and revanchist attempts by Moscow at reestablishing control of the bygone Soviet empire seemed real possibilities (Mearsheimer, 1990; Simes, 1992). Russia, the dominant power in the region, had come into most of the Soviet Union's coercive apparatus and faced few if any credible threats from its neighbors.

Nevertheless, of the four former Soviet republics that inherited nuclear arms from the Soviet Union, Russia was the only to retain them. Why? What separated Russia from the others was hardly that Russia faced more difficult objective security circumstances—quite the contrary—but that Russia assumed the role of the legal, political, and cultural successor state of the Soviet Union, a “nuclear-weapon state” under the NPT and a traditional major power with permanent representation on the UN Security Council.<sup>3</sup>

The renunciation of nuclear weapons by Belarus, Kazakhstan, and Ukraine provides crucial empirical observations about nuclear disarmament. Yet there are important differences between Belarus, Kazakhstan, and Ukraine, on the one hand, and the current nuclear-armed states, on the other. Significantly, the three post-Soviet states’ independent retention of nuclear arms was limited to just a few years. Further, in contrast also to South Africa, which developed its own nuclear weapons, the three post-Soviet states all inherited nuclear arms from another polity and did not possess full nuclear weapons production, maintenance, and employment complexes. By extension, they did not sustain the full array of vested interests—government agencies with nuclear roles and responsibilities, nuclearized branches of the military and intelligence apparatus, producers of nuclear warheads and delivery systems, legislators and businesses eager to protect jobs in the nuclear enterprise, defense think tanks and organizations affiliated with the nuclear complex—that help justify and sustain nuclear possession in mature nuclear states (see Rublee, 2015). However, in contrast to South Africa, where nuclear deterrence was never a salient part of public discourse, Belarus, Kazakhstan, and Ukraine had been constituent republics of a state that for decades had portrayed nuclear weapons as essential to national security. Militarism, including ideas about the utility of nuclear weapons as instruments of warfighting and deterrence, was firmly entrenched in Soviet public life, and state-sanctioned “military-patriotic education” was promoted in and through schools, factories, and mass media organizations across the Soviet Union (Holloway, 1983, pp. 160–163). And while the various Soviet republics did not have independent militaries and were thus obliged to establish new defense institutions as they gained independence, the officer cadres, infrastructure, and background knowledge on which the new states’ defense arrangements would be based were all leftovers from a hyper-nuclearized superpower. Arguably the most nuclearized of the three, Ukraine was home to a large pool of nuclear scientists, had hosted several Soviet military academies, including the Kiev Naval Political College and the Kiev Military Aviation Engineering Academy, major Soviet missile manufacturers, including Yuzhmash and Khartron, and two of the Soviet Union’s largest nuclear forces, the 43rd Strategic Rocket Army and the 46th Air Army (Sinovets & Budjeryn, 2017, p. 4).

In summary, the renunciation of nuclear weapons by Belarus, Kazakhstan, and Ukraine would appear to satisfy the first criterion above. On the second and third, the match is only partial.

### ***Nuclear stockpile reductions and limitations on deployments***

Perhaps the most frequently invoked “lessons” for disarmament policy are sourced from the history of nuclear arms reductions, in particular the history of U.S.–Soviet/Russian arms control diplomacy (e.g., Wood, 2016, p. 12). Many contributors to nuclear policy discourse make no distinction between disarmament in the sense of reductions and disarmament in the sense of complete elimination. Getting to zero, so the argument goes, is a matter of continuing the stockpile reduction process initiated in the second half of the 1980s until at some point there are no more arsenals to shrink.

