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## **Long Live the (Nuclear) Revolution!**

### **Introduction**

Has the so-called nuclear revolution – the contention that nuclear war is unwinnable, and therefore (among other implications) crises will be rare, nuclear arms races will only waste resources, and security dilemmas will not define adversarial relations<sup>1</sup> – survived the end of the Cold War? Answers to this question have important implications for foreign policy. If new nuclear states are unlikely to continue the tradition of nuclear nonuse, then other states should go to extraordinary lengths to prevent nuclear weapons proliferation. Conversely, if the nuclear revolution has endured, then nonproliferation efforts can proceed with patience instead of panic and preemption.

Some scholars argue that the revolution was always myth,<sup>2</sup> more a deductive exercise or recommendation by academia than a powerful explanation of states' or leaders' behavior. Others contend that Cold War -era policymakers tried and failed to implement the nuclear revolution's prescriptions.<sup>3</sup> Still others contend that while the revolution's emphasis on the stability of nuclear deterrence might explain the Cold War stalemate, it does not apply to more recent additions to

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<sup>1</sup> The fullest exploration of the concept is: Robert Jervis, *The Meaning of the Nuclear Revolution: Statecraft and the Prospect of Armageddon*, Cornell Studies in Security Affairs (Ithaca, NY: Cornell University Press, 1989).

<sup>2</sup> Keir A. Lieber and Daryl Grayson Press, *The Myth of the Nuclear Revolution: Power Politics in the Atomic Age* (Ithaca, N.Y: Cornell University Press, 2020).

<sup>3</sup> Brendan Rittenhouse Green, *The Revolution That Failed: Nuclear Competition, Arms Control, and the Cold War* (Cambridge: Cambridge University Press, 2020), <https://doi.org/10.1017/9781108779593>.

the nuclear weapons club like Pakistan or North Korea that have strong incentives to use their nuclear arsenals early in wars with conventionally superior adversaries.<sup>4</sup>

I argue that, while not all of its predictions have been borne out, in the main the nuclear revolution has been, and continues to be, alive and well. Four factors strongly suggest that the revolution explains important patterns of nuclear politics. First, nuclear nonuse has held across a wide variety of actors, states, contexts, and now eras, suggesting that the most important implication of the revolution is quite robust. Second, nuclear crises have proven to be sobering events for all, and the near-universal fear that they will spin out of control has actually worked to keep a lid on them. Third, nuclear crises force states to learn mutual accommodation as a survival tactic, resulting in hotlines, *détentes*, and charm offensives of various kinds. Fourth, the nuclear nonuse norm complements deterrence, providing a double-proof against nuclear employment in war.

After a brief discussion of the relevant literature, I develop these four points below, and then I suggest a modified form of the nuclear revolution that incorporates some of the new critics' points. This is not just a post-hoc exercise: Both the nuclear revolution's old formulation and the critics' assessments leave important puzzles unanswered, and a recasting of the nuclear revolution helps to resolve the dissonance. With a new, adjusted nuclear revolution theory, I derive some indicators – “signs of the revolution” – that can guide empirical study.

I then take these indicators to a brief study of the 2017 Korean Missile Crisis. This crisis is just the kind of event that is supposed to show the limited applicability of Cold War -era nuclear politics, with hot-tempered actors of questionable rationality, incentives on the part of North Korea to go nuclear first, and leaked consideration of a first strike by the United States. In

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<sup>4</sup> Vipin Narang, *Nuclear Strategy in the Modern Era: Regional Powers and International Conflict*, electronic resource, Princeton Studies in International History and Politics (Princeton, N.J.: Princeton University Press, 2014).

fact, the crisis has many elements that nuclear revolution theorists would find recognizable: a) at the theoretical level, acknowledgement by experts that, as ever, North Korea would be unlikely to lash out unless it thought that its country faced an imminent, major attack; b) a crisis that stopped short of war and led to higher levels of cooperation than before (for a little while); and c) a sense that Trump's beliefs, much more than any shift in capabilities, created their own reality by spontaneously changing the threat level coming from North Korea.

The article concludes with theoretical limitations, lingering puzzles, and some comments on contemporary challenges, including the hope that we might learn the revolution's lessons without having to risk everything in dangerous crises.

## **The Revolution and Its Critics**

### *The Nuclear Revolution, Jervis Style*

The nuclear revolution starts with the idea that war is unwinnable. Ever since nuclear-armed states have been able to retaliate after enduring an initial strike, war between them has made little sense. Only by self-fulfilling prophecy – one side becoming convinced that the other is about to strike in the very near term – can nuclear war commence. Because great powers today are defined in part by their nuclear arsenals, great power war has grown scarce, too. This is indeed a major change, but according to revolution adherents, it should lead to others as well.

When Robert Jervis writes of the nuclear revolution, he uses the term “quite literally—a change that turns the established truths about the relationships between force and statecraft on

their heads.”<sup>5</sup> In conventional days, a larger force would increase a state’s bargaining leverage and, if push came to shove, its chances of prevailing. With nuclear weapons, revolution theorists argue, a small force and a large one are functionally equivalent, because so much explosive potential comes in such small packages. Nuclear superiority approaches meaninglessness as a mutual second-strike capability is attained.<sup>6</sup>

With an assist from psychology – especially Prospect Theory’s proposition that losses usually hurt more than gains gratify – Jervis adds other important implications. The status quo should endure, because forcing change is difficult when deterrence is robust. Crises should be rare, because starting one will not pay when status quo defenders have an advantage. Alliance retainment and reshuffling should be of only minimal consequence, since the balance of power is unlikely to tip. Beliefs now play a larger role in creating reality, because a) officials end up fighting wars exclusively in their heads rather than letting things play out on the battlefield, and b) with objective security variations between powers reaching rough equality, ideas and symbols make up much of what is left.

### *Recent Critiques and a Brief Discussion of Them*

If the nuclear revolution never *was*, it would be harder to argue that it *is*. In this section and the next, I argue that the nuclear revolution both *was* and *is* an important explanation for the nuclear-armed state behavior.

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<sup>5</sup> Jervis, *The Meaning of the Nuclear Revolution*, 15. My retelling here will draw mostly on Jervis, but it should be noted that he acknowledges a considerable intellectual debt to figures like Bernard Brodie, Thomas Schelling, and Michael Mandelbaum.

<sup>6</sup> Robert Jervis, “Why Nuclear Superiority Doesn’t Matter,” *Political Science Quarterly* 94, no. 4 (1979): 617–33. For a dissenting view see: Matthew Kroenig, *The Logic of American Nuclear Strategy: Why Strategic Superiority Matters* (New York: Oxford University Press, 2018).

The nuclear revolution has always had its skeptics,<sup>7</sup> but two recent developments have given a new wave of revolution critics an extra bounce in their step. First, new archival research has revealed more nuclear war-planning details from the Cold War than was previously known. Second, today's nuclear world is more complex than that of the Cold War, with more asymmetric rivals and greater vulnerabilities. What follows is a non-exhaustive and very brief look at recent critiques, together with the extent and limits of their compatibility with my argument.

