

# ARMAGEDDON: AN ANALYSIS OF NUCLEAR BRINKMANSHIP AS A DIPLOMATIC TOOL

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## Abstract

*Nuclear brinkmanship has been a central aspect of diplomacy for the last 70 years. From the standoffs between the United States and Soviet Union during the Cold War to the modern-day tensions between India and Pakistan, brinkmanship has been at the center of the highest-profile crises of the modern age. The inherent risks associated with brinkmanship give extraordinary weight to the subject, and certainly its effectiveness as a diplomatic tool merits study. This study will utilize both foundational and contemporary research in the field of nuclear crises to evaluate nuclear brinkmanship as a tool of negotiation. Using quantitative empirical data and qualitative analysis, this study will seek to establish whether brinkmanship is a useful tool of diplomacy or an unnecessary risk. Considering the research available, this study determines that brinkmanship is generally unadvisable but that it may be an effective tool in some cases.*

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## Introduction

Since the bombings of Hiroshima and Nagasaki at the end of the Second World War, nuclear weapons have primarily been used not as weapons of war but as leverage in high-level diplomacy. The Cold War period was marked by fluctuating tensions between the United States and the Union of Soviet Socialist Republics (USSR), although it never escalated into combat, proxy wars notwithstanding. This was in large part due to the principle of Mutually Assured Destruction (MAD) wherein both sides knew that a nuclear exchange would likely result in the end of all life on earth. While a decidedly morbid state of affairs, the threat of MAD maintained a relative peace during the period. Nuclear deterrence, rather than war, had become the primary method of confrontation between powerful nations with conflicting interests (Kroenig, 2013).

In the post-Soviet world, the use of nuclear weapons as a negotiating tool has become significantly more complicated. Nine countries are known to have nuclear weapons: the United States, Russia, the United Kingdom, France, China, India, Pakistan, Israel, and North Korea. North Korea's possession of nuclear weapons, combined with its desperate situation, makes it a volatile nuclear power. India and Pakistan are in a perpetual standoff over disputed regions such as Kashmir. With the chronic instability of the Pakistani state and the rise of the Hindu nationalist BJP party in India, the situation seems more tenuous by the day. Israel likely owes its existence to its nuclear arsenal, which has dissuaded neighboring Muslim states from attempting to conquer the small nation. However, the increasing radicalization of the Middle East casts into doubt the extent to which nuclear weapons will deter future terrorists following radical religious ideologies. As always, Russia perpetually antagonizes the United States and its NATO allies, two of whom have nuclear arsenals of their own (France and the UK). Finally, there is the possibility that terrorists could gain control of nuclear weapons for their own purposes, a concern exacerbated by Iran, a nation that has sponsored ideologically-aligned terrorists in the past and has also endeavored to develop their own nuclear program.

In this state of affairs, nuclear brinkmanship remains a potent, though extreme, diplomatic tool. This study seeks to more precisely define nuclear brinkmanship before exploring its utility as a diplomatic instrument. The question this study seeks to answer is whether a greater willingness to engage in and escalate nuclear crises is an effective means by which to accomplish national objectives. To analyze this question, this study examines models and data analysis by the foremost experts in the field as well as targeted studies of specific instances of brinkmanship or crisis-prone situations. In all, there are five possible answers to the question: nuclear brinkmanship is almost always ineffective, mostly ineffective, mostly effective, almost always effective, or there is no clear conclusion. The hypothesis of this study

is that nuclear brinkmanship is mostly effective in that it usually accomplishes the objectives of the side that is more willing to initiate or escalate a brinkmanship situation.

## Literature Review

One of the foremost scholars of modern quantitative brinkmanship analysis is Robert Powell. He has written a number of books including the foundational work, *Crisis Bargaining, Escalation, and MAD* (1987). In this book, Powell established key definitions, variables, and models for brinkmanship game theory. He also defined the possible outcomes that could occur depending on the actions of each side of a nuclear crisis. In 1988, Powell authored *Nuclear Brinkmanship with Two-Sided Incomplete Information* (1988), which further established the fundamental model for the formal study of nuclear crises and brinkmanship and focused on the effects of differences in resolve, values, and information. Powell (2003) later considered how nuclear proliferation and nuclear missile defense systems affected deterrence and a country's willingness to use brinkmanship. These variables helped explain the differences between the nuclear crises between the United States and the Soviet Union as opposed to crises between Pakistan and India.

Powell also considered the doctrine of retaliation, which was sometimes seen as an alternative tactic to brinkmanship, although it has historically played out in much the same way. Powell (1989) found that limited retaliation is a poor doctrine when dealing with larger nuclear powers but may be viable if conducted correctly against lesser nuclear powers. However, if conducted incorrectly, it increases the chance of massive nuclear exchange.

Fearon (1994) established additional variables for consideration in quantitative nuclear crisis analyses. Fearon modeled the effects that "audience costs," or public reactions, to crises have on political leaders and their decision-making, finding that more democratic nations have higher audience costs as their leaders are more accountable to the populace. This reduces the amount of options that these leaders have in crisis situations, but it also lends additional credibility to these leaders when they threaten to exercise one or more of their remaining options. On the other hand, the threats of autocratic leaders are diluted, but they retain a plethora of options in a crisis due to reduced reliance on domestic approval.