Several scholars have analyzed the factors that in the late 1980s and early 1990s led to large nuclear reductions and the end of the Cold War. Most historians give prominent place to leaders (particularly Mikhail Gorbachev and Ronald Reagan), social change in the Soviet Union, underlying economic shifts, and mobilization by peace organizations (e.g., Evangelista, 1999; Suri, 2002). Several practitioners have interpreted the co-occurrence of ambitious nuclear arms control and the end of the Cold War as proof that disarmament can only take place if the right security conditions are in place (e.g., Ford, 2019). Along similar lines, it has been suggested that the conclusion of New START in 2010 was made possibly by the evolution of a benign security environment between 2008 and 2014, characterized by Dmitry Medvedev’s presidency of the Russian Federation and the Obama administration’s efforts at “resetting” the U.S.–Russian relationship (see e.g., Neuneck, 2019). There is little doubt that disarmament is more difficult to achieve in a context of heightened tension and rivalry. However, the argument that arms control and disarmament are caused by relaxations in geopolitical tension suffers from an endogeneity problem, as the relaxation of tensions is typically identified, precisely, by the occurrence of arms control and disarmament (Egeland, 2019). Moreover, judging by the existing case-study literature, it is not clear that choices concerning nuclear reductions are comparable to, or fostered by the same conditions as, choices concerning renunciation. In fact, stockpile reductions arguably do not fit any of the three criteria established above.

With respect to material vested interests, arms control can and has coexisted with thriving nuclear complexes. While certain material stakeholders invariably resist any and all curbs on nuclear activity, many of the public and commercial entities involved in the nuclear weapons enterprise have supported arms control. As pointed out by Krause (2011), incrementalist

arms control has always been linked to deterrence theory and practice, “and to the entire functioning of the so-called military-industrial complex, and not something distinct and in opposition to it” (p. 25). Since the unit cost of weapons and defense equipment tends to increase substantially from one generation to the next, vested interests have continued to prosper even if the overall number of weapon units produced and maintained has decreased substantially since the 1980s (Cooper, 2006, pp. 358–359). At the same time, all else equal, reducing the overall size of a nuclear arsenal also reduces the influence and wider economic and political significance of the vested interests that depend on the nuclear enterprise. Arms control might thus have benefits for disarmament by reducing the strength of the vested interests opposing relinquishment.

Second, in most if not all the nine states that possess nuclear weapons today, nuclear arms are firmly embedded in ideational structures (Walker, 2020). And while complete disarmament would likely require the dismantlement or rewiring of the relevant narratives and discourses, stockpile reductions can usually be undertaken without significantly brushing up against the tropes and beliefs in which the practice of nuclear deterrence is couched (Mutimer, 2011; Ritchie, 2013). This is not to say that advocates of arms control do not face intellectual or “ideological” resistance, but rather that arguments for arms control can be made without challenging the main tenets of strategic orthodoxy. For example, at the signing ceremony of New START, President Obama (2010) reassured his audience that the United States would be maintaining “a safe and secure and effective nuclear deterrent” for the foreseeable future. As it happened, his administration’s Nuclear Posture Review did not present New START as a break with nuclear deterrence theory or the supposed necessity of nuclear weapons, but instead as a means of *bolstering* deterrence, insisting that “any future nuclear reductions must continue to strengthen deterrence of potential regional adversaries” (U.S. Department of Defense, 2010, p. xi). In the words of Mutimer (2011), the fundamental assumptions underpinning arms control produce a practice that is “not only content to see nuclear weapons remain, but which actively requires them” (p. 68).

In British public discourse, “the deterrent” has been anchored in influential narratives that help constitute the collective identity of Britain “as an interventionist, pivotal world power” (Ritchie, 2013, p. 155. See also Beaumont, 2021). Importantly, the size and composition of British nuclear forces are almost entirely irrelevant to this narrative; in fact, British strategic documents have displayed what one set of scholars refer to as a “paradoxical boasting about the smallness of the British nuclear armoury” (Duncanson & Eschle, 2008, p. 550). There is an enormous difference, in other words, between dismantling British bombs and dismantling The British Bomb. In Russia, state and religious institutions continuously project the idea that

nuclear weapons are essential—even divine—keystones of Russian national identity and security (Adamsky, 2019).