One challenge to the nuclear revolution is that it was a myth from the very beginning. In a recent book, Daryl Press and Keir Lieber argue that nuclear states seem as focused as ever on relative gains, more than willing to engage in arms races, and just concerned about alliances as their prenuclear ancestors.<sup>8</sup> Yet they also hold that nuclear weapons have made for a very robust deterrent. What explains why this deterrent power is not able to yield the sort of transformation of international politics that nuclear revolution theorists predict? Lieber and Press's answer is that the nuclear stalemate is not as robust as revolution theorists suggest. During the Cold War, the United States planned on prevailing in a nuclear war if deterrence failed, which required enough warheads and delivery capabilities to target the opponent's weapons instead of only cities and infrastructure. The Soviets were not comfortable with a barebones deterrent, and so they built up their capabilities and made them less vulnerable to attack. The United States wanted to retain a warfighting edge, so it continued with its own build-up and counterforce plans. The result was a world not unlike a conventional one, with concerns about relative gains and arms races. Today, the United States has developed considerable cutting-edge counterforce

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<sup>7</sup> Cold War critics included Colin Gray, Albert Wohlstetter, and Paul Nietz.

<sup>8</sup> Lieber and Press also mention that states continue to be interested in strategic and resource-rich territory. Since it is unclear why nuclear weapons would make states uninterested in resources that could also be used for non-military purposes, I will focus on the other aspects of their critique.

capabilities that threaten to destabilize deterrence. Nuclear weapons may have added to states' deterrence capabilities, according to Lieber and Press, but they did not revolutionize international politics.<sup>9</sup>

Brendan Rittenhouse Green argues that the nuclear revolution “failed.” His book covers U.S. nuclear policy in the 1970s, supposedly the heyday of détente and arms control during the Cold War. Green argues that the United States and the Soviet Union were never able to rid themselves of the fear that the other might value nuclear superiority and consider nuclear war winnable. The crucial case for Green’s book is Jimmy Carter and his administration. Carter assumed office eager to reduce the United States’ reliance on nuclear weapons, Green argues, but was forced to compete with the Soviets lest the latter become convinced that it had an edge. Thus the nuclear era follows the international-political formula of earlier ones: uncertainty about other states’ intentions leads to security dilemmas, arms races, and sometimes war—and unilateral exit from this dangerous game is not a safe option.<sup>10</sup>

A third approach suggests that a settled nuclear stalemate that may or may not have characterized the Cold War no longer applies. Vipin Narang argues that new nuclear powers do not face the same incentives as the superpowers before them. Some, like Pakistan and North Korea, face much stronger conventional and nuclear adversaries, and they develop force postures that make them more likely to use nuclear weapons early in a crisis to stave off defeat. To do so, they must operationalize their weapons “as warfighting instruments,” including pre-delegation of authority to the military to launch nuclear weapons, quick deployment of nuclear assets, and semi-transparent plans to generate credibility of first use. These “asymmetric escalators” are more able to deter conventional attacks, but their postures are more of a financial burden on the

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<sup>9</sup> Lieber and Press, *The Myth of the Nuclear Revolution*.

<sup>10</sup> Green, *The Revolution That Failed*.

state, and they are also more prone to early or inadvertent nuclear use. Narang's depiction of increased chances of tactical nuclear use and varying deterrence effects in the post-Cold War era of regional nuclear powers seems hardly the vision of a revolution theorist.<sup>11</sup>

In some ways, the critics' arguments are more in consonance with the nuclear revolution than most of the books' titles suggest. The critics show how a variety of characters tried to pursue foreign policy business as usual – to pretend that nuclear weapons were like any other. The revolution theorists show how these efforts were constrained. Differences emerge in how rational each side of the debate believes policymakers to be. The critics are generally rationalists, while the revolution theorists expect policymakers to be sensitive to costs, but sometimes irrational or wrong about the implications of nuclear weapons for foreign policy – hence the “illogic” of the American approach that Jervis names.<sup>12</sup>

Recent critics are also close to those they are critiquing when it comes to outlining the conditions under which a country will actually use nuclear weapons. Narang's asymmetric escalators are willing to use nuclear weapons early because they face an immediate, conventional existential threat. This is not so different from classic works that predict nuclear weapons will fly only when a regime believes itself to be otherwise toast. NATO threatened the first use of nuclear weapons against the Soviet Union in response to a massive westward conventional invasion by the Soviets. France promised early use during the Cold War because it would be very difficult for the Soviets to make a believable commitment to spare Paris if the two sides came to blows, even if the weapons stayed conventional at first. India stopped at the Line of Control in the 2001-2002 crisis because Pakistan's first use of the bomb was believable – and it

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<sup>11</sup> Narang, *Nuclear Strategy in the Modern Era*.

<sup>12</sup> Robert Jervis, *The Illogic of American Nuclear Strategy*, Cornell Studies in Security Affairs (Ithaca, NY: Cornell University Press, 1984).

was believable because India could not credibly commit to forgoing a total conventional victory once the line was crossed. As was the case during the Cold War remains true: Nuclear weapons will only be used when a state so armed believes it faces an imminent existential threat, and adversaries would do well to make sure that nuclear states do not get that impression.

Less convincing is the contention that different nuclear postures produce *dramatically* different deterrence outcomes. While various postures might matter on the margins, deterrence violations mostly seem to be suspiciously circumscribed. Narang labels Pakistan undeterred in Kargil in 1999, but the asymmetric nature of the attack<sup>13</sup> – unmarked uniforms, limited numbers – suggests that India’s conventional superiority and nuclear backstop did indeed deter Pakistan from a bolder incursion, especially given Pakistan’s interests. Deterrence occurrences are notoriously difficult to identify,<sup>14</sup> but one is struck by the lack of a complete nuclear deterrence failure. The crises, alliances, and pursuit of relative gains leave political scientists plenty to explain. But the specter of nuclear war continues to limit states to saber-rattling and, compared to earlier eras with lots of great power wars, today’s nuclear politics can thankfully be described as much ado about not quite so much.

The arguments about the inevitable persistence of the security dilemma also fail to convince, and the problem is not merely theoretical. In fact, we have a highly visible example of a country that has opted out of fierce nuclear competition without disastrous consequences: China. Lieber and Press cite China as an aberrant case: Their theory predicts that it should have been trying harder to neutralize disadvantages versus the United States with a more war-ready

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<sup>13</sup> Narang, *Nuclear Strategy in the Modern Era*, chap. 10.

<sup>14</sup> Christopher H. Achen and Duncan Snidal, “Rational Deterrence Theory and Comparative Case Studies,” *World Politics* 41, no. 2 (1989): 143–69.



nuclear force. Instead, China has had a stated no-first-use policy, no tactical nuclear weapons, and ability to launch missiles on warning.<sup>15</sup> The key here is not that

Some experts expect nuclear competition to heat up between China and the United States,<sup>16</sup> and recent revelations suggest that China is indeed working toward a greater nuclear capability. But that does not mean that China *had to* do so. Moreover, China may be trying to keep the United States from putting too much stock in American counterforce and missile defense capabilities, but we still have no solid reasons to believe that the United States *had to* become obsessed with counterforce and missile defense. The United States' thirty years of adherence to the ABM Treaty and thin rationale for leaving it show that its interest in missile defense in particular was far from inevitable.

