Calculating Dependence:
Soviet Security Guarantees and China’s Pursuit of Nuclear Weapons

Fiona Stephanie Cunningham
Political Science Department, Massachusetts Institute of Technology
fcunning@MIT.EDU

Paper Presented at ISAC-ISSS Joint Annual Conference
Austin, Texas
November 14-16, 2014

**NOT FOR CITATION OR CIRCULATION WITHOUT PERMISSION OF AUTHOR**

Abstract
In the early 1950s the Soviet Union reassured China that it was covered by a nuclear umbrella and did not need its own nuclear weapons, although the Soviet Union later provided extensive nuclear assistance to China. This paper applies existing theories of the credibility in international relations to examine why the Soviet extended nuclear deterrence guarantee failed to prevent China’s pursuit of nuclear weapons. The paper offers a theoretical framework for measuring junior alliance partners’ perceptions of changes in the credibility of security guarantees due to changes in the capabilities, interests and reputation of the superpower. It addresses a gap in the nuclear nonproliferation literature, which does not conclusively indicate whether, and if so when, security assurances are effective in preventing proliferation. According to new Chinese-language sources, Soviet violations of alliance commitments in the early 1950s persuaded Chinese leaders that they could not depend on the Soviet nuclear umbrella to protect their vital interests from US nuclear coercion.
Introduction
The simultaneous arrival of the nuclear age and the bipolar competition between the United States and Soviet Union during the Cold War had a profound effect upon the nature of alliances. On the one hand, major military alliances in the post-World War II international system were highly unequal. According to balance of power theory, smaller states were irrelevant to the superpower military balance, so superpower assurances to defend junior alliance partners vis-à-vis the other superpower should not have been credible. On the other hand, nuclear weapons provided smaller states with an independent option to defend themselves vis-à-vis a superpower adversary, where doing so with conventional armaments would be too costly or simply impossible. Balance of power theory predicts that this combination of structurally non-credible alliance commitments and nuclear weapons would result in widespread nuclear proliferation, and fragile or ineffectual alliances. Instead, Cold War alliances were remarkably durable and relatively few junior alliance partners capable of acquiring nuclear weapons actually did so. What explains the variation in junior alliance partners’ decisions to acquire nuclear weapons?

While most nuclear proliferators face some sort of security threat, other factors including status, bureaucratic politics, security guarantees, technology acquisition, leader psychology, and wealth have affected different states’ decisions to acquire nuclear weapons. But none of these non-threat explanations are present in all cases of proliferation and nonproliferation. In this paper, I contribute to the nuclear proliferation literature on the role of superpower security guarantees in the proliferation decisions of junior alliance partners. Of the many recent quantitative studies of the causes of proliferation, only one has found that security guarantees have a clear negative

---
3 Goldstein argues that the mix of anarchy, bipolarity and nuclear weapons should prompt states to acquire nuclear weapons and explains Cold War nonproliferation by reference to a set of unit-level mitigating factors: Goldstein, Deterrence and Security in the 21st Century, p. 17, 258.
effect upon proliferation.\textsuperscript{5} Even so, that effect is probabilistic, and prompts the question of why the effect of security guarantees upon proliferation decisions has varied within and across cases of nuclear proliferation. In accordance with some findings in the recent scholarship examining why superpowers succeed in constraining proliferation among their allies, I argue that the variation in the effect of security guarantees is due to variation in the credibility of those guarantees.

I draw upon recent international relations scholarship on the nature of credibility to offer a theory of how junior partners assess the credibility of superpower security assurances for the purposes of deciding whether to pursue an independent nuclear deterrent. I argue that junior alliance partners assess the credibility of their senior alliance partner’s security assurances by reference to the senior partner’s capabilities to defend them, and the level of senior partner interest in the junior partner’s vital interests. However, a senior ally’s interest in its junior ally’s vital interests is difficult to assess. A junior alliance partner uses its senior partner’s record of keeping or breaking its commitments – its “reputation” – to make more precise assessments of their senior partner’s interests.

I test this theory of alliance credibility on the case of China’s decision to acquire nuclear weapons within the Sino-Soviet alliance during the 1950s, and the shadow cases of French proliferation and West German non-proliferation in the same period. This reputation-based theory of alliance credibility performs better than a theory of alliance credibility that ignores reputation, or examines variation in threat only. But it is still an imperfect predictor of the timing of proliferation decision points.

This paper makes three contributions to the international relations literature. First, I offer an explanation for the variation in the effect of security assurances on proliferation and make a more systematic effort to measure the credibility of those assurances. My empirical findings suggest that commitments to defend an ally are not interdependent of other alliance commitments such as the provision of military assistance. Alliance credibility will be

compromised where the senior partner denies the junior partner support in a military crisis, or indicates that its security assurances do not extend to the junior ally’s vital interests beyond its survival. Second, both the theory and empirical evidence offered in this paper establish that allies and adversaries do not assess credibility in the same manner. Even if adversaries do not consider each other’s reputations when assessing the credibility of one another’s threats, as Daryl Press has argued, decision-makers should not necessarily follow his recommendation that “countries should not fight wars for the sake of preserving their credibility.”

Third, the China case study exploits the most recent Chinese-language sources to update the scholarship on the role of Soviet security guarantees and assistance in Chinese nuclear decision-making. I show that Chinese leaders showed a sustained, serious interest in acquiring nuclear weapons from 1952, rather than 1955 or later. China never compromised the independence of its future nuclear arsenal by accepting Soviet assistance. I argue that Chinese leaders were uncertain of the credibility of a Soviet nuclear umbrella when they entered into an alliance with the Soviets, but Soviet behavior during the early Korean War likely persuaded Chinese leaders that this commitment was not credible.

The paper proceeds as follows. The first section of this paper reviews the relevant international relations literature on nuclear proliferation, reputation, credibility, and alliances. The second section outlines a theory of proliferation driven by changes in alliance credibility, which is then tested against an alternative conception of credibility, and variation in threat only, in the empirical section of the paper. The third section applies the theory to the main case of the Sino-Soviet alliance from 1950 to 1961 and the shadow cases of France and the Federal Republic of Germany (FRG), and the United States.