For the five states defined under the NPT as “nuclear-weapon states,” the nonproliferation regime provides important rhetorical cover for the continuous rebuilding of nuclear armories. According to Russian officials, the NPT bestows “absolute legitimacy” on Russia’s retention of nuclear arms (as cited in Egeland, 2021, p. 21). For the government of France, the NPT offers the Republic “the right to maintain her deterrent at a credible level” (as cited in Green, 1996). Following the 1995 NPT review and extension conference, a British official argued that the extension had signified a “ringing endorsement from 178 countries in the form of the renewed Non-Proliferation Treaty, which extended indefinitely the right of the nuclear powers to keep their weapons” (as cited in Court, 1995, p. 469). In the words of former UK prime minister Tony Blair, the NPT “makes it absolutely clear that Britain has the right to possess nuclear weapons” (as cited in Ritchie, 2010, p. 480).

Extrapolating from limited nuclear arms control efforts to a general theory of nuclear renunciation should be done with extreme caution. Nuclear stockpile reductions and deployment caps do not obviously satisfy either of the three criteria for a hard case of nuclear disarmament identified above (it could be argued to partly satisfy the second criterion of resistance by vested interests).

### ***Nuclear rollback***

A second source of often-invoked “lessons” for disarmament theory beyond processes of renunciation are cases of nuclear reversal or rollback, that is, instances of states that initiated nuclear weapons programs or explored acquisition in other ways but changed course before obtaining a weapon (Reiss, 1995). Several states fall in this category, including Argentina, Australia, Brazil, Libya, South Korea, Sweden, Switzerland, and West Germany. Like the scholarship on renunciation, the academic literature on rollback displays broad consensus on the causes of restraint. In most cases, rollback appears to have been facilitated by a combination of sticks and carrots, that is, efforts at redressing the nuclear aspirant’s political or strategic concerns and various forms of pressure, including normative coaxing and soft power enticements expressed through the nonproliferation regime (Hymans, 2006; Levite, 2003; Mehta, 2020; Reiss, 1995; Rublee, 2009). A recent wave of scholarship has further emphasized the important role of U.S. coercion and inducements in a range of rollback cases (Coe & Vaynman, 2015; Gerzhoy, 2015; Miller, 2018).

Reversal processes were often fueled by adversarial politics and public mobilization. In West Germany, for example, the nuclear issue was

marked by “bitter debates” and “massive demonstrations and protests” against nuclearization (Ruble, 2009, p. 188). It was only through various forms of domestic and international pressure—including ferocious public opposition, U.S. threats of alliance abandonment (Gerzhoy, 2015), and adversarial domestic politics involving the Social Democratic Party overtly opposing the incumbent Christian Democrats—that Bonn begrudgingly chose nuclear forbearance. Along similar lines, Switzerland’s nuclear reversal came about in response to what one analyst describes as “deep political contestation” and “fierce public debate” (Jasper, 2012, p. 270, 285). In Australia, prime minister John Gorton was eventually forced to sign the NPT in what the opposition described as “the most grudging and graceless manner possible” (Walsh, 1997, p. 12). In the case of Sweden, the eventual decision to discontinue the Swedish nuclear weapons program was made on the back of largescale and divisive antinuclear mobilization and counter-mobilization that in the end led to the isolation and political outmaneuvering of the most ardent proponents of nuclearization (Jonter, 2016). Contrary to what one might expect based on the traditional insecurity model of nuclear proliferation, Sweden’s decision to foreswear nuclear armament came about in the context of a grand nuclear buildup by Sweden’s neighbor—the Soviet Union—and widespread cynicism about the United States’ willingness to face off against a nuclear-armed adversary on behalf of West European states (see Coleman & Siracusa, 2006, chapter 3).

