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How nuclear proliferation causes conflict: the case for optimistic pessimism

Michael D. Cohen

ABSTRACT
The claim that the spread of nuclear weapons leads to interstate conflict and nuclear war has become very influential. However, proliferation pessimists have failed to specify *how* and *when* nuclear proliferation precipitates conflict. I make four arguments for an optimistic pessimism. (1) The few preventive strikes against nuclear facilities that have occurred would have occurred absent of the target's nuclear program, and these rare strikes did not lead to conflict escalation. (2) The problem of nonsurvivable arsenals is, properly understood, a problem of preventive-war motivations where subjective uncertainty reduces the dangers of arsenal survivability. (3) Claims that bias within nuclear organizations may lead to accidental nuclear detonations suffer from omitted variable bias: leaders' decisions to revise the status quo after developing nuclear weapons tend to give rise to the most dangerous nuclear accidents. Accidents that have not occurred during a nuclear crisis pose substantially less risk of nuclear escalation. (4) Leaders of nuclear states have tended to engage in conventional aggression, but experience with nuclear weapons moderates their conflict propensity. Ultimately, I argue that while nuclear weapons have led to conflict through one causal mechanism and for a limited time, the dangers are substantially weaker than usually assumed.

KEYWORDS
Nuclear proliferation; pessimism; nuclear accidents; preventive strikes/ war; escalation; Iran; North Korea

Many scholars and policy makers believe that nuclear proliferation increases the likelihood of interstate conflict. The development of nuclear weapons by North Korea and Iran is widely assumed to increase the probability of regional conflict on the Korean peninsula and Persian Gulf. Any potential stabilizing or war-deterring effects of the spread of nuclear weapons are considered outweighed by the increased probability of conventional and nuclear war.[1] Director of National Intelligence James Clapper argued in 2014 before the US Congress that the spread of nuclear weapons around the world constitutes one of the greatest threats to US national security.[2] Secretary of State Hillary Clinton claimed that a nuclear-armed Iran would be "a direct threat to the lives and the livelihoods and the stability not only of the region but beyond."[3] Scott Sagan claimed that "we should worry that Iranian leaders with nuclear weapons will see them as a shield behind which they can more safely engage in aggression against neighbors and the United States."[4]

According to traditional proliferation-pessimist wisdom, nuclear proliferation generates the conditions for conflict in several ways, by inviting preemptive strikes on

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nascent nuclear states whose nuclear arsenals cannot survive a first strike, increasing the risk of nuclear-weapon accidents, and increasing the likelihood that states will engage in conventional or subconventional aggression.[5]

Despite the high stakes involved and a lack of clarity over when and how newly or aspiring nuclear states would use nuclear weapons and thus cause conflict, many believe that preventive strikes against nascent nuclear-weapon states represent the best—and in some cases only—option to deal with proliferators.[6] However, and notwithstanding more than seventy years of living with nuclear weapons and much evidence that speaks to these mechanisms, we lack an empirical assessment that specifies how and when nuclear weapons have actually caused conflict.[7] It is unclear whether the evidence marshaled by proliferation pessimists supports their claims: these scholars have not sufficiently addressed whether nuclear weapons *caused* the ensuing conflicts. This article argues that, of the mechanisms identified as triggers by which nuclear proliferation may lead to conflict, only one—conventional aggression by nuclear powers—has done so.[8] But even here, *experience* with nuclear weapons moderates the conflict propensity of *new* nuclear powers. Nuclear proliferation leads to conflict under restrictive conditions and for limited periods of time. A case can therefore be made for "optimistic pessimism" regarding the spread of nuclear weapons: nuclear proliferation poses some dangers under some conditions, but the dangers are much weaker than usually assumed.

This article makes four key arguments. First, preventive strikes to destroy nuclear facilities are rare and do not escalate to war; moreover, they often would have occurred even if the target state did not have a nuclear program. Second, the problem of survivable arsenals is a problem of preventive-war motivations where subjective uncertainty—not arsenal size—reduces the dangers presented by non-survivable arsenals. Third, claims about dangerous bias in the organizations that manage nuclear weapons causing accidental crises and nuclear detonations suffer from omitted variable bias: leaders' decisions to challenge the status quo from "behind a nuclear shield" tends to cause those accidents that pose the greatest risk of nuclear war. Fourth, concerns about leaders using nuclear weapons as shields behind which they can pursue dangerous foreign policies has qualitative and quantitative support, but experience with nuclear weapons moderates the conflict propensity of new nuclear states. Consequently, the dangers that nuclear proliferation, preventive-strike motivations, non-survivable arsenals, and nuclear accidents pose to regional and global stability are much weaker than usually assumed. Nuclear proliferation could lead to conflict by emboldening new nuclear states within their respective regions, but this tends to be a short-term effect that ends after a few years. While North Korean or Iranian nuclear missiles may cause problems in the short term, proliferation-pessimist claims that nuclear proliferation leads to conflict warrant substantial revision. An optimistic pessimism is in order. A nuclear Iran or North Korea will be less dangerous than usually assumed.

This article makes several contributions to our understanding of proliferation pessimism and nuclear-weapon proliferation. First, it proposes a novel argument about how several methodological errors aided the intellectual diffusion of proliferation pessimism, and shows how the destructive potential of nuclear weapons has caused scholars and analysts to overestimate the potential for nuclear weapons to lead to conflict. Second, it confronts core proliferation pessimist claims—mainly by the most influential pessimist, Stanford University's Scott Sagan—head on, and shows that most of their assertions

about nuclear weapons and conflict do not survive empirical and methodological scrutiny. Third, this essay specifies how and when nuclear proliferation by Iran and North Korea might lead to conflict and suggests that many proposed strategies to deal with these challenges—such as attacking a potential proliferator—should be discarded. Finally, it argues that extended deterrence policies that strike the balance between deterring and reassuring new nuclear powers are key to reducing the dangers associated with nuclear proliferation.