---


1. Proliferation, Reputation and Alliances

The question of whether and how alliance credibility affects the proliferation decisions of junior partners in an asymmetric alliance prompts two further questions: why do junior alliance partners acquire nuclear weapons and what is credibility? A review of the literature on credibility and proliferation within alliances indicates a gap in the theoretical literature regarding the role of alliance credibility in proliferation decisions. The nuclear proliferation literature indicates that the credibility of security guarantees is a factor influencing junior alliance partners’ proliferation decisions. Relatively recent explanations of why the credibility and effect of security guarantees vary across cases of proliferation tend to merge coercion and persuasion, which are not present in all cases of proliferation. The literature on the credibility of state commitments provides some theoretical guidance as to why credibility varies, but has not adequately addressed the question of what makes an alliance commitment credible.

The existing literature also offers four insights that form the basis of the theory in the next section. First, there is no theoretical reason to assume that states prefer an independent or dependent means of ensuring their security, even in the nuclear age. Second, junior alliance partners may believe that their superpower patrons have an interest in maintaining credible alliance commitments in order to prevent them from acquiring nuclear weapons. Credible alliance commitments therefore matter even if junior allies are immaterial to the balance of capabilities between the two superpowers. Third, there are good theoretical reasons to apply a concept of alliance credibility that combines interests, capabilities and reputation to security affairs. Fourth, under conditions of bipolarity, balance of power theory, which takes account of interests and capabilities only, predicts that alliance commitments should not be credible if they create any risk of conflict between the superpowers. If there is, however, variation in alliance credibility, it is possible that this is due to variation in reputation. This is especially likely if the relevant capability to alliance credibility is the superpower nuclear balance during the early Cold War, which moved in a constant trajectory towards mutual vulnerability. Reputation may therefore be used to identify variation in alliance credibility.
The Causes of Proliferation

Scholars have identified a security threat in all instances of proliferation, but have noted that not all states facing security threats acquire nuclear weapons, prompting a search for additional factors to explain proliferation. These “threat plus” factors can be divided into security, domestic politics, status, and supply explanations. Security explanations argue that proliferation occurs where nuclear weapons are most effective option for a state to counter a particular threat, specifically, in the absence of a credible protection from an ally and presence of a nuclear-armed or conventionally superior adversary. Domestic explanations argue that certain sub-state actors encourage the pursuit of nuclear weapons, such as the nuclear energy establishment, military, or politicians representing groups that favor nuclear weapons acquisition, national leaders with particular psychological dispositions, or government consensus on a particular development strategy. Status explanations argue that states pursue nuclear weapons to acquire symbols of international prestige and modern statehood, or alternatively that states eschew proliferation to avoid violating nonproliferation norms. Supply side explanations argue that the greater a state’s capacity to develop nuclear technology, or the greater its access to foreign nuclear technology, the greater the likelihood of proliferation. Quantitative tests of these proliferation explanations have supported the threat and supply side explanations, but their findings on other explanations are either inconclusive or unconvincing. The nonproliferation literature therefore indicates that

---

15 Singh and Way, “The Correlates of Nuclear Proliferation”; Jo and Gaartzke, “Determinants of Nuclear Weapons Proliferation”.
threat and economic capacity to initiate a nuclear weapons program are necessary conditions of proliferation, but is not able to discern among a suite of different sufficient conditions not present in all cases.

**Security Guarantees and Proliferation**

A key, unresolved question in the proliferation literature, both theoretically and empirically, is whether and how alliance security guarantees prevent proliferation. The theoretical disagreement stems from different assumptions about state preferences. Goldstein assumes that states will always prefer to arm rather than rely on alliances to ensure their security because international anarchy leads all states to prefer security independence rather than depending upon an ally. Frankel assumes that states have no inherent preference for self-reliance or dependence, but rather weigh the relative domestic costs and security benefits of arming and alliances to meet the relevant threat. As a result of these differing assumptions, Frankel assumes that Cold War extended nuclear deterrence guarantees were credible because of the zero-sum nature of superpower conflict, while Goldstein argues that anarchy and bipolarity undermined confidence in the same alliance guarantees.

From an empirical standpoint, cross-national, comparative case studies indicate that the effect of security guarantees varies across cases. Some cases cast doubt on whether reputation, defined as a superpower’s past actions, has any bearing on the credibility and therefore effectiveness of security assurances. The degree of credibility that a junior partner demands of its patron’s

---

security assurances may also vary with the severity of threat that the junior partner perceives from the common adversary.\textsuperscript{23} Quantitative studies of the determinants of proliferation are equally inconclusive, although a recent study found a robust, negative correlation between the proliferation and security alliances with the United States and Russia/the Soviet Union.\textsuperscript{24} These findings are consistent with the heterogeneous effect of security assurances identified in the case study literature.

A number of recent studies have offered explanations for the variation in proliferation within alliances. Miller shows that the United States effectively prevented nuclear “dominoes” from falling in India, Japan, Australia and Taiwan following the Chinese nuclear test in 1964 with a mix of sanctions, security guarantees, technology denial and military force.\textsuperscript{25} Gerzhoy argues that superpowers can prevent proliferation among junior allies that are militarily dependent upon them if they threaten to withdraw military protection in the event of proliferation but otherwise promise continuing protection.\textsuperscript{26} Kogan shows, however, that US threats played a greater role than the few incentives offered in Taiwan’s decision to renounce its nuclear weapons program.\textsuperscript{27} Lanoszka argues that junior partners examine the willingness and capability of their senior partners to deliver on their security guarantees, looking to political and economic indicators, such as conventional troop deployments and defense outlays. He argues, however, that junior partners take steps towards nuclear acquisition to bargain with its guarantor over the terms of the