### **The Relevance of the Revolution**

The persuasiveness of the critics' claims wanes further when four additional factors are considered.

#### *(1) The 'Proliferation' of Hard Cases*

States and leaders do not have to believe in nuclear deterrence in order for deterrence to work.<sup>17</sup> This is not unlike the nuclear revolution theorists' claim that "MAD is a fact, not a policy." Critics have made much of the fact that nuclear actors have planned for warfighting and primacy rather than deterrence. In effect, what the critics have done is crank out one hard case after another for the argument that nuclear nonuse can hold across a wide range of actors. The

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<sup>15</sup> Lieber and Press, *The Myth of the Nuclear Revolution*, chap. 4.

<sup>16</sup> Caitlin Talmadge, "The US-China Nuclear Relationship: Why Competition Is Likely to Intensify," *Brookings Institute*, Global China, September 2019, 1–15.

<sup>17</sup> Kenneth N. Waltz, "Nuclear Myths and Political Realities," *American Political Science Review* 84, no. 3 (1990): 737.

importance of the revolution, paradoxically, looks somewhat more powerful and durable for their efforts.

Most nuclear revolution theorists would maintain that it helps if actors *do* believe in the revolution's main tenets. Not only would it likely save resources, but it would also commit a state to accepting mutual vulnerability rather than dreams of nuclear dominance and war-fighting. Acceptance of the revolution for policy would probably nudge the chances of war lower, and this development should be welcomed given the level of destruction that could be wrought. But the chances of nuclear war appear to be limited to a low probability interval, and tolerance for a range of policies is high.

## *(2) Nuclear Crises Stay in Control*

A paradox at the heart of the revolution deserves revisiting: The more intense the nuclear crisis, the stronger the deterrent effect, and the more brinkmanship players begin to peer into their own graves. Everyone is afraid that a nuclear crisis will spin out of control, which is precisely why one never has. For instance, as the Cuban Missile Crisis began to heat up, Khrushchev tightened his control on when nuclear weapons could be used.<sup>18</sup> While crises make nuclear war more likely, the relationship between crisis intensity and the probability of hot war does not follow a linear or exponential trajectory, because participants start to look desperately for the exits. While countries prefer to wrest some value out of their crises, doing so often means credibly daring to fight. The deeper the crisis, the harder states and their leaders will seek a settlement, even an embarrassing one. It turns out that leaders are more interested in saving their literal faces than their metaphorical ones.

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<sup>18</sup> Michael Dobbs, *One Minute to Midnight: Kennedy, Khrushchev, and Castro on the Brink of Nuclear War* (New York: Vintage, 2009).

### *(3) Nuclear Crises Are Sobering and Enlightening*

States and leaders learn from nuclear crises. Nuclear crises can be extremely sobering events, and they prompt the kind of learning we might expect from more physically scarring incidents. The scarier of the crises leave leaders with a sense that ‘we just cannot live like this anymore,’ and create a thin partnership between adversaries, as if deep down, all of humanity is pitted against the weapons that it has created. The lessons sometimes need to be relearned, especially in the wake of leadership change. Still, dyads as opposed as the United States and the Soviet Union, or India and Pakistan, have shown that they can come to see themselves as being in the nuclear world together. Thus the Cuban Missile Crisis led to the nuclear hotline between the United States and the Soviet Union,<sup>19</sup> the aggressive Able Archer NATO exercises in 1983 convinced Reagan to open up dialogue with the Soviets,<sup>20</sup> and Pakistan’s Prime Minister reached out to India after a scare in 2019 because neither side could afford a miscalculation “considering the weapons you have and we have.”<sup>21</sup> Nuclear weapons create the sparsest of common causes – not dying in a blast or a fire – among adversaries that might otherwise have almost no shared interests.

### *(4) Double Proof against Nuclear Use*

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<sup>19</sup> Steven E. Miller, “Nuclear Hotlines: Origins, Evolution, Applications,” *Journal for Peace and Nuclear Disarmament* 4, no. 1 (March 5, 2021): 176–91.

<sup>20</sup> Robert E. Hamilton, “ABLE ARCHER at 35: Lessons of the 1983 War Scare,” Foreign Policy Research Institute, December 3, 2018, <https://www.fpri.org/article/2018/12/able-archer-at-35-lessons-of-the-1983-war-scare/>.

<sup>21</sup> “Don’t Want War, Can’t Afford Miscalculations: Imran Khan,” ANI News, February 27, 2019, <https://www.aninews.in/news/world/asia/dont-want-war-cant-afford-miscalculations-imran-khan20190227170305/>.

Nuclear nonuse – and therefore major war – is overdetermined by theoretical expectations. Scholars may debate whether the nuclear silence owes more to deterrence or a normative taboo against nuclear use, but neither explanation precludes the other.<sup>22</sup> In fact, nuclear use inhibitions based on both moral misgivings and fear of retaliation can inhere in the same state and even the same small group or individual.<sup>23</sup> Deterrence and the taboo thus provide a double proof against nuclear use and should give us confidence in the endurance of the revolution even if one side of the duo should stumble.

### **Reformulating the Nuclear Revolution**

Not all of the nuclear revolution's original expectations have held up under historical examination. Crises have not proven to be as rare as predicted, even if they have favored defenders of the status quo. Governments of some nuclear-equipped countries also seem to have missed the memo that nuclear superiority does not pay. The United States and the Soviet Union built up their nuclear arsenals far beyond what was necessary for deterrence, and Pakistan and India continue to roll out more warheads every year.

Still, the nuclear revolution deserves the weight of the name “revolution.” Crises are capped at a certain level of intensity. Nuclear armed countries do not dare invade each other in large numbers, and generally avoid getting in shooting wars if they cannot envision how such a war would be limited. Great power wars are now unlikely and perhaps unthinkable. In other words, to conclude that the revolution was a myth or a failure, we will be forced to make too

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<sup>22</sup> Nina Tannenwald, *The Nuclear Taboo: The United States and the Non-Use of Nuclear Weapons since 1945* (Cambridge University Press, 2007).

<sup>23</sup> For one example, see Robert McNamara and Dean Rusk's back-to-back quotes in Fred Kaplan, “JFK's First-Strike Plan,” *The Atlantic*, October 1, 2001, <https://www.theatlantic.com/magazine/archive/2001/10/jfks-first-strike-plan/376432/>.

much of crises that killed no one and plans that amounted to nothing – nothing save extra deterrence insurance that the deterrer probably could have done without. So while not all of the predictions of the nuclear revolution have come to pass, and while interstate relations still give scholars plenty to explain, the advent of the nuclear age has been nothing short of revolutionary for the millions of people *not* dying in great power wars since the end of World War II.