Again, though, there are limits to the value of the history of nuclear reversal as a reservoir of lessons for disarmament theory; nuclear disarmament is not the inverse of either nuclear acquisition or the initiation of a nuclear weapons program. After all, as discussed above, one of the key obstacles to nuclear disarmament is the entanglement of nuclear arsenals and deterrence practices in habits, economic structures, and political culture over time (Walker, 2020). Once a state possesses nuclear weapons, agents of change must also contend with the phenomenon psychologists refer to as the “endowment effect” (Solingen, 2019, p. 119). As people on average prefer avoiding losses over securing equivalent gains, “individuals have a strong tendency to remain at the status quo, because the disadvantages of leaving it loom larger than advantages” (Kahneman et al., 1991, pp. 197–198). This is not to say that cases of nuclear rollback are entirely irrelevant to theorizing nuclear renunciation, but rather that their utility as evidence is not straightforward. In a strict interpretation of the criteria identified above, cases of rollback do not satisfy either criterion. In a more liberal interpretation, rollback cases could be argued to partly satisfy criteria 1 and 2 articulated above.

### **Nonnuclear disarmament processes**

A third possible source of lessons for nuclear disarmament beyond straightforward cases of nuclear renunciation are disarmament processes concerning other weapons, i.e., nonnuclear disarmament processes (see e.g., Eide, 2009). The history of disarmament provides a myriad of rich empirical cases. Numerous states have at different points in time given up chemical weapons, biological weapons, nondetectable fragments, cluster munitions, landmines, and other classes of weapons. Like nuclear weapons in today's nuclear-armed states, many of these weapons were for a long time considered to hold great military value and were embedded in quotidian security practices. Further, in contrast to nuclear stockpile reductions, which have invariably been justified from within the prevailing security policy paradigm, the renunciation by many states of the weapons referred to above often demanded a rewiring of a previously held "common sense" in security policy (Borrie, 2014; Garcia, 2015).

The available scholarship indicates that decisions to relinquish particular classes of weapons have often come about in response to "discursive reframing" by agents of change, heightened public mobilization and attention, and the projection of stigma and prohibitory norms through strategic social construction (Anderson, 2000; Borrie, 2009; Borrie, 2014; Koblenz, 2009; Price, 1997). For instance, the Nixon administration's unilateral renunciation of bioweapons came about in the context of the creeping emergence of a norm against the use of disease as a weapon and, in more immediate terms, sharp criticism of, and attention to, American use of herbicides in Vietnam (Koblenz, 2009, pp. 18, 49; Wampler, 2001). The campaigns against cluster munitions and landmines, similarly, relied on the ability of advocates of disarmament to reset the diplomatic agenda and draw visible political fault between supporters and opponents of change, thus creating space for adversarial politics (Anderson, 2000; Borrie, 2014; Petrova, 2016).

Many nonnuclear disarmament processes were clearly aided by reductions in geopolitical tensions and perceived security threats, notably the end of the Cold War. That said, the disarmament processes mentioned above were hardly enabled by a sense that security was no longer a concern and could now be ignored in favor of moral or economic concerns. Instead, the processes in question appear to have been fueled by new understandings of what security implied in the first place (Borrie, 2014; Garcia, 2015). It might thus be argued that the end of the Cold War opened a window of opportunity for new ideas and conceptions of security to take hold (on political opportunity structure see Meyer, 1993).

While many similarities exist between nuclear weapons politics and the politics of other weapons systems, so do important differences. Perhaps most importantly, the disarmament processes mentioned above rarely

presented significant economic threats to arms makers (e.g., Anderson, 2000, p. 106). Furthermore, critics have argued that these other weapons, in contrast to nuclear arms, were never considered essential to national or international security, and that they therefore cannot provide valid lessons for nuclear disarmament theory (Ruzicka, 2019, pp. 389–390). This objection clearly has some merit, yet the resistance to chemical, biological, cluster munition, and landmine disarmament should not be downplayed. For example, in a number of countries, not least those unarmed with nuclear or other weapons of mass destruction, landmines and cluster munitions were long justified as essential tools of security (Borrie, 2009, 2014). Also, the superpowers long justified the retention of chemical and biological agents as necessary for deterrence and stability (see e.g., Dick, 1981). In this view, it could be argued that the difference in resistance to nuclear and nonnuclear disarmament is one of degree and not quality. Ultimately, however, nonnuclear disarmament processes do not fully satisfy either of the three criteria identified above. But they provide partial matches on all three criteria (full renunciation, opposition from vested interests, and ideological resistance) and may therefore be considered to offer meaningful evidentiary value.