\textsuperscript{23} Frankel, “The Brooding Shadow,” p. 46.
\textsuperscript{24} Bleek and Lorber, “Security Guarantees and Allied Nuclear Proliferation,” p. 434. Bleek and Lorber corrected the problematic coding of security alliances in previous quantitative studies, which had found that the presence of a great power ally has a negative but statistically insignificant effect upon proliferation. Both Jo and Gaartzke and Singh and Way coded any state allied with the United States, Soviet Union, United Kingdom, France or China after they acquire nuclear weapons as receiving a superpower guarantee, despite the fact that the United Kingdom, France and China were recipients of security guarantees themselves, in the European cases even after they acquired nuclear weapons. Singh and Way, “The Correlates of Nuclear Proliferation” p. 869, 873; Jo and Gaartzke, “Determinants of Nuclear Weapons Proliferation,” p. 174, 176.
Debs and Monteiro argue that a key necessary condition to proliferation is the ability of the proliferator to deter a preventive attack by its nuclear adversary. A senior alliance partner may provide such cover to a weak power if it is neither willing to provide credible future security guarantees nor can it make credible threats to abandon the junior ally. This recent wave of literature on proliferation within alliances draws attention to the importance of coercion within alliances, but does not provide a clear account of the role of alliance credibility independent of coercion and the ingredients of junior partner perceptions of alliance credibility.

The nonproliferation literature also identifies the particular nonproliferation interest that senior alliance partners have in maintaining credible alliance commitments and junior alliance partners’ awareness and exploitation of this interest. If junior alliance partners cannot contribute to the military competition between the superpowers and, as Press argues, reputation is irrelevant to the credibility of threats in military crises, a superpower might still maintain credible alliance commitments to prevent the loss of influence over an ally if it acquires nuclear weapons. A nuclear-armed junior partner may upset the regional or global balance of power in ways that undermine the senior partner’s interests, entrap its senior alliance partner in a nuclear conflict, or terminate the alliance and threaten the senior partner. Junior allies may exploit this breakout

---

29 Nuno P Monteiro and Alexandre Debs, “The Strategic Logic of Nuclear Proliferation,” manuscript, June 1, 2014.
31 Snyder argues that a state’s bargaining leverage over its ally is determined by its dependence upon that ally, in addition to its interest vis-à-vis the common adversary and interest in its ally’s survival: Glenn H Snyder, *Alliance Politics* (Ithaca: Cornell University Press, 1997) p. 183. Nuclear weapons decrease the dependence of a smaller state on a superpower alliance partner for its defense, decreasing the influence of the superpower over the smaller state. See also Francis J Gavin, “Politics, History and the Ivy Tower Gap in the Nuclear Proliferation Debate,” *Journal of Strategic Studies*, Vol. 35, No. 4 (August 2012): 573-600, p. 590.
32 Miller, “Nuclear Dominoes”; Lanoszka, “Protection States Trust”.
concern for leverage over their senior alliance partners, for example by acquiring a latent or crude nuclear weapons capability.\textsuperscript{35}

\textit{The Components of Credibility}

Daryl Press argues that when faced with an adversary’s threat in a military crisis, decision-makers assess their adversary’s interest in the crisis and military capabilities to execute their threat, but ignore their adversary’s reputation. This “current calculus” theory, works from the same basic premise as balance of power theory, that security interests and capabilities are the overriding motivations for state behavior and thus the only determinants of the credibility of their threatened actions.\textsuperscript{36} Press’ findings are, however, sensitive to how he distinguishes between capabilities, interests, and past actions. Press’ categorization of interests is vague: “vital” material interests affect the sovereignty and territorial integrity of the state in question, but states have other “important” material interests, and non-material interests.\textsuperscript{37} If decision-makers looked to their adversary’s past actions to gather more detailed information about interests and costs, Press interpreted this as consideration of interests, not reputation. As Tomz argues, credibility may be more accurately conceptualized as including reputation \textit{as well as} capabilities and interests, rather than reputation \textit{or} interests and capabilities.\textsuperscript{38}

Press’ current calculus theory is difficult to apply to alliance credibility. As current calculus theory is derived from balance of power theory, the polarity of the system should predict the credibility of alliance commitments. The commitments of a great power to a smaller state should not be credible under bipolarity if they increase the risk of conflict among the superpowers. Current calculus theory therefore suffers from the same failings as balance of power theory to


\textsuperscript{38} Tomz argues that decision-makers may not be able to measure the interests and capabilities of their adversaries directly, accurately, and in real time; and these measurements may be less accurate predictors of future behavior than past actions: Michael Tomz, \textit{Reputation and International Cooperation} (Princeton: Princeton University Press, 2007) p. 31-2.
explain the durability of Cold War alliances.\textsuperscript{39} In addition, Press’s psychological mechanism, which relies on the existence of a crisis to force a more systematic mode of reasoning,\textsuperscript{40} is not readily applicable to assessments of alliance credibility. Decision-makers are likely to assess their ally’s credibility long before a crisis erupts, by which time it would be too late to find alternative means of ensuring their security.

Mercer offers the only real attempt to theorize about the difference between alliance and adversary credibility. He argues that decision-makers make judge the reputation of their allies and adversaries alike based on their undesirable behavior, explaining away their desirable behavior to the situation rather than character of the state. Allies may therefore only develop a reputation for being unreliable. However, Mercer’s predictions are not clearly supported by his empirical evidence.\textsuperscript{41} Like Press, he also treats credibility as composed of either reputation \textit{or} capabilities and interest without justification.

2. A Reputation-Based Theory of Alliance Credibility

In this section I first outline the scope conditions of the theory and define the ingredients of alliance credibility – reputation, capabilities, and interests. I explain how the independent variable, reputation, and the dependent variable, security independence, are conceptualized and operationalized, and the hypotheses generated by the theory.