Ultimately, both revolution theorists and their critics leave puzzles unanswered, and a formulation made to sound favorable to one side could be reformulated to sound favorable to the other. Thus, “If nuclear weapons transformed international politics, why were there so many crises?” can lead to “If nuclear-era great power crises are just like their conventional predecessors, why haven’t they resulted in wars?” The same game of dueling questions can be played for nuclear war-planning and arms races. To resolve these tensions, a revision of the nuclear revolution’s predictions may be in order to better capture the actual patterns observed.

Much of the tension between revolution theorists and their critics revolves around assumptions about rational actors and what rational choices should yield. For instance, revolution theorists expect that rational actors will understand that war is unwinnable, and so we should see fewer crises and the preservation of the status quo because it is difficult to turn crises into revisionist gains by credibly threatening war. If the revolution’s expectations are not met, Jervis, channeling Morgenthau, blames “conventionalization” – treating nuclear weapons as conventional weapons, perhaps as a psychological response to the contradictions and uncomfortable self - adversary relationships defined by mutual vulnerability that a nuclear world presents.

Critics, meanwhile, suggest that nuclear arms races are indeed rational. If state A suspects that state B values nuclear superiority, then state A has an incentive to deny state B an edge, if

only for the sake of bargaining leverage in a future crisis. The incentive remains even if state A thinks nuclear superiority is ridiculous, and even if it is wrong about state B's beliefs.<sup>24</sup> The problem with this line of reasoning is that state A can simply call state B's bluff, and no imaginable political objective will be worth the risk past a certain mid-crisis level of peril. Besides, a full rational analysis would have to include the danger of playing out one's side of the security dilemma – there's never a reason to assume casually that this route is the safest option.

Some critics go further to argue that nuclear superiority does, in fact, matter. Matthew Kroenig likens states with asymmetric nuclear arsenals to a small vehicle facing a much larger one in a game of chicken. The smaller vehicle, Kroenig argues, is more likely to swerve.<sup>25</sup> Kroenig's argument has come under some criticism for coding and evidence, but it has theoretical problems, too. If the two vehicles are playing chicken, then the smaller car can still do unacceptable damage to the larger one – and this is indeed the case between nuclear powers when we define “unacceptable” by measuring damage against almost any conceivable political objective. Therefore, if the smaller car does yield with disproportionate frequency, it is because of an agreed-upon social convention that might be changed, not for immutable rational reasons.

To resolve these disputes, I assume that actors possess “bounded rationality”<sup>26</sup> and that accumulated knowledge from prenuclear times has proven sticky. If nuclear weapons have changed much of great power politics, there is little reason to believe that all leaders and thinkers would immediately dismiss thousands of years of concerns with security dilemmas and relative gains and embrace the nuclear era's peculiarities and contradictions at once. Policymakers often

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<sup>24</sup> Green, *The Revolution That Failed*, chap. 2.

<sup>25</sup> Kroenig, *The Logic of American Nuclear Strategy*.

<sup>26</sup> The phrase was coined in Herbert A. Simon, *Administrative Behavior*, 4th Revised Edition (New York: Free Press, 1997).

understand politics through analogies.<sup>27</sup> Besides, many a false prophet has proclaimed that a certain new military technology has changed everything. Initial skepticism of the nuclear revolution is therefore warranted, and experience becomes the ultimate educator. Happily, nuclear crises are scary enough to bring most to their senses without going through the trials of a hot war. Even for those who never come around to the revolution's tenets, deterrence typically holds.

The result is a slight recasting of the nuclear revolution that incorporates bounded rationality in the form of slower updating, as well as learning and relearning through crises. See Table 1.

*Table 1: Old vs. Revised Nuclear Revolution Expectations*

<b>Old Expectations</b>	<b>Expectation – Revision/Elaboration</b>
Military victory impossible	Victory planned, but implementation never preferable to status quo; mutual vulnerability persists
Peace prevails; war can occur only by self-fulfilling prophecy	Lower level wars capped to prevent escalation to nuclear level (e.g., Kargil); large-scale conflict still limited to self-fulfilling prophecies

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<sup>27</sup> Yuen Foong Khong, *Analogies at War: Korea, Munich, Dien Bien Phu, and the Vietnam Decisions of 1965* (Princeton, N.J.: Princeton University Press, 1992).

Crises rare	Crises still occur, but go nowhere and lead to learning
Preservation of status quo	Leaders that try revisionism usually rebuffed by nuclear realities
Credibility hard to demonstrate	Credibility easier to demonstrate for smaller, more vulnerable states
Beliefs create reality	Beliefs yield wide variation of threat perception, especially for large vis-à-vis small nuclear powers

The last two rows of Table 1 include a few ways in which the revolution’s expectations do not clearly make for a more dangerous post-Cold War era. First, states that are more vulnerable to attack have an easier time making their nuclear threats credible, because it is easier for outside powers to generate the kind of threat level that would engender a nuclear response.<sup>28</sup> Thus Pakistan was able to credibly threaten the use of nuclear weapons in the early 2000s and keep India on its side of the Line of Control.<sup>29</sup> Second, beliefs are likely to play an even larger role in today’s asymmetric nuclear stand-offs. As I show in the next section, larger powers are

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<sup>28</sup> Waltz makes a similar point in Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: An Enduring Debate*, Third Edition (New York: W.W. Norton & Co, 2013), 27.

<sup>29</sup> Narang, *Nuclear Strategy in the Modern Era*. Even Russia has tried to use the credible threat of nuclear weapons to cover potential deficiencies against “conventionally superior opponents.” See Michael Kofman and Anya Loukianova Fink, “Escalation Management and Nuclear Employment in Russian Military Strategy,” *War on the Rocks*, June 23, 2020, <http://warontherocks.com/2020/06/escalation-management-and-nuclear-employment-in-russian-military-strategy/>. Kristin Ven Bruusgaard argues that Russia no longer has a lowered nuclear threshold in part because of its recent advances in conventional arms. See Kristin Ven Bruusgaard, “The Myth of Russia’s Lowered Nuclear Threshold,” *War on the Rocks*, September 22, 2017, <https://warontherocks.com/2017/09/the-myth-of-russias-lowered-nuclear-threshold/>.



free to gauge the threat level of smaller powers according to their preexisting beliefs, quite apart from the threat that smaller powers actually pose.

### **The Nuclear Revolution on the Korean Peninsula?**

The future looked bleak on the Korean Peninsula in 2017. U.S. President Donald Trump and North Korean leader Kim Jong Un were trading insults.<sup>30</sup> North Korea was testing nuclear bombs and ballistic missiles.<sup>31</sup> By late 2017 and early 2018, rumors were flying that the Trump administration was considering a limited strike against North Korea.<sup>32</sup> In one of the more famous remarks, Trump said, “North Korea best not make any more *threats* to the United States. They will be met with fire and fury like the world has never seen.”<sup>33</sup> Refusing even to be threatened seems far from the mutual vulnerability to which the nuclear revolution expects states and leaders will eventually acclimate themselves.