Preventive-war motivations

Scholars have argued that preventive-war motivations are likely to drive adversaries of aspiring nuclear states to attack their nuclear facilities to prevent them from developing nuclear arsenals.[9] According to this logic, the potential cost that new nuclear states pose to their adversaries' security motivates the latter to strike. Biases for offensive doctrines and decisive operations, a "better now than later" rationale, a strict focus on operational goals coupled with a military logic, an incremental focus on war planning, and a neglect of postwar management should, according to proliferation pessimists, make military officers strong advocates of preventive war against aspiring nuclear powers.[10] University of Virginia's Todd Sechser found that states lacking strong civilian control tend, on average, to initiate armed conflicts much more frequently than states with militaries under tight civilian control, and that the military's aggressive proclivity is not subdued by political leadership responsibilities.[11]

In analyzing the tendency of military versus civilian-led governments to consider and authorize preventive strikes against their adversaries' nuclear facilities, Matthew Fuhrmann and Sarah E. Kreps of Texas A&M University and Cornell University, respectively, found that, between 1942 and 2000, preventive attacks were seriously considered on fifty separate occasions by twelve states in eighteen different dyads.[12] Three states in their dataset—Germany during World War II, Iraq under Saddam Hussein, and Iran in the 1980s—were attacked by six different states. Fuhrmann and Kreps concluded that 12 percent of all states that have at least explored nuclear weapons were each attacked multiple times.[13] However, while they concluded that states would attack a proliferator to stop its development of nuclear weapons despite potentially high consequences, states rarely do so.[14] According to their data, almost 90 percent of states that have explored nuclear weapons have not been attacked. This is consistent with other research that suggests that preventive strikes are rare.[15] There are strong reasons for states to consider but not authorize preventive strikes: (1) preventive strikes might encourage states that have nuclear facilities to develop nuclear weapons to deter later strikes; (2) preventive strikes might also increase support for the attacked state and bolster the legitimacy of a nuclear-weapon program among domestic and regional audiences.[16] Moreover, leaders that suffer preventive strikes on their nuclear facilities would presumably aim to speed up their nuclear program and fight *after* they have nuclear weapons. Insofar as military officers and civilian leaders should consider these dynamics, preventive strikes hardly occur and never cause retaliation by the target. Fuhrmann and Kreps' findings confirm these hypotheses.

Fifty separate cases of serious preventive war *considerations* hardly speak to the pessimist hypothesis that expects *attacks*, not considerations: leaders and their associates seriously consider many things. The historical record of preventive attacks shows that

they are very rare. Of the three attacked states, two were in the midst of a wider war caused by geopolitical factors other than the attacked states' nuclear facilities. The Norwegian, UK, US, and Iraqi strikes against German and Iranian nuclear facilities in World War II and the 1980s, respectively, were not exclusively motivated by the existence of nuclear programs but were actions taken as part of the wider war. Absent the war, it is not clear that Germany and Iran would have developed nuclear weapons for others to target. Similarly, the Iranian and US strikes on Iraq's nuclear facilities in 1980 and 1991 were outcomes of the new regime in Tehran, the imminent Iran-Iraq war, and the 1990 Iraqi invasion of Kuwait. The only cases where preventive strikes would likely have not occurred without the targeted nuclear facilities were the 1979 and 1981 Israeli and 1993 and 1998 US and UK strikes against Iraq's nuclear facilities. The Israeli strikes increased regional support for Saddam Hussein and may have exacerbated his drive for an indigenous nuclear deterrent.[17] By the 1990s, the Iraqi nuclear program had stalled.[18] Perhaps more importantly, neither the Israeli nor the US/UK attacks spurred Iraqi retaliation or escalation to conventional or nuclear war, as pessimists would have predicted. Israel's 2007 attack on a Syrian nuclear reactor also fits this pattern. The Stuxnet virus and the Israeli campaign of assassinations against Iranian scientists aimed to weaken regional nuclear programs, but these actions did not erupt into armed conflict, either.[19]

Sagan argued that some evidence from the early Cold War provides concern: "preventive nuclear attacks were clearly imagined, actively planned, and vigorously advocated by senior U.S. military leaders well beyond the initial development and deployment of nuclear weapons by the USSR."[20] However, preventive strikes were ultimately not authorized. Presidents Harry S. Truman and Dwight D. Eisenhower worried that the American public would not approve of preventive strikes and that they would severely complicate US alliances in Europe and Asia and perhaps drag the United States into another world war. US and Soviet preventive motivations for a strike against China in the 1960s were also tempered by concern over undesirable reactions from each other and their allies. Military preferences for preventive strikes may be high, but civilian preferences for restraint are usually stronger. Sagan pointed out that military support for preventive operations during this period remained high and that large Soviet nuclear forces did not undermine this thinking. US intelligence estimates of Soviet nuclear capabilities in 1954 were uncertain, ranging from 188 to 725 nuclear weapons with an estimated 300 Soviet bomber aircraft able to be launched in a first strike or upon warning of a US attack, though only 200 to 250 were likely to hit their targets.[21] This evidence could suggest that military preferences for preventive strikes compete—and lose out—against costly nuclear retaliation. But other evidence cautions against this conclusion. A Joint Chiefs of Staff Advanced Study Group report written at the time noted that the Soviet Union was yet to "achieve a large enough thermo-nuclear capability to be a real menace to the continental US."[22] Indeed, Moscow required intercontinental ballistic missiles (ICBMs) to reliably deliver nuclear weapons to the United States. Premier Nikita Khrushchev admitted to Polish leader Wladislaw Gomulka in 1958 that "five years ago … we could not reach the USA."[23] Later aircraft, the 3M and Tu-95, remained until 1959 the only Soviet means of reaching US territory with nuclear weapons. Sagan's evidence of US preventive-war motivations in the early Cold War occurred at a time when US intelligence suggested that the Soviet Union could hardly threaten the United States with nuclear weapons. It is not surprising that most military talk of a preventive strike against the Soviet Union