\textit{Scope Conditions}

This paper builds and tests a theory of alliance credibility and proliferation within asymmetric alliances in the nuclear age. It has four scope conditions: (1) the senior alliance partner must be


\textsuperscript{40} Press, \textit{Calculating Credibility}, p. 6, 23.

capable of extending nuclear deterrence to the junior alliance partner; (2) the alliance must include a commitment by the senior alliance partner to assist the junior alliance partner militarily in the event of an attack; (3) the junior alliance partner must have the freedom to seek security outside of the alliance; and (4) the junior alliance partner must have the economic and technological capacity to initiate a nuclear weapons program with some chance of success. The theory therefore does not apply to neutrality agreements, non-aggression pacts, or to “hierarchic” alliances, such as the Soviet Union’s alliances with the Warsaw Pact states, who were not free to terminate the alliance or acquire their own nuclear weapons.42

Ingredients and Definitions

I define alliance credibility as a junior partner’s assessment of the probability that its senior ally will uphold its commitment to defend the junior ally if a common adversary threatens the junior ally’s vital interests. I argue that junior partners evaluate their senior partner’s capabilities, interests, and reputation in order to determine whether that senior partner’s commitment to its junior ally’s defense is credible.

I define reputation as the senior partner’s past record of keeping or breaking commitments, as perceived by the junior ally. Capabilities refer to the relevant military balance between the junior and senior ally combined, versus the common adversary, in the most likely scenario in which the common adversary would pose a threat to the junior partner’s vital interests. I adopt Press’ typology of interests. Vital interests include preserving sovereignty and preventing the consolidation of the world’s major economic centers. Important interests are capable of affecting the state’s material power without directly threatening a state’s sovereignty or overturning the balance of power. The vital interests of most junior allies fall within the “important interests” category, unless their alignments affect the consolidation of major economic centers, or the security of the senior partner’s borders.43

I argue that junior partners search for more fine-grained information about the value their patron holds places upon their vital interests, and the cost it is willing to incur to protect those vital

interests. Past actions provide detailed information about the degree of overlap between the junior partner’s vital interests and the senior partner’s interests.\(^4\) A junior partner interprets every past action, defined as any action by the senior ally that may be perceived as fulfilling a commitment included in the alliance treaty, as a signal that the superpower will keep or break its future commitments. These are accumulated and used to assess the likelihood that the senior ally will uphold its commitment to defend the junior partner if its vital interests were threatened by the common adversary in the present. More serious events such as support during military crises are weighted more heavily than, for example, a trade agreement, and events between the junior and senior ally are weighted more heavily than events between the senior ally and a third party junior ally. In this sense, reputation is interdependent across all alliance commitments. However, the use of past actions to gather more fine-grained information about an ally’s capabilities, such as the effectiveness of missile defenses, does not contribute to the senior ally’s reputation.

*Independence – the Dependent Variable*

If a junior partner’s assessment of the credibility of its patron’s commitment decreases, it will look for alternative means of supplying the security “shortfall” formerly covered by the alliance. In the nuclear age, non-superpower states have rarely been able to find alternative allies, especially if they are seeking protection against the other superpower. As such, the junior partner has two options – to induce its patron to restore the credibility of the alliance, or acquire its own capabilities. I define the independence of a state’s means of ensuring security as the relative proportion of its security provided by an ally versus its own nuclear capabilities. A junior partner also has a middle option, to use the threat of nuclear breakout as leverage to ensure that its senior alliance partner intervenes if the common adversary threatens it.

This “independence” variable can also be used to code the means by which a state acquires nuclear weapons, as many later proliferators have sought to speed up their nuclear weapons programs by relying on foreign assistance. This is important in order to parse the effects of alliance coercion and credibility in proliferation decisions – senior partners have much less coercive leverage over a junior partner pursuing nuclear weapons via independent means. In addition, if unconditional foreign assistance is offered provided by the same state as that offering

\(^{4}\) Snyder, *Alliance Politics*, p. 36.
the security guarantee, comparing the independence of both the nuclear capability and the means of acquisition offers an opportunity to examine whether alliance commitments to assist and defend are interdependent.

I code state choices of security independence according to one of the following three values:

1. **Self-reliant** – the junior partner seeks an independent capability to deter or defeat the common adversary. It develops nuclear warheads and delivery systems, and has complete authority over decisions to release nuclear weapons; e.g. India at present.

2. **Dependent but hedging** – the junior partner depends primarily upon its senior ally for security but acquires a crude nuclear weapons capability coupled with a catalytic nuclear posture, or acquires a latent nuclear weapons capability, to induce the senior alliance partner’s assistance if the common adversary threatens it. That capability has a secondary purpose of hedging against abandonment by the senior partner; e.g. Japan at present.

3. **Dependent** – the junior partner cannot independently deter or defeat the common adversary if its senior partner abandons it. It does not pursue a nuclear weapons capability. It may be party to nuclear sharing arrangements but has no independent authority to release nuclear weapons; e.g. Australia at present.

*Reputation – the Independent Variable*

I conceptualize alliance credibility as a spectrum from completely credible to not at all credible, although even highly credible alliance commitments may be probabilistic.45 States may evaluate their allies' commitments as:

1. **Credible** – the senior ally will uphold its commitments in the most likely scenario in which the junior partner’s vital interests are threatened e.g. South Korea-United States at present;

2. **Uncertain** – the senior ally may or may not uphold its commitments in the most likely scenario in which the junior partner’s vital interests are threatened e.g. Taiwan-United States at present;

3. **Not Credible** – the senior partner will not uphold its commitments in the most likely scenario in which the junior partner’s vital interests are threatened e.g. China-Pakistan at present.

It is possible to isolate the impact of changes in reputation upon alliance credibility from changes in capabilities and interest – the other two components of alliance credibility – for two reasons. First, it is implausible that the “important” interest a senior alliance partner has in the vital interests of a junior partner would change over time. Second, if the nuclear balance is the relevant capability to the most likely scenario in which the junior partner’s vital interests are threatened, that balance changed gradually, and in one direction only, during the Cold War as the US first strike capability eroded during the 1950s and early 1960s. If this is how allies perceived the general movement of the nuclear balance, all US alliances should have become less credible and all Soviet alliances more credible over that period of time. The effect of reputation upon alliance credibility should be clear in cases that defy this prediction.