Yet things changed fairly quickly. By June 2018, after his first meeting with Kim, Trump announced, “There is no longer a nuclear threat from North Korea.”<sup>34</sup> “Before taking office people were assuming that we were going to War with North Korea,” Trump declared over Twitter. “President (Barack) Obama said that North Korea was our biggest and most dangerous

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<sup>30</sup> Matt Stevens, “Trump and Kim Jong-Un, and the Names They’ve Called Each Other,” *New York Times*, March 9, 2018, sec. World, <https://www.nytimes.com/2018/03/09/world/asia/trump-kim-jong-un.html>.

<sup>31</sup> Arms Control Association, “Chronology of U.S.-North Korean Nuclear and Missile Diplomacy,” July 2020, <https://www.armscontrol.org/factsheets/dprkchron>.

<sup>32</sup> Mira Rapp-Hooper, “The Cataclysm That Would Follow a ‘Bloody Nose’ Strike in North Korea,” *The Atlantic*, January 31, 2018, <https://www.theatlantic.com/international/archive/2018/01/the-cataclysm-that-would-follow-a-bloody-nose-strike-in-north-korea/551924/>.

<sup>33</sup> Peter Baker and Choe Sang-Hun, “Trump Threatens ‘Fire and Fury’ Against North Korea If It Endangers U.S.,” *The New York Times*, August 8, 2017, sec. World, <https://www.nytimes.com/2017/08/08/world/asia/north-korea-un-sanctions-nuclear-missile-united-nations.html>. Emphasis added.

<sup>34</sup> Eileen Sullivan, “Trump Says ‘There Is No Longer a Nuclear Threat’ After Kim Jong-Un Meeting,” *New York Times*, June 13, 2018, sec. U.S., <https://www.nytimes.com/2018/06/13/us/politics/trump-north-korea-nuclear-threat.html>.

problem. No longer – sleep well tonight!”<sup>35</sup> North Korea agreed to freeze nuclear and missile testing, but it had the same capabilities before the Trump-Kim summit in Singapore as it did afterward. How was such a reversal possible? Could the nuclear revolution have had a hand in U.S.-North Korean affairs after all?

Methodological challenges abound here. First and most obviously, the event is recent, and the data are scarce. We do not know very much about the inside story in the Trump administration, and even less on the North Korean side. Second, like all studies of nuclear war, we are fortunately facing a “dog that doesn’t bark” problem, trying to understand why an event did not occur.<sup>36</sup> Third, if the importance of the nuclear revolution does not rest entirely on people believing in its tenets, its influence may be hard to detect.

To overcome the methodological issues, I work through several “signs of the revolution,” those indicators that align with the revised nuclear revolution’s expectations found in Table 1. To study those times when the dog does not bark – i.e., a “near-miss” investigation of what would have brought about war – I turn to people who know the case best as well as those who have gamed out the military possibilities on the peninsula.

The 2017 Korean crisis is a hard case for the nuclear revolution. Leading nuclear experts believed North Korea had incentives to use nuclear weapons first to stave off conventional invasion from a larger foe as part of a deterrence posture called “asymmetric escalation.”<sup>37</sup>

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<sup>35</sup> Anne Flaherty, Adam Schreck, and Foster Klug, “On Twitter, Trump Declares That the North Korea Nuclear Threat Is Over,” PBS NewsHour, June 13, 2018, <https://www.pbs.org/newshour/politics/on-twitter-trump-declares-that-the-north-korea-nuclear-threat-is-over>.

<sup>36</sup> Nina Tannenwald, “The Nuclear Taboo: The United States and the Normative Basis of Nuclear Non-Use,” *International Organization* 53, no. 3 (1999): 433–68.

<sup>37</sup> Vipin Narang and Ankit Panda, “Command and Control in North Korea: What a Nuclear Launch Might Look Like,” War on the Rocks, September 15, 2017, <https://warontherocks.com/2017/09/command-and-control-in-north-korea-what-a-nuclear-launch-might-look-like/>; Vipin Narang, “Why Kim Jong Un Wouldn’t Be Irrational to Use a Nuclear Bomb First,” *Washington Post*, September 8, 2017, [https://www.washingtonpost.com/outlook/why-kim-jong-un-wouldnt-be-irrational-to-use-a-nuclear-bomb-first/2017/09/08/a9d36ca4-934f-11e7-aace-04b862b2b3f3\\_story.html](https://www.washingtonpost.com/outlook/why-kim-jong-un-wouldnt-be-irrational-to-use-a-nuclear-bomb-first/2017/09/08/a9d36ca4-934f-11e7-aace-04b862b2b3f3_story.html).

Moreover, both mechanisms of nuclear forbearance, rational deterrence and nuclear nonuse norms, were believed to be inapplicable to either side. Trump's National Security Advisor H.R. McMaster thought Kim was irrational and undeterrable.<sup>38</sup> Journalist Evan Osnos called both Trump and Kim irrational, not to mention impetuous and stubborn.<sup>39</sup> Nina Tannenwald, who has written more than anyone to advance the idea that a nuclear taboo explains nonuse, argued that the norm was "weakening under pressure." If the nuclear revolution could still explain important parts of the crisis, it would have survived a serious challenge.

*Were military plans ever going to be preferable to the status quo?*

In 2017, North Korean regime representatives worked hard to convince American reporters that they were serious about war with the United States. As one diplomat explained, "We've been through [suffering] twice before. The Korean War and the Arduous March [the 1990s famine]. We can do it a third time." When prompted that a nuclear war would be even worse, he responded, "A few thousand would survive. And the military would say, 'Who cares? As long as the United States is destroyed, then we are all starting from the same line again.' A lot of people would die. But not *everyone* would die." With a prediction so stark, it is not hard to see why North Korea ended up preferring the status quo.

The Trump administration probably entertained the idea of limited strikes during the crisis,<sup>40</sup> but it came under a volley of criticism for this position. Some lawmakers pushed back on

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<sup>38</sup> Rapp-Hooper, "The Cataclysm That Would Follow a 'Bloody Nose' Strike in North Korea."

<sup>39</sup> Evan Osnos, "The Risk of Nuclear War with North Korea," *The New Yorker*, September 7, 2017, <https://www.newyorker.com/magazine/2017/09/18/the-risk-of-nuclear-war-with-north-korea>.

<sup>40</sup> Ben Riley-Smith, "Exclusive: US Making Plans for 'bloody Nose' Military Attack on North Korea," *The Telegraph*, December 20, 2017, <https://www.telegraph.co.uk/news/2017/12/20/exclusive-us-making-plans-bloody-nose-military-attack-north/>; Gerald F. Seib, "Amid Signs of a Thaw in North Korea, Tensions Bubble Up," *Wall Street Journal*, January 9, 2018, sec. Politics, <https://www.wsj.com/articles/amid-signs-of-a-thaw-in-north-korea-tensions-bubble-up-1515427541>.

the idea that the strikes could stay limited.<sup>41</sup> Van Jackson summarizes the criticism among nuclear scholars and Korea experts, and he wonders aloud whether all the “intensity of public pushback,” plus the legal problems with a premeditated attack against a threat that was not imminent, stopped the administration from owning up to the plans.<sup>42</sup> Cynthia Watson told one reporter, “I don't think the military is anxious to launch a strike as they do know well the implications. These are sane, rational professionals who are weighing the relative dangers differently than many people discussing the Korea problem.”<sup>43</sup> Thus, while we cannot know for sure what tipped the balance away from a limited strike for the Trump administration, fears of escalation voiced from several directions may have played a substantial role. After the summits, the administration settled for an arrangement that, in terms of control and capabilities, bore a lot of resemblance to the status quo ante.