In *Nuclear Superiority and the Balance of Resolve: Explaining Nuclear Crisis Outcomes* (2013), Matthew Kroenig built upon Powell's work and provided a comprehensive empirical examination of nuclear crises and their outcomes. Specifically, Kroenig examined 20 nuclear crises from their origin to their resolution from 1950 to 2001. Most previous scholarship on nuclear crises made the erroneous assumption that nuclear superiority is ultimately irrelevant because both parties

were assumed to have second-strike capabilities. Kroenig corrected this oversight. Most significantly, Kroenig studied the outcomes of crises themselves quantitatively. Using Powell's abstract models, consulting other researchers' studies of specific incidents, and examining a broad data set of nuclear crises, Kroenig was able to effectively establish trends in how nuclear crises begin, unfold, and resolve.

Additionally, Rauchhaus (2009) did a preliminary study on nuclear asymmetry. Although the principal purpose of Rauchhaus' study was to evaluate whether or not nuclear weapons are a cause of peace, Rauchhaus also found that nuclear asymmetry correlates to a willingness to engage in crises and open conventional conflicts, while nuclear symmetry reduces the likelihood of engaging in conventional conflict and reduces the overall intensity of crises.

Several authors have looked at specific case studies in nuclear brinkmanship. Kim (1995) looked at the North Korean crisis in 1994 and showed how possessing nuclear weapons significantly impacts a nation's ability to negotiate. Kim concluded that even a nation which is vastly inferior in both conventional and nuclear capability can make up for this capability deficit with resolve. Kapur (2008) examined the effect of India and Pakistan's nuclear arsenals on their interstate conflict and found that nuclear weapons have had a destabilizing effect on the region. He found that Pakistan has been willing to act recklessly because it can neutralize India's conventional advantages by utilizing the Pakistani nuclear arsenal. However, this increases escalation, as Pakistan cannot escalate conventionally due to its inferiority. Kapur concluded that a nation committed to challenging a status quo it finds objectionable will be much more willing to do so openly if it has a nuclear arsenal backing its interests.

Trachtenberg (1985) reached a different conclusion from Powell and Kroenig on the Cuban Missile Crisis. Specifically, Trachtenberg concluded that the Cuban Missile Crisis was not a contest of resolve since there was no clear winner of the contest and neither side desired to escalate the crisis to show their resolve.

## **Data and Methods**

Before analyzing it as a diplomatic tool, it is important to understand the concept of nuclear brinkmanship. Brinkmanship is often likened to a game of "chicken" in which two nuclear powers continuously escalate the threat until the one with greater resolve wins. While this certainly makes the concept easy to explain, it is excessively simplistic and a more thorough understanding is necessary. Brinkmanship occurs when one nuclear power considers the status quo to be so unacceptable that it must be challenged. Only if another nuclear power defends this status quo does a crisis arise and brinkmanship ensue. A crisis occurs whether or not either adversary threatens to use a nuclear strike, since the existence of nuclear

weapons and the possibility of their use alone is enough to have a decisive effect on negotiations (Kroenig, 2013).

With this understanding, it is also necessary to define “crisis” due to its central importance to this study. Matthew Kroenig used the definition from the International Crisis Behavior Project that a crisis is an “interstate dispute that threatens at least one state’s values, has a heightened probability of military escalation, and has a finite time frame for resolution” (2013, p. 152). While this definition is sufficient for the purposes of this analysis, to avoid confusion regarding terminology, this study will replace “values” with “interests,” since values could be taken to mean anything from abstract national principles of freedom, order, honor, et cetera, or could mean something the state values such as a certain piece of territory or another asset.

Powell and Kroenig have explained the dynamics of brinkmanship and variables which affect how brinkmanship plays out. Brinkmanship is best examined as a sequential crisis, with each sequence defined as a crisis dyad or dyad crisis. A dyad occurs when one of two nations, engaged in a crisis, directs a hostile action at the other. With each successive dyad, an entirely new set of variables may arise, and thus international crises and their central variables can only be reliably measured at the dyadic level (Kroenig, 2013; Powell, 1987, 1988). At each dyad a different status quo is being negotiated between the two powers, there are various levels of misperception, and there are various levels of resolve on each side depending on the desirability of the status quo being considered. There are four ways a crisis can resolve for a nation: win, status quo, lose, and disaster. Winning broadly means gaining a new, more favorable status quo, status quo means the conflict resolves without change (a de facto defeat for the original challenger), defeat is when the new status quo is less desirable, and disaster is an accidental nuclear exchange (Kroenig, 2013). The likelihood of disaster increases at various rates with each passing dyad depending on the actions of the two parties in a conflict.