**Assumptions**

I assume that a junior partner will enter into an alliance only if it believes the senior partner’s commitments to be credible enough for it to be worth pursuing an alliance in the first place, so the dependent variable coding at the moment of alliance formation is “uncertain”. I also assume that the junior ally enters into the alliance dependent upon the superpower and that the junior partner is a unitary actor.

**Threat Perception – the Intervening Variable**

Variation in the threat perceived from the common adversary is an intervening variable between alliance credibility and security independence. Changes in threat perception will affect the level of credibility a junior partner requires of its senior ally,\(^{46}\) so the thresholds between independent variable values may vary. Unlike capabilities and interests, threat perception is likely to vary

\(^{46}\) Frankel, “The Brooding Shadow,” p. 46.
over time according to the behavior of the adversary. I test the reputation-based theory of credibility against a threat-only theory of proliferation in an attempt to parse the effects of reputation and threat perception.

Hypotheses
The theory outlined above generates three testable hypotheses that link variation in reputation with changes in the security independence of a junior partner. These hypotheses describe how assessments of reputation will affect the proliferation choices of the junior partner once its senior ally has been given the opportunity to fulfill its commitments.

H1.1: If a senior ally breaks its alliance commitments, that junior partner will assess its alliance commitments as not credible. It will therefore pursue an independent nuclear weapons capability.

H1.2: If a senior ally breaks some alliance commitments while upholding others, that junior partner will assess its alliance commitments as uncertain. It will therefore seek a latent nuclear weapons capability or catalytic nuclear posture in order to ensure its senior ally’s support in a crisis.

H1.3: If a senior ally upholds its alliance commitments, that junior ally will assess its alliance commitments as credible. It will therefore depend upon the senior ally’s extended nuclear deterrence guarantees.

I also test the argument that alliance commitments are interdependent across issue areas covered by the alliance:

H1.4 If a senior ally breaks commitments to provide military or economic assistance, its junior ally will decrease its assessment of the senior ally’s commitment to defend its vital interests.

I test the reputation-based theory of credibility against Press’ current calculus theory:
H2.1: If a senior ally loses its capability to defend a junior partner, that junior partner will assess its alliance commitments as not credible. It will therefore pursue an independent nuclear weapons capability.

H2.2: If a senior ally acquires the capability to defend a junior partner, that junior partner will assess its alliance commitments as credible. It will therefore depend upon the senior ally’s extended nuclear deterrence guarantees.

I test both theories of alliance credibility against a threat-only theory of nuclear proliferation:

H3.1: If a junior partner’s threat perception increases, it will pursue an independent nuclear weapons capability.

H3.2: If a junior partner’s threat perception remains constant or declines, it will depend upon the senior ally’s extended nuclear deterrence guarantees.

Research Design
To test these three sets of hypotheses, I examine the decision points at which US and Soviet junior allies considered developing an independent nuclear capability to see whether changes in reputation affected the timing and outcome of their decisions. I test the theory in cases involving formal alliances because reputation is easier to measure against explicit alliance treaty provisions. I limit the universe of cases to states that faced one of the two superpowers as their adversary, to ensure that the slow-moving nuclear balance was the relevant capability for assessments of alliance credibility. The nuclear capabilities of the two superpowers changed during this period, but the trajectory of those changes was predictable and constant. As a result, only reputation and threat vary randomly and require repeated measurement.

I define the universe of cases as all states with the economic and industrial capacity to acquire a nuclear weapon that had a formal, non-hierarchical defense pact with either the Soviet Union or United States between 1945 and 1991, and a common adversary of the pact was the other
superpower. The universe of cases is as follows: France, United Kingdom, People’s Republic of China, Australia, Greece, Turkey, Italy, Japan, the Federal Republic of Germany, South Korea, North Korea, Spain, Taiwan, Brazil, Israel, Pakistan, and Saudi Arabia.47

I selected three cases from the universe above and examine one in detail – the People’s Republic of China – and two shadow cases – France and the Federal Republic of Germany. While multiple in-case observations allow for a thorough test of the theories with a single case, together these three cases allow for a stronger test of the theory through a most-similar most-different research design. France and China are “most different” cases. Both acquired nuclear weapons, thus the reputation-based theory predicts that both states lost confidence in their allies because those allies broke their alliance promises. But they had different superpower patrons, alliance structures and commitments, regime types, levels of development, and adversaries. France also had a pre-existing nuclear program at the time it joined the North Atlantic Treaty Organization (NATO). The FRG and France are “most similar” cases on these same features, with the exception of West Germany’s partition and defeats in World Wars I and II. The FRG did not, however, acquire nuclear weapons. The reputation-based theory would predict that the United States kept its alliance commitments to the FRG but not to France. I chose to examine the China case in depth because both theories of alliance credibility would predict that the credibility of Soviet security assurances should have increased between 1950 and 1960. The Soviet Union provided China with a substantial level of economic, military and nuclear assistance. Perhaps more importantly, it placed no conditions on this assistance until 1958, forgoing coercive leverage over China through nuclear assistance until it was too late. The China case therefore offers a clearer test of the effect of alliance credibility alone, rather than the combined effect of credibility and coercion. Meanwhile, its nuclear capabilities improved during the 1950s.

The unit of analysis is the nuclear decision point, defined as any point at which leaders considered whether to acquire nuclear weapons, request or accept assistance with a nuclear program, or accept conditional assistance or joint forces. If alliance credibility affects decisions

47 I developed a list of these alliances using the Correlates of War alliances dataset, and then used Singh and Way’s list of most-likely proliferators generated by their correlates of proliferation model to identify those states that had the economic and industrial capacity to build the bomb but did not in fact do so. See Singh and Way, “The Correlates of Nuclear Proliferation,” p. 880.
to acquire nuclear weapons, decision-makers should justify their decision by reference to the credibility of alliance security commitments. They may also justify their assessment of credibility by reference to reputation. A case is defined as the set of nuclear decision points in a particular state from the formation of the alliance to the decision point at which the state either signs a treaty renouncing the acquisition of independent nuclear arms or renounces future foreign involvement in its nuclear weapons program.