*Was war only likely by self-fulfilling prophecy?*

Peace prevailed, of course, but what were the possible pathways to war? Tellingly, just about all the experts routed the envisioned commencement of war through the belief that war is unavoidable. Most of the situations that Van Jackson imagines involve Pyongyang perceiving “U.S.-led invasion or regime change.”<sup>44</sup> Vipin Narang warns that North Korea could “go first, go early, and go massively,” but *only if* “Kim thinks we are coming after him or his forces.”<sup>45</sup> Ankit

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<sup>41</sup> Joe Gould, “US Lawmakers: ‘Bloody Nose’ Strike Would Spark Massive War,” *Defense News*, January 18, 2018, <https://www.defensenews.com/congress/2018/01/18/us-lawmakers-bloody-nose-strike-would-spark-massive-war/>.

<sup>42</sup> Van Jackson, *On the Brink: Trump, Kim, and the Threat of Nuclear War* (Cambridge: Cambridge University Press, 2018), 163–66.

<sup>43</sup> Quoted in Nirmal Ghosh, “‘Bloody Nose’ Strike on North Korea Will Trigger All-out War, Warn Analysts,” *The Straits Times*, February 2, 2018, <https://www.straitstimes.com/world/united-states/bloody-nose-strike-on-north-korea-will-trigger-all-out-war-warn-analysts>.

<sup>44</sup> Jackson, *On the Brink*, 44.

<sup>45</sup> Narang, “Why Kim Jong Un Wouldn’t Be Irrational to Use a Nuclear Bomb First.”

Panda explains Kim's logic through a first-person narrative: "The calculation might look something like this: *My enemies are preparing to invade. If I do not use my nuclear weapons now, I might lose them entirely to offensive strikes by stealth fighters my air defense radars cannot see.*"<sup>46</sup> In a fictional congressional report about a 2020 U.S.-North Korean nuclear war, Jeffrey Lewis sees only one fundamental path to the outcome that transpires: "No one, not even Kim Jong Un, would have started a nuclear war with the United States of America unless he was certain that there was no other option, no other way out." Unfortunately for the characters in Lewis' speculative world, Kim decided that he was forced by circumstances to commence hideous hostilities, because he calculated that it was his one and only chance of surviving: "It was time to give the order. Waiting would be fatal."<sup>47</sup>

Although the Kim regime made some noise about attacking with nuclear weapons at the slightest hint of an invasion and using nuclear weapons first, this seemingly low threshold is not surprising given how vulnerable North Korea is to its much larger neighbors. Ultimately, Jina Kim finds that Pyongyang would only execute a nuclear strike given "a nuclear attack or a conventional attack on its territory" or the strong belief that such an attack was imminent.<sup>48</sup> For the United States, a "bloody nose" strike might have led to general war, and the primary path was that the North Koreans might not have regarded the strike as limited.<sup>49</sup>

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<sup>46</sup> Ankit Panda, *Kim Jong Un and the Bomb: Survival and Deterrence in North Korea* (New York: Oxford University Press, 2020), 83.

<sup>47</sup> Jeffrey Lewis, *The 2020 Commission Report on the North Korean Nuclear Attacks Against the United States: A Speculative Novel* (New York: Houghton Mifflin, 2018), 106–7, <http://ebookcentral.proquest.com/lib/harvard-ebooks/detail.action?docID=5295180>.

<sup>48</sup> Jina Kim, "North Korea's Nuclear Posture and Its Implications for the U.S.-ROK Alliance," *North Korea and Asia's Evolving Nuclear Landscape* (National Bureau of Asian Research, August 2, 2017), 42, <https://www.nbr.org/publication/north-koreas-nuclear-posture-and-its-implications-for-the-u-s-rok-alliance/>.

<sup>49</sup> Andrew O'Neil, "Why a First Strike Option on North Korea Is a Very Bad Idea," *The Conversation*, January 31, 2018, <http://theconversation.com/why-a-first-strike-option-on-north-korea-is-a-very-bad-idea-90229>.

*Did the crisis inspire learning?*

It is difficult to know if real learning occurred, but we can say that both sides became very creative in their attempts to crawl out of the crisis. For Kim Jong Un, this meant reaching out to his counterpart in South Korea, but only after successful tests of a thermonuclear device and a long-range ballistic missile. Trump, for his part, surprised everyone – even his own advisors – by agreeing to meet with Kim in 2018. Hence both sides took considerable political risks and turned their backs on a lot of their own vitriolic rhetoric to get out of the crisis. The arc of the crisis and its aftermath mirror previous ones – from less to greater levels of cooperation – though many details of the crisis remain to be discovered.

*Was the status quo preserved?*

Yes. Little meaningful, material change has occurred on the peninsula since the peak of the crisis, but not for lack of trying. Trump would have loved obtaining the verifiable and irreversible denuclearization that was the focus of his initial maximum pressure campaign. Kim would have loved seeing an end to U.S.-ROK joint military exercises and heavy U.S. troop presence on the peninsula. On a longer timescale, North Korea probably does dream of reuniting the peninsula on Pyongyang's terms, as American hawks contend. In the end, both sides decided to pursue their ends through diplomacy rather than catastrophic war. And the line separating North and South Korea is in the same place that it was in 1953.

*Did both sides try to demonstrate the credibility of their nuclear deterrents?*

Definitely. Trump not only talked openly of “totally destroying” North Korea.<sup>50</sup> He also signed off on risky flight paths to convince Pyongyang that the United States was serious.<sup>51</sup> At one point, he bragged of an American “armada” steaming right toward the peninsula.<sup>52</sup> (It was actually headed in the opposite direction.) Meanwhile, North Korean rhetoric was bellicose, even by North Korean standards. Most telling was North Korean effort to convince western journalists like Osnos and Kristof that they would be willing to face any amount of pain to knock out the United States, too.

North Korea’s effort to make its nuclear threats credible suggest one area where the nuclear revolution’s modified expectations are not borne out. The theory expects North Korea not to have to work so hard to convince outsiders that its nuclear threat is credible, since the regime is vulnerable. Yet North Korea toiled to convince the United States that it meant business, possibly to overcome Trump’s doubts about whether the Kim’s “nuclear button” worked,<sup>53</sup> Trump’s belief that the war might stay “over there,”<sup>54</sup> or his advisors’ suppositions that a limited strike would be perceived as limited. It was harder than the theory would expect to get the United States to take the threat of nuclear devastation from North Korea seriously.

### *Did beliefs create reality during the crisis?*

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<sup>50</sup> Arms Control Association, “Chronology of U.S.-North Korean Nuclear and Missile Diplomacy.”