### ***The abolition of the slave trade***

The cases discussed above all involve restraint and abolitionism in the field of arms policy. But other fields may be able to supply equally valuable lessons for nuclear disarmament. If the resemblance is close, analogies can yield important analytical insights (Gordon, 1991, p. 50). Specifically, a number of authors have pointed to the abolition of the slave trade as a meaningful analogy to efforts to abolish nuclear weapons (e.g., Mueller, 1989). The campaign against the British slave trade, which resulted in the adoption of the 1807 Slave Trade Act, was pitted against enormous financial interests—attended by an influential actor-network of political and economic stakeholders favoring the continuation of the trade—and pervasive discourses normalizing and justifying what was then a “profitable and buoyant” trade (Oldfield, 1998, p. vi; see also Drescher, 2009).

Historians appear to be in broad agreement that the abolition of the British slave trade owed above all to the extension of norms of human dignity and successful political mobilization by antislavery campaigners (Drescher, 1994, 2009; Jennings, 1997; Oldfield, 1998; Swaminathan, 2009). Parliamentary debates, in particular, served as focal points for political contestation and media attention. From the 1780s onwards, abolitionists “combined new techniques of propaganda, petitioning, and association with the organizational techniques of mercantile and manufacturing lobbyists” (Drescher, 2009, p. 209). Debates were often rancorous and divisive.

Making their case primarily on moral, often religious, grounds, campaigners were frequently accused of causing disorder, division, and of being “traitors” to their nation (Drescher, 2009, p. 256). Over time, however, norms and honor codes changed and, with them, the social bases of the slave trade (Appiah, 2010).

According to Drescher (2009, p. 212), the abolition of the slave trade came about in the context of domestic political stability and “revived national self-confidence” in Britain. In contrast to the cases of nuclear renunciation by Belarus, Kazakhstan, Ukraine, and South Africa, then, in which change occurred during periods of national political turmoil or transition, the abolition of the British slave trade came about in the context of relative political calm. Simultaneously, with the Napoleonic wars raging, London’s security environment was far from benign. And while the abolition of the slave trade may have had little direct military relevance, the question of relative gains and economic strength clearly held significance for Britain’s security and geopolitical interests (Kaufmann & Pape, 1999). Interestingly, the elites favoring abolition were able to leverage the conflict with France to their advantage, using abolition as a vehicle of “nationalist mobilization against the Napoleonic menace” (Drescher, 1994, p. 139).

In summary, while the slave trade and practice of nuclear deterrence belong to different political domains—realists have argued that the field of national security is less malleable than other fields of policy (Hasenclever et al., 2000, p. 23)—the abolition of the slave trade comes close to satisfying all three criteria of a hard case of nuclear disarmament identified above: It concerned full abolition and not merely regulation, and it necessitated the circumvention or deflation of both the vested interests favoring the status quo and the wider culture that legitimized the practice in question.

### **Descriptive theory and approaches to disarmament**

A “hard case” of nuclear disarmament would entail the complete relinquishment of nuclear arms by a state with a and longstanding, public commitment to nuclear deterrence and a sizable nuclear weapons complex attended by a large actor-network materially invested in the continued retention of nuclear arms. No one historical case fully satisfies each of these criteria. Accordingly, scholars should acknowledge the uncertainty of inferences in the field of nuclear disarmament theory. At the same time, many cases come close to satisfying the three criteria, with some evincing partial matches on all three and others full matches on one or two. For example, while the South African case provides an example of relinquishment being forced through against the wishes of important military, bureaucratic, and economic stakeholders, the post-Soviet cases offer evidence of disarmament being pushed through in countries that for decades had been constituent republics of a

state that for decades had been overtly and publicly invested in the view that nuclear weapons were essential instruments of security.