## **Research and Analysis**

### *Brinkmanship as Differences in Resolve*

The fundamental difference between one’s resolve and misperception of the adversary’s resolve is the driving factor in any escalation of brinkmanship, but by its very nature brinkmanship will progressively threaten more of the status quo (Powell, 1987, 1988). No rational actor can credibly threaten nuclear annihilation since this would compromise that actor’s own existence. Thus, the risk that nations take in the context of brinkmanship is that inadvertent escalation or accidents could lead to nuclear war, not intentional action (Kroenig, 2013). This risk is compounded by the incomplete information that both sides possess about the other’s capabilities, intentions, and resolve (Powell, 1987). Thus, a crisis is resolved one of three ways: by

one of the two sides estimating that the risk of disaster is too great and capitulating while the other stands firm, by both sides estimating that the risk is too great, resulting in compromise, or by both sides standing firm to the point of accidental nuclear exchange and disaster (Powell, 1987).

Consider, for example, the 1994 crisis when North Korea, supported by China, announced its intentions to withdraw from the Treaty on the Non-Proliferation of Nuclear Weapons (Kim, 1995). North Korea used its newfound nuclear status to negotiate in a greatly outsized manner compared to its adversary, the United States. By the end of the crisis, North Korea had accomplished a greatly unequal bargain in which North Korea would halt its more blatant nuclear programs, remain a signatory of the Non-Proliferation Treaty, submit to UN inspections, and meet other light requirements. In exchange, the United States would finance and supply two light-water reactors, deliver oil to the North Koreans in the amount of 500,000 tons annually during a set period, reduce trade barriers, establish diplomatic relations, and provide a formal assurance that the United States would not use nuclear weapons against North Korea without prior nuclear provocation. Essentially, North Korea exchanged “Washington’s maximal *quids* for Pyongyang’s minimal *quo*” (Kim, 1995, p. 20).

This conclusion was only achievable through a disparity in resolve. North Korea was conventionally much weaker than the United States, and its nuclear program was still in its infancy. Indeed, some nations disputed that North Korea even had nuclear weapons as they did not conduct widely-known tests until 2006. However, it is extremely likely that North Korea had at least rudimentary nuclear weapons as early as 1992, and possibly earlier (Kim, 1995). In this crisis, North Korea accurately estimated the United States’ resolve in the matter and perceived the United States’ unwillingness to risk nuclear annihilation which may have been precipitated by a strike on North Korea and a total nuclear response by the Chinese. North Korea, on the other hand, had very little to lose and thus had great resolve. Any sort of response from the United States would have at the very least destabilized the regime’s power, and thus it was willing to go to extreme lengths to protect that power (Kim, 1995). Because of North Korea’s greater resolve, it was willing to enter into and escalate the crisis to a successful conclusion. As the conflict escalated, so too did the risk of accidental nuclear exchange, and the lesser resolve of the United States resulted in lopsided concessions to the North Koreans.

Some scholars, however, disagree with the fundamental characterization of brinkmanship as a competition of resolve. Trachtenberg wrote that, “in practice, the more subtle official theories about nuclear war-fighting did not have much of an effect on American policy” during the Cuban Missile Crisis (1985, p. 162-163). However, Trachtenberg’s objection was based on his assertion that “the balance [of resolve] was unequal, but not so unequal that it makes sense to view the crisis

as a simple ‘contest’ with a clear victor” (1985, p. 162). He backed his claim with historical documents showing that “no one wanted to keep upping the ante, to keep outbidding the Soviets in ‘resolve,’ as the way of triumphing in the confrontation” (Trachtenberg, 1985, p. 162). While the historical evidence that Trachtenberg examined certainly backs this claim, his claim and his conclusion were inadequately linked. A contest of resolve, as established by Powell, Kroenig, and others, does not need explicit escalation or “outbidding” of any sort. Powell in particular pointed out that, while brinkmanship is indeed sequential, simply remaining at a certain level of escalation from one stage of a crisis to the next increases tension and the possibility of accidental nuclear exchange (Powell, 1987, 1988). The amount of resolve needed before backing down does not stay the same if there is no explicit escalation but rather increases steadily as the crisis continues regardless of any further escalation. Of course, escalation would increase the resolve needed to continue to a greater degree than this gradual increase, but it is not strictly necessary. Furthermore, both Powell and Kroenig established that a contest of resolve need not result in a “clear victor,” as Trachtenberg asserted. An entire spectrum of outcomes exist, ranging from total capitulation or compromise to global annihilation which may result from a contest of resolve (Kroenig, 2013; Powell, 1987, 1988).

Powell’s model, the standard for brinkmanship theory, provided several conclusions. First, crises involving a significant conflict of state interests are less stable and more prone to escalation, while crises involving more peripheral issues are more stable. Second, there is no guarantee that the state with the greatest resolve will win the crisis or that one side is less likely to escalate because its adversary’s resolve is greater. In his model, Powell showed that less resolute nations are less likely to challenge the status quo, but if they do challenge it, they are more likely to meet resistance with escalation (Powell, 1987, 1988). While no immediate motives can be drawn from Powell’s model, it is plausible that an irresolute nation finding itself in an unpleasant bout of brinkmanship over a peripheral issue may be more prone to attempting to bluff its way out of the situation in order to resolve it quickly. Third, describing brinkmanship solely as a contest of true resolve is misleading and may “obscure as much as it clarifies” (Powell, 1988, p. 171). States with lower resolve may win the crisis due to the misperception of resolve. What matters is not how resolute a nation is but how resolute it appears to its opponent. Fourth, misperception is fundamental to any study of brinkmanship. If misperception could be eliminated, all parties would have perfect knowledge of each other’s resolve and capabilities, and as a result no crises would occur. Fifth, while a nation with a high stake in the status quo might seem less likely to challenge it than one with a lower stake, that is not necessarily the case. A challenger may use its greater stake in the status quo to give a defender the impression that it has greater resolve. If its bluff is called, however, such a challenger is more likely to capitulate (Powell, 1988). Finally, challengers are more