ended when the Soviets developed the capability to target the United States with nuclear missiles in 1959.[24]

Sagan argued that while preventive motivations have rarely led to strikes against nuclear facilities in the first seventy years of the nuclear age, "the probability of such attacks will increase in the future since strict centralized civilian control over military organizations is problematic in some new and potential proliferant states."[25] As evidence, Sagan cited Pakistan's 1965 preventive strike against India that was designed to conquer Kashmir before an anticipated Indian military buildup was completed. But this is less a story about an attack on India's nuclear program than an attack on Indian positions in Kashmir: it is likely that the attack would have occurred if India did not have a nuclear-weapon program.[26] Sagan also cited Indian Army General Krishnaswamy Sundarji's preventive war motivation for starting the 1986 Brasstacks crisis.[27] Consistent with proliferation pessimist expectations, Sundarji believed that Pakistani nuclear weapons would seriously threaten Indian security: the Brasstacks exercise was deliberately planned to provoke a Pakistani military response that would provide India with an excuse to destroy its nuclear program. During the crisis, Sundarji unsuccessfully advocated a preventive strike.[28] But consistent with the historical record and the theoretical expectations outlined above, Indian policy during the crisis was limited to the consideration of preventive strikes. Moreover, this occurred at a time when Pakistan was well short of an operational nuclear capability.

Sagan has argued that the dangers caused by preventive-war motivations did not disappear in 1990 with India's and Pakistan's development of nuclear weapons, because future deployment of US national missile defenses would likely cause China to increase the size and readiness of its own missile force, encouraging India to increase its own missile deployments and defense technology, which in turn threatens Pakistan's smaller nuclear arsenal. According to Sagan, this would "inevitably reopen the window of opportunity for preventive war considerations."[29] Pakistani nuclear posture has indeed given a larger role to nuclear weapons.[30] But even if the United States, China, and India increase their missile forces, the logic that has almost always ensured that preventive-war considerations do not come to fruition will likely prevail. Arms races usually do not cause war.[31] The scenario of a general gaining supreme political power and ordering a preventive strike due to pressures created by missile defenses on a "better-now-than-later logic" when the consequences might be the loss of several cities has not occurred. Pakistani fears of attacks on their nuclear arsenal during the 2001–02 South Asian standoff say nothing about whether India was actually planning such attacks.[32] After the December 13, 2001, terrorist attacks, Indian Army General Sundararajan Padmanabhan stated that "if we go to war, jolly good," though whether Prime Minister Atal Bihari Vajpayee seriously considered striking Pakistani nuclear facilities is unclear.

Almost all states do not move beyond *considering* preventive attacks against their adversary's nuclear weapon facilities. The only cases where preventive-war motivations led to strikes are the Israeli, US, and UK attacks against Iraq in 1981, 1993, and 1998, and these strikes did not escalate to war. Proliferation pessimist scholars have not explained why the rise of new nuclear powers might lead not only to preventive-war motivations but also actual strikes. There are strong reasons why few strikes occur and these do not escalate to war. Military biases and preferences for preventive strikes hardly ever become realized. Cases of strikes authorized by *civilian* leaders are rare.

Given the near-absence of preventive strikes, and notwithstanding the rare strikes that nonetheless fail to escalate conflict further, it is clear that the dangers of preventive strikes associated with nuclear proliferation have been exaggerated.

Survivable arsenals: an unspecified problem

Scholars have argued that military biases can lead to nonsurvivable nuclear forces. Sagan argued that these biases can lead to more weapons but not more survivable weapons, resistance to new missions and weapon systems required for survivable second-strike forces, beliefs that survivability measures are unnecessary, poorly designed standard operating procedures, military routines that undermine survivability through revealing otherwise secret information and the location of secret units, and the tendency to learn from these mistakes only after an attack has revealed their vulnerability.[33] This is alleged to be dangerous because it might encourage preventive strikes that could instigate war. But this problem is effectively one of preventive strikes, because arsenals are only nonsurvivable when somebody else is prepared to accept the risks of striking.