While a different conceptualization of disarmament might have yielded different insights, the discussion above indicates that processes of nuclear renunciation have less in common with incremental arms control processes than with a number of other historical events, including of nuclear reversal, nonnuclear disarmament processes, and the abolition of the slave trade, which, while not squarely belonging to the field of security policy, provides an example of an abolitionist project succeeding in the face of pervasive discourses legitimizing the status quo and material interests and a powerful actor-network resisting change. Further scholarship could investigate the drivers and potential lessons to be drawn from other abolitionist processes, for example in the fields of policing and criminal justice (see Acheson, 2020).

What, if anything, can be generalized from the various events and processes discussed in this article? First, in each case, change was precipitated by the stigmatization of the practice or object in question and emergence of new conceptions of appropriate action. Second, in some cases, such as the processes of nuclear relinquishment by South Africa and the three post-Soviet republics, and arguably a number of nonnuclear disarmament processes such as the renunciation of biological weapons by the United States in the context of the turmoil of the Vietnam War, change appears to have been aided by wider political commotion or exogenous shocks. In other cases, perhaps most notably the British abolition of the slave trade and multiple instances of nuclear rollback and nonnuclear disarmament, change occurred during periods of relative political stability. Third, security circumstances varied significantly across the cases discussed. While improved security conditions undoubtedly helped foster or allow for change in many cases, improved security conditions were often facilitated by the very processes under discussion. In some cases, such as the Swedish nuclear reversal, and arguably the cases of disarmament by the three post-Soviet states, renunciation was pushed through in spite of what seemed a threatening or at the very least uncertain security environment. A final observation is that, while diplomacy was of great importance in many cases, change invariably took place through unilateral, domestic action. The only exception is the U.S.–Russian arms control process, through which agreements have been based on formal reciprocity and a logic of incrementalism. As established above, however, the history of arms control arguably holds low evidentiary value for theorizing about nuclear renunciation.

**Table 1** summarizes basic information about the various cases' score on key variables and resemblance to a hard case of nuclear disarmament. The evidence discussed in this paper suggests that stigmatization is a necessary condition for nuclear disarmament, and that exogenous shocks, political

**Table 1.** Summary of cases and evidentiary value.

Cases	Variables/conditions			Evidentiary value
	Security environment	Stigmatization/contestation	Exogenous shock/political upheaval	
South African nuclear relinquishment	<i>Benign</i>	<i>Significant</i>	<i>Yes</i>	<i>High</i>
Belarusian, Kazakhstani, Ukrainian nuclear relinquishment	<i>Ambiguous/threatening</i>	<i>Significant</i>	<i>Yes</i>	<i>Moderate to high</i>
U.S. bioweapon relinquishment	<i>Threatening</i> <sup>4</sup>	<i>Significant</i>	<i>Arguably</i>	<i>Moderate</i>
British abolition of the slave trade	<i>Threatening</i>	<i>Significant</i>	<i>No</i>	<i>Moderate</i>
Swedish nuclear rollback <sup>a</sup>	<i>Threatening</i>	<i>Significant</i>	<i>No</i>	<i>Low to moderate</i>
U.S.–Russian bilateral nuclear agreements	<i>Varied</i>	<i>Significant</i>	<i>No</i>	<i>Low</i>

<sup>a</sup>The various cases of rollback display somewhat varying dynamics. The Swedish case is included here for the purpose of illustration.

turmoil, or the disappearance of a perceived threat can increase the prospects for change.