likely to be irresolute than resolute and generally are unlikely to challenge the status quo if they are resolute. Thus, crises that do occur are more likely to be severe than not (Powell, 1988).

### *Brinkmanship and Limited Retaliation*

The doctrine of limited retaliation is another factor that must be taken into account when considering brinkmanship. The doctrine states that, if a nation threatens limited nuclear action, such a threat would actually be credible since it does not necessitate total annihilation. If a threat is ignored, theoretically a nation could launch a limited strike with some hope that the response would not be a massive nuclear strike (Powell, 1989). Limited strike threats have to satisfy two criteria. First, they must impose a high enough cost to encourage the adversary to back down. Second, they must impose a low enough cost that, if the strike were actually carried out, the adversary would retain something it is unwilling to lose and thus would not risk total annihilation (Powell, 1989).

Limited retaliation as a doctrine originated as an attempt to solve a credibility problem in the doctrine of massive retaliation and second-strike capabilities (Powell, 1989). Massive retaliation required that nuclear powers protect their entire spectrum of interests, from the most periphery to the most vital, by threatening total nuclear attack in response to a challenge to those interests. However, this doctrine was deeply flawed as it was not credible that a nation would risk nuclear annihilation over peripheral interests (Powell, 1989). As an alternative, states began to practice brinkmanship and the principle of limited retaliation.

Nuclear crisis scholars rightly identify key flaws in the strategy of limited retaliation. If each state in a crisis were to destroy one city or other significant target at a time, the end result may very well be the same as a massive nuclear launch (Powell, 1989). Indeed, limited retaliation may make this result more palpable, as it is a steady escalation of destruction rather than an “all or nothing” scenario. Limited retaliation raises the risk of accidental massive nuclear exchange, and thus Powell modeled limited retaliation as a game of sequential bargaining in the same manner as his previous brinkmanship models (1989). Powell’s analysis found that the use of limited retaliation as a form of brinkmanship is only effective against a defender with limited options for retaliation. States become less likely to escalate the longer and more extreme a crisis becomes.

Powell’s most significant new finding, however, was how counterforce strategies play into brinkmanship. Counterforce strategies are where one nation targets the offensive capabilities of another nation with nuclear strikes in order to reduce that nation’s ability to launch retaliatory strikes. While these options are incapable of stopping major nuclear powers from inflicting retaliatory damage, they may be successful when dealing with less capable nuclear powers. Powell’s model

showed that a large reduction in a nation's retaliatory capabilities due to counterforce strikes makes the probability of nuclear exchange smaller. However, smaller and less effective counterforce strikes increase the possibility of nuclear exchange (Powell, 1989). A nation will likely use its retaliatory capabilities rather than wait for them to be destroyed if they are being targeted, and less effective counterforce strikes will leave enough capabilities in place to make this retaliation significant.

#### *Additional Factors that Influence a Nation's Resolve*

Powell also examined the effects that a missile defense system has on brinkmanship, specifically in the context of the United States. The findings of this study are significant in that they not only track the probability of a nuclear exchange but also track the likelihood that the United States would be struck by a nuclear weapon. Powell (2003) found that nuclear missile defense systems proportionally increase the chances of being struck by a nuclear missile by increasing the chances of a massive nuclear exchange, at least until the effectiveness of the missile defense system nears one hundred percent. Powell's study concluded that missile defenses create higher resolve within the United States due to the perception of less risk. This increased resolve means that the United States is more willing to initiate and escalate crises the more effective its defense system is, which in turn increases the likelihood that the United States will experience brinkmanship that spirals out of control (Powell, 2003). While the United States would be more likely to achieve its ends due to its increased willingness to escalate crises, the tradeoff is a greatly increased likelihood of a massive nuclear exchange. Powell's research then supports the conclusion that increased willingness to engage in brinkmanship and escalate brinkmanship situations correlates to an increase in the chances of success, with the caveat that this increased escalation is dangerous when crises are entered into with higher frequency.