The claim that nonsurvivable arsenals are dangerous assumes some objective indicator for what constitutes a survivable nuclear force. In 1958, Cold War nuclear strategist Albert Wohlstetter identified six characteristics, the most important of which are the abilities to survive enemy attacks, make and communicate the decision to retaliate—without requiring early firing and/or heavy decentralization of controls that might leave the weapons susceptible to accidental or unauthorized use—and penetrate active and civil defenses to destroy the enemy target set.[34] Sagan, Kenneth Waltz, and others agree.[35] These are not specific indicators, however, but rather loose criteria that nuclear forces must meet to be survivable. Numeric and geographic specifications of which weapon systems offer survivability irreducibly rest on assumptions about the level of risk that an adversary might be willing to accept in a preventive strike. Analysts can model how many of what types of weapon systems are required to survive an attack of some number of some combination of others, but calculations that neglect the level of risk an attacker is willing to accept have limited utility in estimating arsenal survivability. The more risk an adversary is willing to accept, the greater the threshold for survivable arsenals. While many have noted that the cost of nuclear war should make most adversaries risk-averse, less noted is that potential strikers also have incentives to exaggerate the level of risk that they would be willing to tolerate in destroying their adversary's nuclear arsenal.[36] The target nuclear state's obvious incentives to exaggerate the number, diversity, and robustness of its weapon systems create high uncertainty that any disarming strike would have to overcome.

As Figure 1 shows, the survivable-arsenal problem is essentially a preventive-strike motivation problem. When the target has nuclear facilities but no nuclear weapons, the probability of a preventive strike is greatest but still small. Because nuclear states *could* retaliate against strikes against their nuclear forces with nuclear weapons, the probability of such preemptive strikes approaches zero as the target approaches a nuclear-weapon capability. The appropriate question is not whether a nuclear state has met an analyst's subjective specification for survivability, but whether its adversary has calculated that its arsenal is vulnerable and is prepared to accept the risk of striking. The relevant evidence is how frequently challengers were prepared to accept some subjective level of risk—either to their territory or that of allies—to destroy their adversary's nuclear arsenal. Thus, while

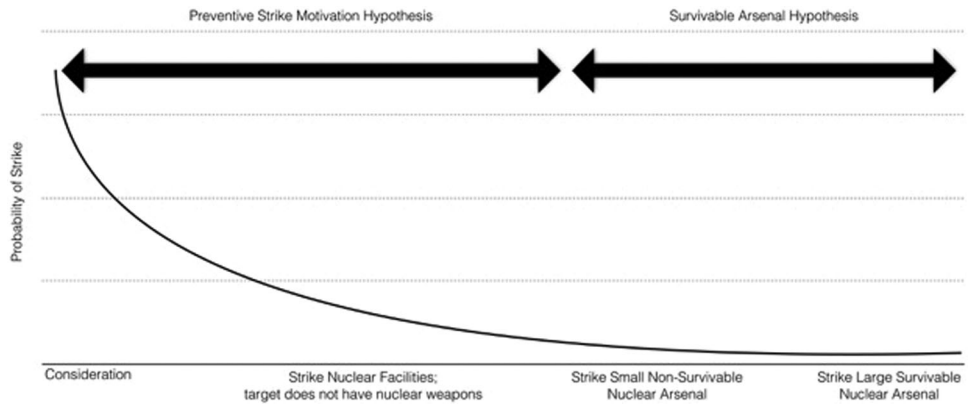

Figure 1. The Survivable Arsenal Problem.

China's inability to target the United States with its small nuclear arsenal during the 1960s and much of the 1970s is usually interpreted as a dangerously nonsurvivable nuclear arsenal, the fact is that concern for third-party related escalation prevented the United States (in 1964) and the Soviet Union (in 1969) from striking when the probability of Chinese nuclear retaliation was lowest.[37]

This is a distinct argument from the familiar Waltzian claim that small nuclear arsenals can deter. A little *uncertainty*, rather than a little nuclear arsenal, goes a long way. Because small nuclear arsenals and uncertainty about their location are highly endogenous, it is easy to ignore the vulnerability of any arsenal if the adversary had high confidence in the location of all weapon systems.[38] Waltz's claim that arsenal size does not matter assumes the existence of some uncertainty about the size and dispersal of that nuclear arsenal. The fundamental uncertainty associated with the location of nuclear weapons and their command-and-control systems reduces most of the dangers of nonsurvivability in large and small arsenals. Attacks against operational nuclear forces have never occurred, and uncertainty must loom large as a reason for this. Sagan has argued that uncertainty does not always prevent challenges because Egypt, Syria, Argentina, and Iraq have all attacked nuclear-armed adversaries.[39] But these attacks were not directed at Israeli and British nuclear arsenals, so the chance of a use-it-or-lose-it retaliatory strike was substantially reduced. Moreover, challenges by weak states against stronger adversaries usually leave the latter short of responses that risk conventional or nuclear escalation.

What is the evidence that nuclear states might not build survivable arsenals susceptible to preventive strikes? Wohlstetter and Sagan argued that basing US Strategic Air Command bombers on the periphery of the Soviet Union in the mid-1950s rendered them highly vulnerable to a surprise Soviet first strike.[40] But how vulnerable the US bomber force was is unclear since any Soviet first strike would have required the Soviets to accept many risks. The US Air Force eventually abandoned the practice, and the Soviet strike never came. Sagan argued that the US Navy's indecision about sponsoring a ballistic-missile program supports this hypothesis.[41] But it is far from clear that a US nuclear force without ballistic missiles could not have survived a Soviet first strike in the early 1950s when the Soviet Union also lacked ICBMs and could not reliably target the United States with nuclear weapons. Moreover, these were concerns when ballistic-

missile technology capable of delivering nuclear payloads was in its infancy. Any resistance to the program disappeared by the second half of the 1950s, and it is extremely unlikely that new nuclear–armed states would doubt the value of delivering nuclear weapons through ballistic missiles.[42]