<sup>51</sup> Phil Stewart and Idrees Ali, “U.S. Bombers Fly off North Korea’s Coast in Show of Force,” *Reuters*, September 23, 2017, <https://www.reuters.com/article/us-northkorea-missiles-pentagon-idUSKCN1BY0UY>.

<sup>52</sup> Simon Denyer and Emily Rauhala, “Despite Talk of a Military Strike, Trump’s ‘Armada’ Actually Sailed Away from Korea,” *The Washington Post*, April 18, 2017, [https://www.washingtonpost.com/world/despite-talk-of-a-military-strike-trumps-armada-was-a-long-way-from-korea/2017/04/18/e8ef4237-e26a-4cfc-b5e9-526c3a17bd41\\_story.html?noredirect=on&utm\\_term=.69667b654213](https://www.washingtonpost.com/world/despite-talk-of-a-military-strike-trumps-armada-was-a-long-way-from-korea/2017/04/18/e8ef4237-e26a-4cfc-b5e9-526c3a17bd41_story.html?noredirect=on&utm_term=.69667b654213).

<sup>53</sup> Peter Baker and Michael Tackett, “Trump Says His ‘Nuclear Button’ Is ‘Much Bigger’ Than North Korea’s,” *The New York Times*, January 3, 2018, sec. U.S., <https://www.nytimes.com/2018/01/02/us/politics/trump-tweet-north-korea.html>.

<sup>54</sup> Erik Ortiz and Arata Yamamoto, “Sen. Graham: Trump Says War with North Korea an Option,” *NBC News*, August 2, 2017, <https://www.nbcnews.com/news/north-korea/sen-lindsey-graham-trump-says-war-north-korea-option-n788396>.

Here the theory appears strongest. The evolution of the crisis shows that Trump's perceived level of threat from North Korea depended less on material realities, and more on his own mood. His reversal surely had several causes, including South Korean President Moon Jae In's willingness to brave initial criticism from the United States and extend a hand to North Korea. The fortuitous timing of the 2018 Winter Olympics in PyeongChang provided a forum for bridge-building on the peninsula.<sup>55</sup> Still, some strange elixir of beliefs, including Trump's fascination with authoritarianism and overconfidence in the power of interpersonal relations, allowed Trump to simply turn the dial to a new threat level associated with North Korea. In a nuclear world, such reversals are allowable, because they are highly unlikely to lead to exploitation.<sup>56</sup>

### *Summary*

The nuclear silence survived the 2017 Korean crisis because it is never a good day to start a nuclear war, and the dangers of escalation loom over any attempt to strike a limited blow or alter the status quo. Whether either side likes it or not, both continue to live in a state of mutual vulnerability.

If the United States had gone ahead with the bloody nose strike, would the situation have unraveled? Perhaps. But the fear that the crisis would spin out of control might have brought both sides to their senses even at that late stage. With so much at stake, however, there was little point in taking the risk.

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<sup>55</sup> Jackson, *On the Brink*.

<sup>56</sup> William L. d'Ambruso, "Falling in Love Again: U.S.-North Korean Relations and the Biden Administration," Text, *The National Interest* (The Center for the National Interest, April 26, 2021), <https://nationalinterest.org/blog/korea-watch/falling-love-again-us-north-korean-relations-and-biden-administration-183697>.



## **Conclusion(s)**

### *Implications for IR Theory: Challenges for Realism and Constructivism*

The nuclear revolution reveals growth areas for international relations theories. This development is, in some ways, unsurprising: If the revolution deserves its dramatic name, then theories should strain to cover both the prenuclear and nuclear eras. In particular, constructivists should allow that much of nuclear weapons' effects are presocial – that is, they have direct material effects not rooted solely in our understanding of them or the norms that have developed around them. Realists, meanwhile, would do well to acknowledge the importance of beliefs and (especially) the effects of uncertainty in a nuclear world.

Constructivists' research program has focused on showing how norms constitute state interests and identities – that is, states understand who they are and what they want by virtue of the social context in which they find themselves. The ideational emphasis does not mean that constructivists must subscribe to “ideas all the way down” as an underlying philosophy. Wendt talks of a “materialist substrate” upon which social activity can be observed, and a social theory developed. The theorist's work involves identifying which “brute material forces” might have an “independent effect” on international outcomes.<sup>57</sup>

Wendt's list of brute material facts includes statements such as, “Armies with tanks will usually defeat armies with spears,” and, “Muskets can penetrate chainmail but not shoot across oceans.” Among these pronouncements is another one directly relevant to this paper: “The possession of nuclear weapons with second-strike invulnerability makes nuclear war less likely.”<sup>58</sup> For Wendt, then, the history of nuclear nonuse has substantial material underpinnings.

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<sup>57</sup> Alexander Wendt, *Social Theory of International Politics* (New York: Cambridge University Press, 1999), 110.

<sup>58</sup> Wendt, 111.

Since great power war today would be nuclear war, material conditions go a long way toward explaining the dearth of great power war over the past seven decades.

The nuclear revolution also coaxes important concessions from realism and suggests new areas of potential overlap with constructivism. First, much of the politics that *follows* the establishment of second-strike forces belongs in the realm of ideas and beliefs. Jervis explains:

[S]cholars have not fully explicated the dilemmas and understood the extent to which our conceptions of the role of nuclear weapons in world politics change the world—and, indeed, create it—as much as they mirror it. Many of our standard analytical tools [as of 1989] do not serve us well here. The general framework of Realism, which underlies most American analyses of international politics, simply does not provide the concepts or orientations that are needed to understand situations in which psychological and symbolic factors loom so large. I do not mean that I can create a new, appropriate approach. But the statement at least provides a start to understanding the liability of our general social science tradition that analyzes reality apart from the beliefs that both we as scholars and actors themselves hold.<sup>59</sup>

Jervis seems to be calling for constructivist analysis the same year that the word “constructivist” was coined.<sup>60</sup> In the decade that followed, self-described constructivists would pay special attention to the ways in which beliefs create reality. If constructivism would do well to acknowledge the presocial difference that nuclear weapons make, then realism should also

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<sup>59</sup> Jervis, *The Meaning of the Nuclear Revolution*, 175–76.

<sup>60</sup> Nicholas Greenwood Onuf, *World of Our Making: Rules and Rule in Social Theory and International Relations* (Columbia, S.C.: University of South Carolina Press, 1989). It should be noted that feminist theorists had already been critiquing what they saw as an artificial separation between observer and observed for some time.

concede that after second-strike capabilities are established, nuclear politics is, to a large extent, what states and leaders make of it.

Furthermore, today's realists do not always register the full extent to which nuclear weapons have changed great power relations. Most allow that war between nuclear states is less likely but are reticent about more fundamental alterations to the basic theory. Take, for instance, the supposed importance of uncertainty, usually in reference to others' intentions, in explaining why the cooperation between great powers is limited. John Mearsheimer makes uncertainty one of five central assumptions in his theory of offensive realism and his account for why relations between great powers should be viewed as "tragic."<sup>61</sup> Dale Copeland singles out uncertainty over adversaries' current and future intentions as the most crucial difference between constructivism and realism, and the most important reason to prefer the latter to the former.<sup>62</sup> Similarly, Sebastian Rosato argues that the "inscrutable intentions" of great powers confirms the fears of structural realists and puts the United States and China on a collision course.<sup>63</sup> Journalists sometimes invoke a more general condition of uncertainty regarding issues of war and peace, typically in ominous tones.