Additional work by James Fearon established a relationship between how democratic a government is and its levels of resolve. Fearon operated under the assumption that crises are "public events carried out in front of domestic political audiences," similar to the Cuban Missile Crisis (1994, p. 577). This is an important caveat since the variable relationships Fearon established were then linked to this assumption, but models may incorporate Fearon's variables while adequately controlling for non-public confrontations as well (Fearon, 1994; Kroenig, 2013). Fearon justified this assumption on the grounds that leaders of nations in a nuclear crisis have a clear, private picture of their own resolve. However, they also have a strong incentive to misrepresent their level of resolve in order to influence the resolution of the crisis in their favor. According to Fearon, the only way to accomplish this misdirection is by "going public" with threats, mobilization, and other actions which "focus the attention of relevant political audiences and create

costs that leaders would suffer if they backed down” (1994, p. 586). Fearon found that domestic audiences historically punish leaders more for escalating and then capitulating as opposed to not escalating in the first place.

The variable representing this domestic backlash, or “audience cost,” directly influences the resolve of a particular nation’s leaders in a nuclear crisis situation. Democratic states have a more powerful domestic audience than more autocratic states, and thus the leaders of democratic states have more to lose from audience cost than autocratic leaders. Therefore, democratic states require a lower level of escalation to broadcast their intentions and by extension increase their resolve (Fearon, 1994). While democracy limits a leader’s options, it lends additional credibility to that leader’s statements and actions, potentially exposing a resolve imbalance that decides the crisis. Autocratic leaders, on the other hand, need not fear the reaction of the public as much and have many more options available to them. This has the effect of diluting their credibility as they often have many more alternative actions to the ones they threaten (Fearon, 1994).

#### *Quantitative Analysis of Nuclear Asymmetry*

As Kroenig pointed out in his 2013 study, most research on the subject of brinkmanship is “dominated by formal theoretical models and qualitative studies of a few high-profile cases,” and thus his work provides novel and crucial quantitative research for this study’s analysis of the effectiveness of brinkmanship in achieving desired outcomes (p. 143). In his research, Kroenig modified Powell’s brinkmanship model and Fearon’s political variables to include strategic nuclear dynamics. Prior research that had been conducted on nuclear asymmetry dealt with it as a periphery issue. The best example is probably Robert Rauchhaus’ study of the nuclear peace hypothesis. While Rauchhaus was primarily concerned with questions beyond the scope of this study’s hypothesis, his work produced some helpful conclusions which were explored in greater detail by Kroenig. Rauchhaus established that symmetrical nuclear powers are less likely to enter into open conflict with one another but are also more likely to enter nuclear crises at lower levels. This is likely due to their reluctance to use conventional forces, whereas non-nuclear or asymmetric nuclear powers are more willing to use conventional forces to deal with low-level crises before escalating to the nuclear level. This was confirmed by Rauchhaus when he established that nuclear asymmetry correlates to a higher chance of “crises, uses of force, fatalities, and war” (Rauchhaus, 2009, p. 260). Nuclear weapons do not affect how frequently conflicts occur between nations, but they do affect the nature of those conflicts. Symmetric nuclear powers more easily resort to brinkmanship rather than conventional violence but generally keep the intensity of crises as low as possible due to the principle of mutually assured destruction. Asymmetric nuclear powers are more willing to ignore brinkmanship and engage in conventional conflict

but are also more willing to engage in brinkmanship crises in general (Rauchhaus, 2009).

Formal models of brinkmanship prior to Kroenig's study assumed that all parties have secure second-strike capabilities and thus the strategic balance is irrelevant, but many nuclear states do not have such capabilities (Kroenig, 2013). To account for this balance and its significance in brinkmanship, Kroenig drew on two facts established in previous scholarship. First, not all nuclear wars are equally devastating. Kroenig (2013) cited the testimony of former Secretary of the Air Force Harold Brown, who stated that

even 25 percent casualties [on the Soviet side] might not be enough for deterrence if US casualties were disproportionately higher – if the Soviets thought they would be able to recover in some period of time while the US would take three or four times as long, or would never recover, then the Soviets might not be deterred. (p. 149)

If the stakes are high enough, there is an amount of nuclear devastation that one or both sides of a crisis may deem acceptable. Since states do not threaten nuclear war in instances of brinkmanship but rather the risk of accidental nuclear war, a nation which deems nuclear war acceptable will certainly see less risk in accidental nuclear war. It would be preferable to accomplish the state's objectives without nuclear catastrophe, but the catastrophe itself is not an intolerable conclusion to the crisis.

The second factor is that nuclear superiority proportionally reduces the costs of a nuclear war (Kroenig, 2013). Using nuclear weapons in counterforce strikes to destroy the nuclear weapons or delivery systems of an opponent limits the damage an opponent can do in a nuclear exchange. States which have nuclear superiority have more firepower at their disposal and thus greater ability to target the nuclear capabilities of their opponent. States without nuclear superiority may be forced to choose between targeting the nuclear capabilities of an opponent or other targets such as population centers, in essence choosing between causing damage to one's opponent and reducing the damage one's opponent can do to oneself.

There is strong evidence that the question of nuclear superiority influenced significant historical brinkmanship events. During the Cuban Missile Crisis, US officials including the Chairman of the Joint Chiefs and the Secretary of State used the United States' nuclear superiority as a reason to not back down, while the Soviet Deputy Minister of Foreign Affairs alluded that the United States would not be able to repeat the incident once the Soviets achieved parity (Kroenig, 2013). There is similar evidence pertaining to the 1999 Kargil Crisis between India and Pakistan,

where India's nuclear superiority and its effect on the outcome was likely significant. As former Indian Defense Minister George Fernandes noted, in the event of a nuclear exchange, India "may have lost part of [its] population," but "Pakistan may have been completely wiped out" (Kroenig, 2013, p. 151).