Sagan pointed out that Soviet standard operating procedures—construction crew routines—revealed the location of Soviet missiles in Cuba.[43] But this did not undermine the invulnerability of Soviet nuclear forces. US generals during the 1962 Cuban Missile Crisis wanted to strike the silos in Cuba but admitted that they could not destroy them all, and this ultimately deterred President John F. Kennedy from authorizing the strike.[44] The secret US penetration of the Soviet Navy's underwater communications system in the early 1970s that identified the timing and locations of Soviet submarine patrols in the Pacific did not fully undermine the survivability of Soviet forces because other nuclear forces were less affected.[45] Similarly, when Pakistan's missile forces produced signatures that revealed their location to Indian intelligence officers, it did not necessarily undermine the survivability of Pakistan's nuclear arsenal.[46] Even though North Korea mimicked Soviet nuclear-waste storage facilities, which allowed US intelligence agencies to identify the covert sites but ultimately not attack, it is unclear whether North Korea will make the same mistake in dispersing its nuclear weapons.[47] The evidence shows that most nuclear states have taken some measures that threaten the survivability of their arsenal, but these have *never* directly caused preventive strikes as pessimists have worried. This is largely explained by uncertainty associated with the number, types, and location of weapon systems. Thus it appears that pessimists have greatly exaggerated the dangers posed by nonsurvivable arsenals.

Nuclear accidents: an uneven distribution

Yale University's Charles Perrow argued that organizations operating through numerous, interrelated, yet unplanned interactions that are not readily comprehensible—"interactive complexity"—and rigid and highly time-dependent production sequences—"tight coupling"—are prone to serious system accidents.[48] Sagan has argued that organizations often add several layers of redundant and possibly error-prone backup systems simply to be seen as "doing something" after accidents occur, or to serve narrow interests of organizational subunits. The politics of blame, organizational culture, and socialization can also reduce trial-and-error learning from accidents.[49] The organizations that manage the command and control of nuclear weapons certainly exhibit these characteristics: medium and large nuclear arsenals and command systems are highly complex by necessity and tightly coupled by design to ensure prompt retaliation under attack. The military organizations that manage them are politicized and exhibit conflicting interests. But the distribution of accidents over time raises questions about whether the accidents are the source of the danger. The most dangerous accidents occur during nuclear crises when leaders of one or both states have authorized coercive diplomacy or nuclear compellence. If coercive diplomacy rather than organizational dynamics lead to crises, it is not clear that the organizational logic outlined by Perrow and Sagan is the catalyst for the danger.

To the extent that the mechanisms identified by Perrow and Sagan lead to accidents, we might expect accidents to have occurred randomly over time. But nuclear accidents are heavily endogenous with nuclear crises, and most nuclear crises do not occur randomly

but when leaders use nuclear weapons as shields to attempt to revise an undesirable status quo. Almost all known accidents that could have led to nuclear war occurred in 1962 and 1973.[50] The claim that organizational biases risk nuclear war suffers from omitted variable bias: other variables seem to cause the nuclear crises and the dangerous effects usually attributed to organizational biases. The danger associated with accidental use of nuclear weapons has less to do with organizational bias and more to do with the forces that could have led to the nuclear crises. Thus, while Sagan showed that many near-accidents occurred during the Cold War and that limited degrees of organizational learning followed, other factors that explain why nuclear crises are rare also function to reduce the number and danger of nuclear accidents. Some close calls in the Cuban Missile Crisis were "regularly scheduled events" that happened to coincide with Soviet moves in Berlin and Cuba, but that is exactly the point: the latter Soviet moves were what rendered the regularly scheduled events dangerous. Even the 1983 Able Archer incident was dangerous because the Soviets, having used a Warsaw Pact training exercise as cover for the 1968 crackdown in Czechoslovakia, incorrectly believed that a NATO training exercise was a prelude to a US attack. It is unclear whether Leonid Brezhnev came close to authorizing nuclear escalation.

Almost all other nuclear accidents did not occur during a nuclear crisis and posed a much smaller danger of nuclear escalation. The 1968 Thule bomber incident,[51] the November 1979 Exercise Tape Incident,[52] the June 1980 Computer Chip Incident,[53] 1980 Damascus incident,[54] 1995 Norwegian weather rocket launch and false Russian missile attack warning, and the 2007 Minot Air Force base accidental transport and refueling of a B-52 bomber with six nuclear weapons aboard, all documented by Sagan, are typical examples of accidents that were dangerous but surely posed less risk of conventional or nuclear war than the nuclear accidents of 1962 and 1973.[55] Little available evidence on South Asian nuclear accidents suggests that they resemble the less-dangerous Cold War cases. The 1988 massive conventional-munitions explosion at a secret ammunition dump near Rawalpindi and the 2001 accidental launch of a short-range missile without its conventional warhead that killed the quality-control officer did not involve nuclear weapons.[56] If these are the worst accidents in South Asia in twenty-five years of nuclear weapons, perhaps the most dangerous nuclear accidents are confined to the Cold War. The risk of danger posed by potential nuclear accidents in South Asia is surely exaggerated.