The general findings articulated above conflict with at least three common assumptions in the field of nuclear policy analysis. First, the NPT is widely presented as a vehicle not only for nonproliferation but also a future nuclear weapons elimination process (see Egeland, 2021). The analysis above, however, suggests that the treaty functions as a break on change by legitimating the status quo and shielding the permanent members of the UN Security Council from normative pressure (see also Hanson, 2022; Noda, 2022; Pretorius & Sauer, 2022). In particular, the treaty’s legal recognition of the established great powers as “nuclear-weapon states” appears to have provided the actor-networks favoring the retention of nuclear weapons within those states with rhetorical resources to justify their countries’ continuous rebuilding of nuclear forces as natural, legal, and legitimate. In the words of Tannenwald (2020, p. 125), the NPT “effectively legitimizes deterrence” for the traditional major powers. The findings support the argument advanced by proponents of the Treaty on the Prohibition of Nuclear Weapons that nuclear disarmament requires the extension of a prohibitory norm against nuclear possession as a precursor to policy change (Ritchie, 2019; see also Gibbons & Herzog, 2022).

Second, a pervasive argument in the literature on nuclear disarmament politics holds that disarmament campaigners “must work with the grain of international relations” and accept that nuclear powers will only agree to renounce their nuclear weapons if other nuclear-armed states do the same. In this view, “at some point everybody must disarm together, in an

orchestrated and synchronized process” (Freedman, 2009, p. 22). Against this conventional wisdom, the analysis above suggests that major change, even in the field of disarmament policy, usually takes place unilaterally. Supporting this finding, it has been argued that managerial arms control processes have in fact been detrimental to the goal of disarmament as they have helped buttress the view that that, while nuclear excesses or imbalances should be redressed, nuclear weapons possession per se is necessary and legitimate as long as other states also retain nuclear arms (Krause, 2011; Mutimer, 2011). In this view, arms control has a contradictory effect on the cause of disarmament. On the one hand, arms control can help reduce the size and influence of the actor-network resisting further action in the field of arms control and disarmament. On the other hand, the assumptions on which the practice of nuclear arms control rest can serve to bolster the deterrence orthodoxy, thus making disarmament more difficult to achieve.

Third, several commentators insist that advocates of abolition should temper their demands and rhetoric, repudiating efforts that might foster polarization between nuclear and nonnuclear states. The path to elimination, in this perspective, goes through polite, elite-level deliberations geared toward generating consensus. For example, according to an expert group assembled on the initiative of the government of Japan, a world without nuclear weapons can be achieved if diplomatic stakeholders abandon divisive language and demands: “Civility in discourse and respect for divergent views must be restored to facilitate a joint search for a common ground” (Group of Eminent Persons for the Substantive Advancement of Nuclear Disarmament, 2019, p. 1). The assumption underpinning this position is that the nuclear-armed states and their discursive outriders are sincere in their rhetorical support for the abolition of nuclear arms, and that the challenge confronting abolitionist is not one of political will but rather one of coming up with the technical fixes that would enable the implementation of a shared disarmament consensus. However, beyond abolitionist cheap talk by officials, there is little or no evidence that the nuclear-armed states and the vested interests that sustain their nuclear complexes are sincere in their commitment to abolition (Burke, 2016; Egeland, 2021; Ruzicka, 2019).

The notion that advocates of disarmament should eschew divisive rhetoric and instead recognize and respect their opponents’ arguments flows from a theory of change anchored in the belief that social transformation depends on persuasion. The underlying idea is that, for change to happen, progressive diplomats must rationally convince their recalcitrant peers to alter their views, be it at NPT review conferences or other diplomatic events. However, this understanding of nuclear politics rests on at least two dubious assumptions. Firstly, it rests on the premise that diplomatic delegations to multilateral conferences have the power to change their government’s policies—that diplomats are autonomous agents and not mere representatives of their governments. A

number of scholars have argued, to the contrary, that the real power of change lies not with diplomats but the respective states' political parties and leaders, war-planning bureaucracies, arms producers, epistemic communities, and defense and intelligence establishments. Secondly, the idea that change must necessarily take place through persuasion ignores alternative avenues of social transformation, including political maneuvering and pressure, the shaping of future leaders' worldviews, and rhetorical coercion or entrapment (see e.g., Petrova, 2016).