For the China case, I first discuss the nature of Soviet alliance commitments, its interest in Chinese vital interests, and capabilities vis-à-vis the United States. For each decision point, I first code the outcome of the decision point and outline any evidence that threat or alliance credibility was used to justify that outcome, using primary sources where possible. I then used secondary sources to identify events that should have affected China’s threat perception and its perception of Soviet reputation. I code alliance credibility for the period prior to the decision point using these “alliance events”. I evaluate whether the threat, reputation or current calculus hypotheses predict both the timing and outcome of the decision points. For the NATO cases, I examine whether the reputation-based theory is consistent with existing explanations of French and West German nuclear decision-making between 1949 and 1963.

**China**

The most authoritative account of China’s nuclear weapons program, Lewis and Xue’s 1991 book *China Builds the Bomb*, attributes China’s pursuit of nuclear weapons to its increasing perception of the US threat through events in East Asia in the 1950s. A mix of ideology and experience of civil war and foreign intervention gave Chinese leaders a preference for an independent nuclear deterrent.48 There is general agreement in subsequent scholarship examining China’s nuclear weapons program that these two factors – threat and self-reliance – motivated China’s pursuit of the bomb. Soviet security guarantees are judged irrelevant to China’s decision to acquire nuclear weapons. The role of Soviet assistance to China’s development of nuclear weapons is clearly acknowledged, but there is no agreement in the existing literature over the extent to which Soviet nuclear assistance implied Chinese dependence on the Soviet Union for

48 Lewis and Xue, *China Builds the Bomb*, p.35.
its security.\textsuperscript{49} I argue below that Soviet security guarantees were relevant to China’s decision to pursue nuclear weapons. I argue that Soviet nuclear assistance did not compromise the independence of China’s deterrent. Nor did the Soviet Union place conditions on its nuclear assistance until 1958, when it had already lost the leverage to coerce China to roll back its nuclear program.

After China formed an alliance with the Soviet Union in February 1950, it made four nuclear decisions, including to pursue an independent nuclear weapons program in January 1955, before deciding to continue its nuclear weapons program without any further Soviet assistance in 1960. There is no speech evidence from any of those decision points that Chinese leaders assessed the credibility of Soviet security guarantees to defend Chinese vital interests against the common adversary, the United States. From Zhou Enlai’s first request for Soviet nuclear weapons assistance in 1952, Chinese leaders only ever sought a fully independent nuclear weapons capability, suggesting that they did not perceive Soviet security guarantees as credible from at least 1952 onwards. There are, however, two instances that are not connected with nuclear decision points in which Chinese leaders justified their pursuit of an independent nuclear weapons capability by reference to the Soviets breaking alliance commitments. In 1955 Defense Minister Peng Dehuai resolved to acquire nuclear weapons after the Soviets reneged on a promise to show him a Soviet ballistic missile submarine. In 1958, Mao justified a statement that Soviet extended nuclear deterrence was unreliable by reference to its failure to completely fulfill loan commitments made in the alliance and requests that China pay for Soviet assistance provided during the Korean War.

Official histories and biographies of key nuclear figures emphasize that the nuclear program was an example of “self-reliance” (zili gengsheng),\textsuperscript{50} which essentially meant pursuing a dependent


means to acquire an independent capability.\textsuperscript{51} This civil-war era Chinese Communist Party (CCP) principle, adapted to the needs of the new Chinese state, did not mean that China should seek autarky, but rather it should study foreign technology to accelerate indigenous defense science and technology development. At two decision points, Chinese leaders justified their decision to seek nuclear weapons through Soviet assistance or independent means by reference to Soviet reputation, in 1957 and 1960. In the following analysis of PRC decision points, in order to test H1.4, the interdependence of different alliance commitments, I code the dependent variable for both China’s security independence – its choices to acquire an independent nuclear capability – and whether to acquire that capability with Soviet assistance. The Sino-Soviet alliance offers a unique opportunity to test the interdependence hypothesis as a rare case of superpower assistance to a nuclear weapons program without conditions that would restrict the junior partner’s control over its deterrent. In addition, if Chinese leaders discussed Soviet assistance but not its nuclear umbrella, it is more plausible to infer that the credibility of Soviet alliance commitments were not discussed, given that complete records of each decision point are not available.

\textbf{The Alliance}

The Sino-Soviet Treaty of Friendship, Alliance, and Mutual Assistance was signed on February 14, 1950, but the scope of the Soviet security commitment to China was not clear from either the terms of the treaty or the negotiations surrounding it. Article 1 outlined a mutual security commitment: “In the event of one of the contracting parties being attacked by Japan or any other state allied with it and thus being involved in a state of war, the other contracting party shall immediately render military and other assistance by all means at its disposal”. Both parties also committed not to ally with another state against each other, to consult each other on issues of common interest, and to cooperate in economic and cultural matters.\textsuperscript{52} Luthi evaluates that the purpose of the treaty from China’s perspective was “to provide the young and weak PRC with a strategic deterrent and military aid against US imperialism at three fronts: Guomindang-held


Taiwan, divided Korea, and Vietnam” all three of which Mao saw as “conduits for a potential American attack”53. The treaty permitted the Soviets to retain privileges within Chinese territory bordering the Soviet Union in exchange for military and material support.54

It is not clear from the treaty negotiations or its terms whether the Soviet Union indicated, or Chinese leaders believed, that the military assistance commitment extended to Chinese efforts to reunify Taiwan with the mainland. Prior to the treaty negotiations, Stalin had refused to support Chinese requests for air and naval cover for a CCP attack on Taiwan.55 However, during the negotiations, Stalin encouraged China to attack Taiwan. He provided military assistance in an effort to provoke a US reaction and prevent a Chinese rapprochement with the West.56 There is no evidence that Chinese leaders were aware of Stalin’s ulterior motives. His change of heart would have signaled uncertainty in the geographic scope of Soviet security commitment.