Sagan has argued that the emergence of additional nuclear states will increase the likelihood of accidents because these states lack the organizational and financial resources to produce adequate safety devices.[57] He argued that the opaque nature of much contemporary proliferation and the concomitant political fallout of nuclear-weapon tests precludes thorough monitoring of safety efforts and ensures the prevalence of military and bureaucratic interests.[58] But there is no evidence that all of this causes accidental nuclear detonations or conflict. Sagan argued that new nuclear states will be accident-prone due to the severity of the tight-coupling problem and particularly if they are in close proximity to their principal adversaries.[59] But this logic did not result in a nuclear accident in either the 1999 Kargil war or the 2001–02 Indo-Pakistani crisis. One can argue that the dangers of inadvertent escalation associated with nuclear powers fighting conventional wars are great.[60] But the only two cases of nuclear states fighting a conventional war—the 1999 Kargil War and 1969 Sino-Soviet Zhenbao clashes—exhibited heavily restrained

conflict limited to small theatres that posed little risk of nuclear accidents. Sagan argued that the risk of accidental nuclear war could be high if a leader of a new nuclear state feared an attack against the central leadership and delegated the authority to use nuclear weapons to lower-level commanders. But the only example of this is Saddam's pre-delegating the use of chemical and biological weapons against Israel if Iraq was attacked with nuclear weapons.[61] It is not clear that Saddam would have maintained such policies if he had developed nuclear weapons. Sagan has also argued that the serious political and social unrest likely in future nuclear states increases the risk of accidental and unauthorized nuclear weapons use.[62] But Jacques E.C. Hymans of University of Southern California has shown that serious political and social unrest decreases the probability that a state will be able to muster a competent and committed group of scientists to develop nuclear weapons in the first place.[63] Moreover, while domestic political unrest can encourage unsafe transportation, exercise, or testing operations and thus compromise safety, it is not clear that this will lead to the accidental detonation of a nuclear weapon or whether this will cause nuclear escalation.[64]

Nuclear weapons as shields: only the inexperienced

S. Paul Kapur of the US Naval Postgraduate School has shown that states that are dissatisfied with their regional environment and militarily unable to effect desired change are most likely to use nuclear weapons as shields behind which to pursue conventional aggression.[65] In Kapur's argument, nuclear-weapon development by a state that is militarily weaker than its principal adversary but which does not have revisionist preferences should not lead to revisionism because there is no underlying strategic prize for the new nuclear state.[66] Likewise, cases of nuclear-weapon development by a revisionist state with conventional superiority would not occur because conventional superiority obviates the need for nuclear proliferation as a way to achieve strategic goals.[67] On the other hand, Kapur pointed out that nuclear proliferation by weaker revisionist states offers a potential means to challenge an undesirable status quo. Before nuclear proliferation, the weaker revisionists' aggression could be either defended against or deterred by its more militarily powerful, nuclear-weapon-equipped adversary through threats of conventional escalation. Such retaliation often incurs high costs on the weaker power, as Pakistan experienced in 1971, when East Pakistan became independent Bangladesh. The weaker revisionist state's development of nuclear weapons, however, constitutes a shield against such escalatory threats. Revisionist nuclear states' strong desire to change the status quo may make them more willing to accept the risk that leaves something to chance.[68] Whereas the conventionally more powerful state may have been prepared to respond to and escalate a weaker adversary's aggression, after the weaker state proliferates, there is no guarantee that such escalation won't cause nuclear escalation. Moreover, weak revisionists may develop nuclear postures that deter nuclear *and* conventional retaliation.[69] The stronger state's status quo preferences and relatively more benign security environment might make it harder to credibly commit to forcefully punish aggression from its nuclear-weapon-equipped weaker revisionist adversary. Leaders in conventionally inferior revisionist nuclear states thus might believe that the bomb would offer them a means to achieve their revisionist designs. We might therefore expect revisionist leaders of new nuclear states to be highly likely to authorize nuclear coercion or conventional aggression.

Of the ten states—including South Africa—that have developed nuclear weapons, four have been dissatisfied with important aspects of their regional environments: the Soviet Union, China, Pakistan, and North Korea.[70] Pakistan's increased assertiveness in Kashmir after developing nuclear weapons in 1990 and Mao's greater risk acceptance on Zhenbao Island after developing nuclear weapons in 1964 are widely acknowledged.[71] As North Korea moves closer to a nuclear capability able to target the US mainland, Pyongyang has moved beyond symbolically provocative actions—such as the 2010 sinking of the South Korean corvette *Cheonan* and shelling of Yeongpyong Island—and focused on ramping up its schedule of missile and nuclear-explosive tests.[72] Less well-known is that post-Khrushchev Soviet foreign policy followed a similar pattern: although the Soviet Union became a nuclear power in 1949, in another sense it became a nuclear power in 1959 when, despite Khrushchev's previous bluster, the USSR finally acquired the capability to reliably target the United States with nuclear weapons.

Since the Soviet Union, unlike the United States, could not deploy its bombers close to its principal adversary's borders, delivering nuclear weapons to US territory required the development of ICBMs. As late as 1955, Khrushchev had no means of using a nuclear device against an American city. The Tu-16 Badger bomber finally made the Soviet nuclear threat credible in Europe in the late 1950s, but these planes were also vulnerable to NATO's antiaircraft defenses.[73] Khrushchev's decision to limit strategic bomber production, coupled with the lack of long-range missiles, meant that the Soviet Union would be overwhelmed by US nuclear forces with no comparable response as late as 1958.[74] The Kremlin approved a plan in March 1955 to deploy R-5M medium-range missiles—the first capable of targeting London and Paris with nuclear weapons—to East Germany. Orthodox histories date the deployment to have occurred in 1956.[75] Recent archival evidence shows that the deployment did not take place until 1958, and the nuclear warheads were not transferred to East Germany until April 1959.[76] The first successful launch of the first Soviet ICBM—the R-7—occurred in July 1959. Khrushchev finally acquired the capability to reliably target the United States with nuclear weapons a decade after Stalin authorized the first Soviet nuclear test.[77] It was at this time that he issued his threats regarding West Berlin, constituting the most dangerous period of the Cold War. The most dangerous nuclear accidents that have been documented occurred during the subsequent Cuban Missile crisis.