Jennifer Mitzen and Randall Schweller note that it is often misplaced certainty, rather than uncertainty, that causes wars. They consider a range of ways in which misplaced certainty leads to more conflict, from undue confidence that a threat is benign to premature conclusions about an adversary's connection to terrorists.<sup>64</sup> The nuclear world makes the problem of misplaced certainty even more salient. Consider nuclear war as war by self-fulfilling prophecy,

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<sup>61</sup> John J. Mearsheimer, *The Tragedy of Great Power Politics* (New York: WW Norton & Company, 2001).

<sup>62</sup> Dale C. Copeland, "The Constructivist Challenge to Structural Realism: A Review Essay," *International Security* 25, no. 2 (2000): 187–212.

<sup>63</sup> Sebastian Rosato, "The Inscrutable Intentions of Great Powers," *International Security* 39, no. 3 (2015): 48–88.

<sup>64</sup> Jennifer Mitzen and Randall L. Schweller, "Knowing the Unknown Unknowns: Misplaced Certainty and the Onset of War," *Security Studies* 20, no. 1 (2011): 2–35.

as revolution theorists maintain it would have to be. Jervis argues that “it is hard to see how World War III could occur unless one or both sides concluded that it was inevitable in the near future.”<sup>65</sup> An actor would have to have very high confidence in this conclusion since it would lead to very dangerous policies. Moreover, “possibly inevitable” would be a difficult rhetorical position to maintain, because nothing is objectively “possibly inevitable.” Nuclear war is such an awful prospect that powerful psychological forces work against reaching such a conclusion. Still, the bridge to nuclear war is through (initially misplaced) certainty that it cannot be avoided. Realists must come to grips with the danger that uncertainty will be resolved as misplaced certainty in the lead-up to any future major war between great powers.

Meanwhile, uncertainty may be underrated as a peacekeeper in the nuclear era, as some realists have observed. Writing about a general uncertainty, of which uncertainty about adversaries’ intentions is a subset, Waltz claims, “Because no one can be sure that a major conventional attack on a nuclear country’s vital interests will not escalate to the nuclear level, it is deterred. Uncertainty about controlling escalation is at the heart of deterrence . . . In a conventional world, uncertainty may tempt a country to join battle. In a nuclear world, uncertainty has the opposite effect. What is not controllable is too dangerous to bear.”<sup>66</sup> To combine Waltz’s point with the previous paragraph, one wants to be sure that nuclear war cannot be avoided before striking the first blow. No one begins a nuclear war ‘just to be safe.’

### *Lingering Puzzles for Future Work*

- (1) I have argued that the fact that various states led by various leaders in various contexts have all managed to keep from using nuclear weapons since 1945 suggests

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<sup>65</sup> Robert Jervis, “War and Misperception,” *Journal of Interdisciplinary History* 18, no. 4 (1988): 675–700.

<sup>66</sup> Sagan and Waltz, *The Spread of Nuclear Weapons*, 100–101.

that the result must transcend luck. Could the same logic be applied to nuclear accidents? (My project cannot settle the well-known debate between Sagan and Waltz on whether more nuclear weapons states may be better or worse. I have not presented a systematic way of judging whether the war-deterring effects of nuclear weapons outweigh the risk of accident, or the expected value, however defined, of each over time.)

- (2) For various reasons, nuclear revolution theorists are usually skeptical of counterforce policies. They see such policies as unworkable and unsustainable, overly expensive, prone to arms races, and, most importantly, rooted in a conventional mindset that has not fully grappled with the mutual vulnerability endemic to life in a nuclear world. Yet counterforce and other war-fighting measures have been a major part of the United States military's standard approach for a long time. How can those who call for an end to counterforce be sure that war-fighting plans are not the real deterrent, and counterforce is not a victim of its own success?
- (3) Suppose that Kroenig is correct on the empirical claim that nuclear superiority matters and has bargaining consequences. How might we escape such a world? Even if the origins of the superiority advantage are social in nature, as I have argued, that does not mean that changing the attending expectations would be easy.

### *Privileging Underreactions to Realize Peace*

The nuclear revolution is a helpful place to begin understanding nuclear politics, from the earliest days of the nuclear era until today. The revolution's insights mean that we can pursue nonproliferation with deliberation and patience rather than panic or preemption.

The nuclear revolution can also help explain why, while new North Korean military hardware is sure to make news, the status quo persists. Take the new nuclear-capable cruise missile that North Korea recently tested.<sup>67</sup> On the one hand, the cruise missile is an important development, because it allows North Korea's nuclear weapons to evade missile defenses and shows the Kim regime's continued interest in improving its nuclear deterrent. On the other hand, the missile changes very little. The United States was not going to trust its missile defenses to protect it from unacceptable damage to the point that it would pursue invasion or regime change in North Korea. Such a political goal would not be worth risking millions of lives. North Korea, meanwhile, will not be emboldened to attack its neighbors because its new cruise missile capability does nothing to prevent retaliation – and South Korea and Japan can threaten Kim's regime even without the United States' help. Again, no political goal would be worth the risk.

The greater danger is war by self-fulfilling prophecy. One implication is that countries like the United States need to take care that they do not become too zealous with their nuclear deterrence credibility demonstrations, a concern that is particularly important for states that try to extend the nuclear umbrella to allies. Credibility demonstrations often involve getting close to war and could convince an opponent that war is the only way out. That is a dangerous game that we need not play. Nuclear deterrence does not need that much help.

It is comforting that crises can prompt learning, but it would be even more comforting if states and leaders could learn without crises. Deteriorating U.S.-China relations are causing some experts to ask what it will take to avoid war:

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<sup>67</sup> Choe Sang-Hun, "North Korea Reports Long-Range Cruise Missile Test as Arms Race Intensifies," *The New York Times*, September 13, 2021, sec. World, <https://www.nytimes.com/2021/09/13/world/asia/north-korea-cruise-missile-arms-race.html>.

At a recent public conference panel in China, a senior Chinese nuclear expert made the following observation: when it comes to the nuclear race, the United States and China today are somewhat like the United States and the Soviet Union in the early 1960s. This observation implies that the two countries may be in the early stages of a long, intense nuclear arms race. This expert judged that it might take a major crisis—something of similar severity to the Cuban Missile Crisis—to sober up political leaders enough to make them reflect on the dangers of the current course.<sup>68</sup>

The United States and China will likely find the status quo stubbornly durable, but let us hope that we do not need a close brush with Armageddon to prove it to ourselves.

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<sup>68</sup> Tong Zhao, “What’s Driving China’s Nuclear Buildup?,” Carnegie Endowment for International Peace, August 5, 2021, <https://carnegieendowment.org/2021/08/05/what-s-driving-china-s-nuclear-buildup-pub-85106>.