It is equally unclear from the treaty provisions or negotiations whether the military assistance commitment involved a commitment to respond with Soviet nuclear threats or use if the United States threatened China with nuclear weapons. Premier Zhou Enlai insisted that the mutual defense commitment of the treaty include “all means at [each country’s] disposal,”57 which amounted to an implicit nuclear guarantee.58 The Soviets’ hesitation to include the “all means” clause is interpreted by Goncharov, Lewis and Xue as evidence that both sides saw this as placing Soviet nuclear weapons on the table for China’s defense, even though Soviet security treaties with its Eastern European allies, negotiated in 1948, included similar clauses. Soviet negotiators responded by raising the threshold for Soviet intervention from a “military

56 At the time Mao believed that the United States would not come to Taiwan’s assistance if the CCP attacked it. Goncharov, Lewis and Xue, Uncertain Partners, p. 98-100.
engagement” for their Eastern European allies to a definite state of war for the PRC. If China were attacked, the Soviet Union was therefore not legally obliged to intervene.\textsuperscript{59} The Soviets made no explicit extended nuclear deterrence commitment to China.

Scholars differ in their assessments of whether Soviet commitments to provide China with a nuclear umbrella were credible to Chinese leaders in 1950, but those assessments are not based on any conclusive evidence of Chinese leaders’ perceptions. Lewis and Xue argue that “The Sino-Soviet alliance of 1950 provided China a nuclear umbrella, and Mao welcomed its protection.” Mao believed that the United States would not use nuclear weapons over Korea or Indochina, but might over the PRC.\textsuperscript{60} They do not cite any sources for Mao’s beliefs. Feigenbaum argues that “in 1949, the Chinese had largely assumed the Soviets would provide an umbrella of nuclear protection” and “by 1950, the Soviet nuclear umbrella was apparently an established fact”. Feigenbaum supports this claim with evidence that Stalin showed Mao’s second in command, Liu Shaoqi, footage of a purported Soviet nuclear test to show that the Soviet Union was willing and able to extend a nuclear umbrella to its allies.\textsuperscript{61} But his sources do not indicate that Stalin’s intention or Liu’s interpretation of the episode amounted to an offer of extended nuclear deterrence. Shen and Xia argue that Stalin showed Mao real footage of a successful Soviet nuclear weapons test to show he was willing and able to extend nuclear deterrence to China. They argue that Mao decided “not to depend on the Soviets for a nuclear umbrella but instead to develop an independent Chinese nuclear capability”\textsuperscript{62} but provide no evidence for this decision. It is most likely that, at the time the Sino-Soviet treaty was signed, Chinese leaders were uncertain as to whether Soviet commitments to defend China with nuclear weapons were credible and whether any such commitment would extend to nuclear threats to the PRC for its actions outside its territory, in particular in Taiwan.

After the Sino-Soviet treaty was signed, Soviet leaders did provide further assurances that the treaty involved an extended nuclear deterrence guarantee. Soviet archival materials from October 1951 indicate that Stalin told Zhou that “Since any kind of US attack against China would trigger

\textsuperscript{59} Goncharov, Lewis and Xue, \textit{Uncertain Partners}, p. 117-118.
\textsuperscript{60} Lewis and Xue, \textit{China Builds the Bomb}, p. 12.
\textsuperscript{61} Feigenbaum, \textit{China’s Techno-Warriors}, p. 18-19.
\textsuperscript{62} Shen and Xia, “Between Aid and Restriction,” p. 5-6.
the mutual assistance provision of the Soviet-Chinese Alliance Treaty and draw the US into a global conflict with the USSR, for which it was not ready, America was unlikely to risk a war with China on the latter’s own territory.”\(^{63}\) Khrushchev confirmed the extension of the Soviet nuclear umbrella to China in October 1954, remarking, “Our [socialist] family has a protective nuclear umbrella and that is sufficient – there is no need for everyone to go and make [nuclear weapons].”\(^{64}\) In May 1955, Khrushchev told Defense Minister Peng Dehuai that Soviet advanced weaponry, including strategic bombers and guided missiles, could “help the Chinese in defending China’s coast if necessary”, “Russia’s powerful Navy and Air Force in the Far East can be at Chinese disposal at any time”, and that the United States would have to “consider it twice” before risking war against either China or the Soviet Union. Chinese Ambassador to the Soviet Union, Liu Xiao, reported that China was pleased with this offer,\(^{65}\) but, as discussed in more detail below, more recent sources indicate that Peng left Moscow without an answer as to how the Soviets and Chinese would cooperate during a war and convinced that China needed its own nuclear weapons.\(^{66}\)

Zhang cites two public sources as expressing Chinese confidence in the Soviet nuclear guarantee. An October 7, 1951 *People’s Daily* editorial stated that Soviet possession of nuclear weapons would “force our common enemy to lay down its own bomb ... [since] Soviet production of atomic weapons and our military intervention to resist America and aid Korea are serving the same purpose.”\(^{67}\) On February 12, 1955, in an address to the Chinese people, the Chairman of the Sino-Soviet Friendship Organization, Guo Moruo, remarked that “our ally, the Soviet Union, has


both atomic and hydrogen bombs, as well as long-range strategic bombers, which can be used to retaliate against US use [of nuclear weapons] against China”. 68

As the analysis of Chinese decision points below illustrates, Chinese leaders needed, and indeed used, other information than that provided by the treaty provisions and the statements of Soviet leaders to assess the credibility of Soviet commitments to defend the PRC with nuclear weapons if it came into conflict with the United States.