Many have argued that Soviet local military superiority in West Berlin hardly rendered the Soviet Union similar to Pakistan or China.[78] The problem with this claim is that it assumes that only the local balance of power influenced Khrushchev's calculations about revising the Berlin status quo. Khrushchev would have correctly considered whether the regional and global balance of military power permitted him to sustain any revisions that his local superiority allowed. Several scholars have thus argued that the "Soviet superiority" thesis is incorrect. An influential study of the military balance in the 1960s concluded: "NATO and the Warsaw Pact were roughly equal in terms of soldiers, guns, vehicles, infantrymen, and the like. In many respects, we were 'superior:' in some respects, they were."[79] Rough equality of forces is different from inferiority, but both are distinct from superiority because neither allows revisions of the status quo to be sustained. Other scholars have addressed earlier and later periods and reached similar conclusions. Cornell University's Matthew Evangelista focused on the 1947–48 period and found that "Soviet troops were not capable of executing the kind of invasion

feared in the West during the late 1940s."[80] Barry Posen of the Massachusetts Institute of Technology and John J. Mearsheimer of the University of Chicago addressed the 1980s and reached similar conclusions. Mearsheimer argued: "the common image of overwhelming [Warsaw] Pact materiel superiority, created by misleading 'bean counts' of unrepresentative classes of equipment, is simply incorrect."[81] Posen concluded that "NATO forces are fully competitive with the Warsaw Pact in Central Europe" and "would probably thwart a conventional attack."[82] The dangers arising from Soviet inexperience with the inability to target its principal adversary with nuclear weapons were similar to the Pakistani and Chinese experiences. Nuclear proliferation increases the onset of interstate conflict through emboldening leaders of weak revisionist new nuclear powers.

But there is a systematic effect of *experience* with nuclear weapons on the conflict propensity of states. The Soviet Union stopped challenging the status quo in Berlin and Cuba after 1963. The number of fatalities from terrorist violence in Kashmir in 2012 was almost that of 1989.[83] Mao never again challenged Soviet forces after the 1969 Zhenbao conflict. Recent quantitative studies have also concluded that experience with nuclear weapons moderates the conflict propensity of new nuclear powers. Most quantitative scholarship concludes that nuclear proliferation does not lead to conventional conflict because quantitative tests showed no relationship between these variables.[84] States that develop nuclear weapons are highly conflict prone, so a high propensity for conflict likely causes nuclear-weapon development and further conflict.[85] But statistical research has ignored the role of experience with nuclear weapons. Temporally disaggregating the effect of nuclear proliferation on state conflict uncovers a robust correlation between nuclear-weapon proliferation, experience, and international dispute behavior.

University of Pennsylvania's Michael Horowitz conducted a statistical analysis and found that the probability of new nuclear states reciprocating disputes quickly increases and then decreases over time.

> The probability that a nuclear state will reciprocate a dispute with a non-nuclear state drops from .53 one year after developing nuclear weapons to .23 in year 56. Two new nuclear powers are 67 percent more likely to reciprocate a dispute than two average non-nuclear states. Two experienced nuclear powers are 65 percent less likely to reciprocate than two average non-nuclear states. The probability of dispute reciprocation between an experienced and new nuclear power is 26 percent greater than two non-nuclear states, and the probability of a very experienced state and a somewhat experienced state reciprocating is 42 percent less than two non-nuclear states.[86]

University of California-San Diego's Erik Gartzke conducted a similar statistical test when the dependent variable was dispute initiation rather than reciprocation and found similarly robust results.[87] Gartzke found that, while the overall effect of nuclear proliferation on conflict propensity is neutral, there is variation in the effect of proliferation over time. Nuclear proliferation influences the timing, rather than the occurrence, of disputes. While new nuclear states are prone to initiate militarized disputes, over time they moderate their policies and become as likely to initiate disputes as they were before nuclear proliferation.[88] These effects wash out in statistical tests that do not control for experience with nuclear weapons. In short, if Iran and North Korea develop nuclear weapons and challenge their regional status quo, the historical record suggests that they will not do so for long. Thus James M. Lindsay and Ray Takeyh of the Council on Foreign Relations recently claimed that a nuclear Iran would be most dangerous "at first, when it would likely be at its

most reckless." But, "like other nuclear aspirants before them, the guardians of the theocracy might discover that nuclear bombs are simply not good for diplomatic leverage or strategic aggrandizement."[89]

Conclusion: proliferation pessimism, Iran, and North Korea

Three of the four mechanisms long alleged to make nuclear proliferation cause interstate conflict find little to no empirical support when the endogeneity, omitted-variable bias, and conceptual-confusion issues addressed above are recognized and applied to the evidence. Preventive-war motivations, nonsurvivable arsenals, and organizational logics that lead to accidents do not cause armed conflict. The only mechanism that has systematically led to conflict is conventional aggression by weak revisionists after nuclear proliferation, but a few years of experience with nuclear weapons moderates the conflict propensity of new nuclear states. By failing to specify how frequently we should observe preventive motivations, their effect on nonsurvivable arsenals, or how organizational logics lead to conflict, accidents, and nuclear war, proliferation pessimist claims are unfalsifiable. Pessimist scholars need to specify how much longer we should observe them *not* leading to conflict before concluding that their threat has been greatly exaggerated.