## Conclusion

For all the challenges of establishing external validity, any theory of nuclear disarmament must be developed in conversation with historical cases and analogies. What distinguishes a scientific or theoretical proposition from an ideological one is precisely that the former can be proved wrong or undermined by evidence (Eagleton, 1991, pp. 139–140). The solution to the problem of data scarcity on nuclear renunciation, in this view, should not be metaphysical speculation or conjecture, but the systematic review of “observable implications” and historical cases and parallels (Gordon, 1991, p. 50; King et al., 1994, pp. 11, 224–225). In this article, I have identified, discussed, and problematized the historical evidence and illustrations policy analysts and practitioners draw on in debates about nuclear disarmament. I conclude that some of the most commonly invoked sources of lessons have limited or no evidentiary value. In particular, I have argued that the history of incremental nuclear arms control offers less evidentiary value than often assumed. Further, there is little if any evidence that the NPT can provide an effective platform for the total nuclear disarmament of the traditional major powers, i.e., those defined under the agreement as “nuclear-weapon states.” On the contrary, the evidence suggests that the NPT has provided the established major powers with rhetorical resources to legitimate their retention and rebuilding of nuclear arsenals. It would appear that nonnuclear disarmament processes, cases of nuclear reversal, and developments that saw the abandonment of morally contested practices such as the slave trade offer better, if still only limited, exemplars for nuclear disarmament theory. In combination, a patchwork of such cases can explain different pieces of the puzzle and, by extension, offer useful insights.

The evidence discussed in this article suggests that processes of abolition are unlikely to succeed in the absence of deep stigmatization and contestation of the object or practice in question. With respect to wider political upheavals or crises, the evidence is less consistent. The Belarusian, Kazakhstani, South African, and Ukrainian processes of nuclear relinquishment indicate that periods of wider political upheaval can offer windows of opportunity to overturn the nuclear status quo. Given the relatively speaking high

evidentiary value of these cases compared to others, this is an important rejoinder. That said, several other relevant cases, including the Swedish and West German nuclear reversals and movement to end the British slave trade, suggest that change might also occur during periods of relative political stability. Finally, I found that, while improvements to the security environment can provide opportunities to successfully contest the status quo, variations in security conditions do not translate automatically into higher or lower demand for (nuclear) armament; in nuclear politics, perceptions of (in)security are causes as well as effects.

Future research should search for additional evidence and analogies that might falsify the rudimentary account developed in this article, including by looking into parallels between past or hypothetical processes of nuclear renunciation and political transformations and processes of abolition in the fields of civil rights, policing and criminal justice, environmental politics, and welfare policy.

## Notes

1. In this paper, the term “nuclear disarmament” is used interchangeably with “renunciation,” “relinquishment,” and “abolition” to signify the physical dismantlement of a state’s nuclear arsenal. As understood here, nuclear disarmament would also involve the destruction or conversion of the state’s wider nuclear weapons program, though not necessarily the irreversible elimination of all fissile material or all nuclear facilities.
2. While on one end of the spectrum theorists subscribing to neo-materialist ontologies have conceptualized nuclear arms as just one of a myriad of transitory or “unstable” technologies (Bourne, 2016), subscribers to the theory of the nuclear revolution see nuclear weapons as exceptional and incomparable to any other invention (e.g., Craig, 2020).
3. It has been suggested that Belarus, Kazakhstan, and Ukraine disarmed because they, in contrast to Russia, did not possess robust command and control systems and, by extension, did not have secure second strike capabilities and were thus vulnerable to disarming strikes by Russia (e.g., Tagma, 2010). However, simple command and control systems could probably have been devised relatively quickly had the necessary political will been present. Pending that, the three states (or at any rate Ukraine and Kazakhstan) could easily have issued public statements that nuclear field commanders were authorized and obliged to counter any surprise attack with use of tactical nuclear weapons, something that would arguably yield more than enough credibility for an “existential deterrence” posture. It seems doubtful that any aggressor could have been confident that a bolt from the blue would fully disarm the target state, in particular with respect to Belarus and Ukraine, which held large arsenals.
4. As discussed above, the security environment may have been of less direct relevance in this case.

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