This effect does not deter inferior states from challenging the status quo, and indeed conventionally inferior states will seek to gain nuclear weapons as a means to engage in crises on the nuclear level. As seen in the earlier example of North Korea in 1994, and in over a decade of Indo-Pakistani brinkmanship, an inferior power asserted itself against a superior power despite its inferiority. In North Korea's case it succeeded, but Pakistan has not met with such success (Kapur, 2008; Kim, 1995). Kapur found that small nations in opposition to nations with nuclear superiority seek to become dangerous and destabilize the regions in which they reside. Despite how unlikely it is that Pakistan will defeat India in an instance of brinkmanship, Pakistan is willing and eager to enter brinkmanship situations. This is not because it seeks to win a crisis in the traditional sense, but rather because it seeks to destabilize the region, extend its influence, and undermine the status quo (Kapur, 2008). A nuclear Iran would likely take a similar stance, using its nuclear arsenal to shield itself from conventional reprisal while seeking to destabilize the region. It is likely that inferior actors who are aware of their inferiority do not enter into nuclear crises with the intention of winning them but rather with the intention of creating general destabilization (Kapur, 2008). While Kroenig did not take the possibility of an indirect and non-explicit set of objectives into account and no quantitative study on this possibility has been conducted, it may be an important factor to consider in post-Soviet brinkmanship situations.

Kroenig's study of nuclear crises created an original data set from the International Crisis Behavior Project's list of crises. This data set yielded 20 nuclear crises from 1945 to 2001: Korean War (1950), Suez Crisis (1956), Berlin Deadline (1958), Berlin Wall Crisis (1961), Cuban Missile Crisis (1962), Congo Crisis (1964), Six-Day War (1967), Sino-Soviet Border War (1969), War of Attrition (1970), Cienfuegos Submarine Base Crisis (1970), Yom Kippur War (1973), War in Angola (1975), Afghanistan Invasion (1979), Able Archer (1983), Nicaragua/MIG-21S (1984), Kashmir (1990), Taiwan Strait Crisis (1995), India/Pakistan Nuclear Tests (1998), Kargil Crisis (1999), and India Parliament Attack (2001) (Kroenig, 2013).

Kroenig divided victory and defeat in binary fashion, with victory being a state achieving its basic goals, like the United States in the Cuban Missile Crisis, and defeat being a failure to achieve those goals due to compromise, stalemate, or clear defeat. Within the twenty crises, Kroenig identified 52 crisis dyads. When cross tabulating for nuclear superiority and crisis outcomes, the data shown in Table 1 is created.

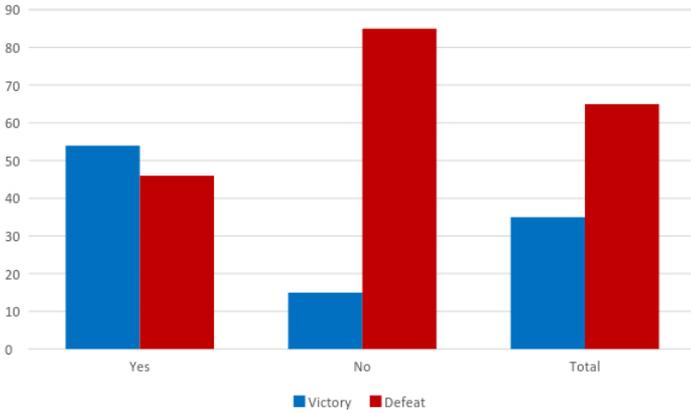


Table 1: Nuclear Crisis Dyad Outcomes. Superiority (Yes or No) vs. Percentage Outcome (Victory or Defeat).

Of the 52 crisis dyads, 18 (35%) resulted in victory while 34 (65%) resulted in defeat. In each dyad, there was one side with nuclear superiority and one side with nuclear inferiority, resulting in 26 crisis dyads for superior and inferior sides of the various crises (Kroenig, 2013). When a nation had nuclear superiority, it won 14 (54%) and lost 12 (46%) of the 26 dyads. When a nation had nuclear inferiority, it won 4 (15%) and lost 22 (85%) of the 26 dyads. When examining crises as a whole, the superior power has the upper hand in victories, while the inferior power’s share of victorious dyads is even less than the amount of stalemate dyads (Table 2). Finally, the overall total of victory and defeat rates comparing superior and inferior powers shows a clear advantage for the superior power (Table 3).