The undesirability of nuclear use has prevented scholars from coming to terms with what a more careful and systematic reading of the historical record suggests about the relationship between these mechanisms and conflict. Sagan has argued that proliferation fatalism and deterrence optimism reduce incentives to combat proliferation.[90] But these same dynamics have led scholars to vastly exaggerate the number of threats posed by the spread of nuclear weapons. If the greatest danger posed by nuclear proliferation is conventional aggression in the short-term, scholars need to rediscover how deterrence can moderate the high conflict propensity of new nuclear states.[91] Arguments about the frequency of nuclear escalation, however, say nothing about its cost. Isn't the possibility of nuclear escalation on the Korean peninsula, for example, evidence against the arguments made throughout this paper? A few cases of accidental, unintentional, or deliberate nuclear escalation could show that the mechanisms offered by pessimist scholars linking nuclear proliferation and conflict survive the criticisms leveled at them here. A lower bar for the proliferation-pessimist theory to pass might be one case of nuclear escalation. But after seventy years, nuclear weapons have not once led to conflict through the mechanisms addressed here.

This is not the place for a lengthier treatment of how the United States and its allies should deal with the challenges posed by a North Korean (or possible Iranian) nuclear bomb. But the historical record suggests that Israeli, South Korean, and others' preventive motivations to strike will not lead to military action, and that any strike would likely not escalate to conflict unless the United States or its allies decide to topple the regimes in Tehran and Pyongyang. The nonsurvivability of an Iranian or North Korean arsenal will not tempt others to strike. The arguments made here have contrasting findings for preventive-strike considerations. On the one hand, strikes are less costly than many believe because they rarely cause escalation. On the other hand, strikes are less necessary than many believe because the costs of nuclear proliferation are much lower than usually assumed. Nuclear accidents may occur, but these will likely only cause conventional or nuclear escalation if Tehran or Pyongyang have already attempted to revise their status

quo. The historical record also suggests that a few years of experience with the bomb will teach Tehran and Pyongyang the limits of nuclear coercion and that any conflict will stop short of nuclear escalation. Future research should further refine proliferation pessimism and integrate it with optimist perspectives through addressing what causes new nuclear states to moderate their aggression and what policies by the United States and its allies might cause this. An optimistic pessimism toward the spread of nuclear weapons can better come to terms with how and when they lead to interstate conflict and form the basis for better policies to reduce the dangers.

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Notes

1. For arguments that nuclear proliferation reduces state conflict, see Kenneth N. Waltz, "More May Be Better," in Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: An Enduring Debate* (New York: Norton, 2013) pp. 3–40; John J. Mearsheimer, "The Case for a Ukrainian Nuclear Deterrent," *Foreign Affairs* 72 (Summer 1993), pp. 50–66; John Lewis Gaddis, "The Long Peace," *International Security* 10 (Spring 1986), pp. 99–142; Bruce Bueno de Mesquita and William H. Riker, "An Assessment of the Merits of Selective Nuclear Proliferation," *Journal of Conflict Resolution* 26 (June 1982), pp. 283–306; David J. Karl, "Proliferation Pessimism and Emerging Nuclear Powers," *International Security* 21, (Winter 1996–97), pp. 87–119; Jordan Seng, "Less is More: Command and Control Advantages of Minor Nuclear States," *Security Studies* 6 (Summer 1997), pp. 50–92; and Devin T. Hagerty, *The Consequences of Nuclear Proliferation: Lessons from South Asia* (Cambridge, MA: The MIT Press, 1998).
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"Neooptimists and the Enduring Problem of Nuclear Proliferation," *Security Studies* 6 (Summer 1997), pp. 126–36; S. Paul Kapur, "Revisionist Ambitions, Capabilities, and Nuclear Instability: Why Nuclear South Asia is Not Like Cold War Europe," in Scott D. Sagan (ed.), *Inside Nuclear South Asia* (Stanford: Stanford University Press, 2009) pp. 184–218. I do not address the threat posed by non-state group development, acquisition, and use of nuclear weapons, but others have argued that this threat is exaggerated. See Keir A. Leiber and Daryl Press, "Why States Won't Give Nuclear Weapons to Terrorists," *International Security* 38 (Summer 2013), pp. 80–104 and John Mueller, *Atomic Obsession: Nuclear Alarmism from Hiroshima to Al Qaeda* (New York: Oxford University Press, 2010).

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20. Sagan, *Spread of Nuclear Weapons,* pp. 51–54.
21. Ibid, p. 54, fn. 34.
22. Ibid, p. 52, fn. 29.
23. Douglas Selvage, "Khrushchev's November 1958 Berlin Ultimatum: New Evidence from the Polish Archives," CWIHP *Bulletin* 11, 1998, pp. 200–203.

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41. Sagan, *Spread of Nuclear Weapons*, pp. 61–62.
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43. Sagan, *Spread of Nuclear Weapons,* p. 62.
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80. Matthew Evangelista, "Stalin's Postwar Army Reappraised," *International Security* 7 (Winter 1982–83), pp. 110–138, 111. He elaborates that (p. 119) when one considers that "Soviet divisional manpower has historically numbered 50 to 60 percent of Western divisional manpower, and that Soviet divisions have far fewer support troops, the picture looks different … an image of rough parity emerges."
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83. Institute for Conflict Management, South Asian Terrorism Portal, <http://www.satp.org/satporgtp/countries/india/states/jandk/data_sheets/annual_casualties.htm>.
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