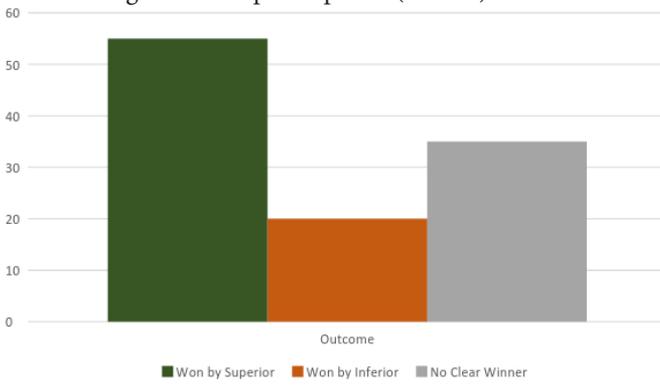


Table 2: Outcome by Crisis. Victor (Superior, Inferior, or None) vs. Percentage of Victories.

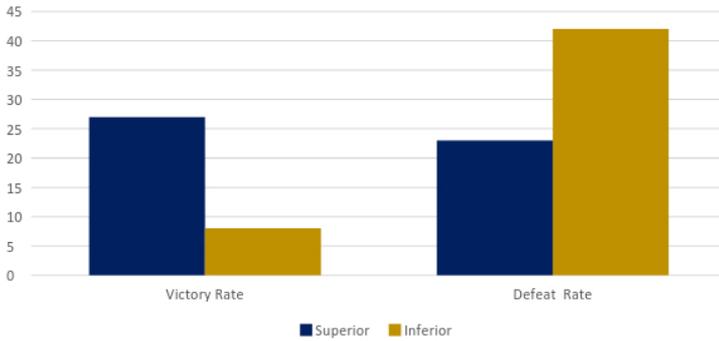


Table 3: Dyadic Victory and Defeat Rates Overall. Victory or Defeat Rate vs. Percentage of Dyads.

Out of the overall 52 dyads, nations with nuclear superiority won 27 percent and lost 23 percent of the dyads, and nations with nuclear inferiority won 8 percent of the dyads and lost 42 percent. This means that strategically superior nations achieve victory at a rate 19 percent greater than inferior nations across all dyads.

Two conclusions can be drawn from this data. First, nuclear brinkmanship has a low success rate of 35 percent. Inferior nuclear powers have a victory rate of just 15 percent, while superior powers achieve a positive dyadic victory rate of 54 percent. Second, nuclear superiority increases the chances of victory by 39 percent. In all, this means that strategically inferior powers should rarely engage in brinkmanship due to their abysmal success rate of 15 percent, and achieving nuclear superiority greatly increases the chance of victory. This is clearly seen in Figure 3 where the victory rate of strategically superior powers exceeds that of strategically inferior powers by 19 percent. Regression analysis conducted by Kroenig assesses nuclear superiority to be a very significant predictor of success (Table 4).

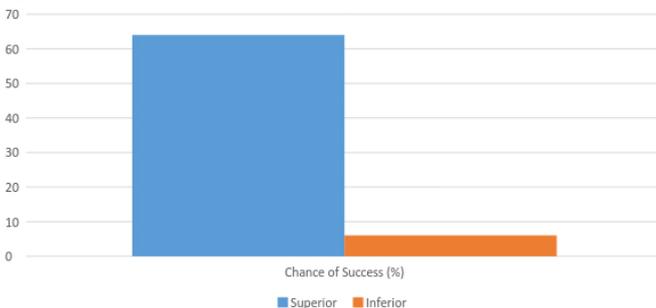


Table 4: Chance of Success for Strategically Inferior and Superior Nations. Superior and Inferior Nations vs. Chance of Success per Dyad.

A nation with nuclear inferiority has a victory probability of 6 percent, while a superior nation has a probability of 64 percent. All other variables held constant, nuclear superiority provides for a 57 percent increase in chances of victory and has a substantive effect on nuclear crisis outcomes. Kroenig specifically examined the US-USSR crises during the Cold War and found that, when the United States had nuclear superiority over the Soviet Union, it achieved victory in 6 out of 10 crises, and its success rate increased as its superiority increased. When the United States had at least 10,000 more nuclear warheads than the Soviet Union, it won at least 5 of 6 crises and possibly all 6 depending on which historians one believes (Kroenig, 2013). After the late 1970s when the Soviet Union achieved nuclear superiority, the United States lost all 3 crises with the USSR.

A final piece of interesting information to arise from Kroenig’s data set is that states are more likely to achieve victory in crises that occur closer to their own territory and that the “gravity of the crisis” and the stakes involved do not appear to influence the outcome of the crisis (Kroenig, 2013). This could be because the stakes or gravity of a crisis weigh on a nation’s decision to get involved but then do not have an impact once the crisis is underway.

The final step in adequately testing the hypothesis is determining whether the challenger in each crisis is more often the victor of the crisis. Using Kroenig’s list of crises, the data set is shown in Table 5.

Crisis	Challenger	Defender	Victor
Korean War	USA	USSR	None
Suez Crisis	UK	USSR/USA	USSR/USA
Berlin Deadline Crisis	USSR	UK/USA	None
Berlin Wall Crisis	USSR	UK/France/USA	USSR
Cuban Missile Crisis	USSR	USA	USA
Congo Crisis	USSR	USA	USA
Six Day War	USSR	Israel/USA	Israel/USA
Sino-Soviet Border War	China	USSR	USSR
War of Attrition	USSR	Israel	None
Cienfuegos Submarine Base	USSR	USA	USA
Yom Kippur War	N/A	N/A	USA
War in Angola	N/A	N/A	USSR
Afghanistan Invasion	USSR	USA	USSR
Able Archer Exercise	N/A	N/A	None
Nicaragua/MIG-21S	N/A	N/A	None
Kashmir Crisis	Pakistan	India	None
Taiwan Strait Crisis	China	USA	USA
India/Pakistan Nuclear Tests	N/A	N/A	None
Kargil Crisis	Pakistan	India	India
India Parliament Attack	N/A	N/A	India

Table 5: Nuclear Crises, Challengers, and Victors.

Making the distinction between aggressor and defender is exceedingly difficult when research on the topic of brinkmanship defines those terms so broadly. For example, in the India/Pakistan nuclear tests, did India challenge the status quo because it tested its nuclear weapons first? Or did Pakistan challenge the status quo since India was already known to be a nuclear power when Pakistan was not, and Pakistan's response thus changed that status quo? Similarly, in the Cuban Missile Crisis did the United States first challenge the status quo by basing nuclear weapons in Turkey and undertaking the failed Bay of Pigs Invasion? Or was this state of affairs already the status quo which was then challenged by the Soviets basing nuclear missiles in Cuba? Where it is possible to discern them, aggressors and defenders of the status quo are noted, but more robust research is needed into the subject to explore the subject fully. With the undeveloped data available, however, it is possible to draw some conclusions. Of the 20 nuclear crises, 14 have a discernible aggressor. Of these 14 crises, only 2, the Afghanistan Invasion and the Berlin Wall Crisis, resulted in an aggressor victory. That is a 14 percent success rate for the aggressor.

## **Conclusion**

The available scholarship demonstrates that the hypothesis is incorrect, at least for the time being. Given the low success rate of 35 percent of all crisis dyads and the abysmal success rate of status quo aggressors of 14 percent, it seems incredibly dangerous for a nation to engage in brinkmanship as anything other than a last resort. Brinkmanship is mostly ineffective.

With that said, there are some important factors to consider. First, in many of the crises examined, the defender was simply the nuclear power that intervened first, so the status quo was determined by that nation's intervention. Intervention and willingness to get involved in crisis situations, therefore, is not inherently risky and in fact may increase the chances of success if a nation can set the status quo. However, without more research and likely a broader set of data, this cannot be determined from the research available. Second, changing technology and nuclear superiority will increase how effective brinkmanship can be for certain nations. If a nation has an effective missile defense system, its resolve and therefore chances of success increase as Powell has shown. If a nation likewise has nuclear superiority, its chances of success are much greater as Kroenig has shown. It can therefore be increasingly effective for a nation to engage in brinkmanship if it has an accurate understanding of its own capabilities and those of its adversary. Nations that lack strategic superiority should avoid brinkmanship at all costs, as the data shows that, out of all crisis dyads, the inferior nation has won only 8 percent and has a 6 percent overall chance of success. At best, a strategically inferior nation will be humiliated and return to the status quo. At worst, its recklessness will result in an accidental

nuclear exchange. With this in mind, the best answer to the research question appears to be that brinkmanship is somewhat ineffective as a tool of diplomacy, with the caveats that this assessment may change with technological advancement and that particular nations may find brinkmanship effective provided that they are prudent in its application.

It is also critical to remember that this field of study is not nearly as well-developed as other policy areas. There are still a number of factors for scholars to consider in future research. Kroenig's 2013 study is the pinnacle of available research and is also the first time a scholar has quantitatively considered not only nuclear superiority but also nuclear crisis outcomes. The fact that crucial variables are still being discovered and implemented and that the data set is so small means that much more research must be done in this field to truly establish a robust theory of nuclear crises and nuclear brinkmanship.

More study must also be conducted relating to modern brinkmanship, particularly regarding non-rational actors like religious terrorists. How do the principles of resolve apply to individuals or organizations such as the Islamic State or al-Qaeda where martyrdom is the ultimate goal? If escalation does not carry any risk but is rather something to be desired, how would this affect a nuclear crisis where one actor theoretically possesses unlimited resolve? While thankfully nuclear weapons currently remain in the hands of rational actors, in the future this may not be the case. Future research should also consider the possibility that states may use nuclear brinkmanship to achieve destabilization. For example, Pakistan has been extremely eager to enter into brinkmanship situations despite its apparent nuclear inferiority. What generally qualifies as success or failure in brinkmanship situations may not necessarily apply in these situations, where the side effect of destabilization is more important than the actual capitulation of an adversary.

The issue of nuclear weapons and statecraft is more relevant today than it has been since the Cold War. With the escalation and sabre-rattling of North Korea and the perpetual questions surrounding Iran's nuclear program, policymakers must be informed about the utility and effects of nuclear brinkmanship on diplomacy. The study of nuclear crises is in dire need of more work such as Kroenig's so that exhaustive data sets can be created, precise and authoritative definitions may be established, and relevant variables may be discovered and given due consideration before being applied to practical policy questions.

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