**Soviet Interests**

The Soviet interest in the survival of the PRC remained an important but not vital interest69 from 1950 until 1963, by which time both parties had informally terminated the alliance. 70 However, PRC vital interests included not just the survival of the regime on the mainland but also reunification with Taiwan, a goal that neither Stalin nor Khrushchev shared. 71

**Soviet Capabilities**

In the absence of statements from Chinese leaders indicating otherwise, I assume that the relevant military balance to Chinese assessments of the credibility of Soviet commitments was the nuclear balance with the United States. A secure Soviet second strike capability would have been sufficient to extend nuclear deterrence to China, unless the United States saw its interests in potential disputes with China as worth risking a Soviet nuclear attack upon the US homeland to defend, which did not appear to be the case. 72 The Soviet Union tested its first nuclear weapon in 1949 and probably did not develop a secure second-strike capability against the US homeland until the early 1960s. 73 However, the United States lost its ability to preemptively destroy all

---

69 Chen Jian’s assessment that North Korea’s fate “related to the security concerns of the Soviet Union, [but] did not affect the most vital Soviet interests” suggests a similar calculation for China: Chen, *China’s Road to the Korean War*, p. 161.
70 Chen, *Mao’s China and the Cold War*, p. 84.
Soviet nuclear forces after the mid-1950s.\(^74\) The United States had the ability to deliver nuclear weapons to the territory of the Soviet Union and its Warsaw Pact allies from at least 1948,\(^75\) while the Soviet Union was capable of delivering nuclear weapons to Western Europe using strategic bombers from the moment it successfully tested a nuclear weapon in 1949.\(^76\)

More important than the reality of the nuclear balance was how Chinese leaders perceived Soviet nuclear capabilities. Remarks from Chinese leaders in 1955 and 1957 indicate that they understood the nuclear balance during the 1950s was shifting in favor of the Soviet Union. Mao remarked that the Soviet launch of Sputnik in 1957 indicated a shift in the “correlation of forces”, both conventional and nuclear, such that the “East Wind” to prevail over the “West Wind”.\(^77\) Zhou remarked at an enlarged meeting of the CCP Central Committee Secretariat on 31 January 1955 that “it is possible to create the strength to oppose the use of nuclear weapons, because now both the United States and Soviet Union have nuclear weapons … if you use them we will also use them, there is no way for a war to proceed. Now there is the possibility of preventing the use of nuclear weapons.”\(^78\)

Scholars differ in their interpretations of what superpower mutual nuclear vulnerability meant for Soviet commitments to China, but again the evidence offered to support Chinese leaders’ purported perceptions is weak. Lewis and Xue argue that Chinese leaders perceived this as having “drastically lessened the threat of overt American aggression and the use of nuclear blackmail”, although they then refer to Mao’s optimism that the Soviet nuclear capability would embolden forces of national liberation.\(^79\) Christensen argues that the Soviet attainment of a secure second strike capability downgraded China’s contribution to Soviet security and increased Chinese leaders’ fears that the Soviets would abandon or exploit China. He cites Vice Minister of Defense Xiao Jinguang’s recollections that, when the Soviets demonstrated their new capabilities

---


\(^{77}\) See Lewis and Xue, *China Builds the Bomb*, p. 68.

\(^{78}\) Jin, *Biography of Zhou Enlai*, p. 1740.

\(^{79}\) Lewis and Xue, *China Builds the Bomb*, p. 68.
to a Chinese delegation in late 1957, “the Chinese felt relatively backward and resolved themselves to ‘struggle hard’ to close the gap between China and its ally”.  

Predictions
The Soviet interest in defending China remained a constant “important interest”, while its capability to deter a US nuclear attack on China increased from 1950 to 1960. H2.2 of current calculus theory would therefore predict that the credibility of Soviet alliance promises should have increased during that decade. However, China made a series of decisions to develop an independent nuclear weapons capability between 1950 and 1960, indicating that it was not willing to rely upon Soviet alliance commitments for its security. The reputation-based theory of alliance credibility predicts that decreases in Soviet reputation should prompt decision points at which China sought a dependent but hedging, and then an independent means to ensure its security. The provision of Soviet assistance should, however, increase its reputation. The pure threat explanation predicts that increases in Chinese threat perception from the United States should prompt nuclear decision points.

Data
The descriptions of each decision point below are drawn from official histories of the Chinese nuclear industry, People’s Liberation Army and Communist Party, and memoirs, biographies and chronologies of leaders and scientists present at those meetings. These sources do not provide a complete record of each meeting, so the speech evidence justifying the outcome of nuclear decision points is sparse. However, Soviets commitments to aid China were referred to in every decision point, making it more plausible to infer that Soviet alliance credibility and reputation were not discussed. Given the subsequent souring of Sino-Soviet relations, the authors of the various sources would not have had any incentive to censor unfavorable remarks about the Soviet Union.

The Decision Points
The independent variable and dependent variable codings at each decision point are summarized in Table 2 below. The five decision points in the China case include: a May 1952 Central

---

80 Christensen, Useful Adversaries, p. 206.
Military Commission meeting; a January 1955 meeting in which Chinese leaders decided to initiate a nuclear program; a 1957 request for nuclear weapons designs and a prototype from the Soviet Union; Mao’s rejection of the Soviet joint nuclear submarine fleet proposal in 1958; and the Politburo’s 1960 decision to continue the nuclear weapons program despite the withdrawal of Soviet aid. The most revealing alliance events for Chinese perceptions of Soviet reputation and therefore the credibility of its alliance commitments were the Soviet Union’s lack of timely military support for China at the beginning of the Korean War and 1954-5 Taiwan Straits Crisis. Soviet provision of political and economic support may have influenced Chinese assessments of the reliability of Soviet guarantees, but not sufficiently to outweigh the impact of these two events. China’s threat perception also varied between 1950 and 1960. China perceived an increasing threat from the United States from 1950 to 1958 due to the US entry into and conduct during the Korean War, including its nuclear threats; US pursuit of alliances in Asia and in particular the US-Taiwan defense pact of 1954; and US conduct leading up to and during the 1954-5 and 1958 Taiwan Straits crises, again including nuclear threats. China’s perception of the US threat had stabilized and moderated by 1959, following the second Taiwan Straits Crisis.  

Table 2 – Summary of IV and DV coding

<table>
<thead>
<tr>
<th>Decision Point</th>
<th>IV – Alliance Credibility</th>
<th>DV – Independence</th>
<th>Means of Acquisition</th>
<th>Hypotheses Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>Uncertain</td>
<td>Dependent</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>1952</td>
<td>Not credible</td>
<td>Dependent</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>1955</td>
<td>Not credible</td>
<td>Self-reliant</td>
<td>Dependent but hedging</td>
<td>H1.1 H3.1</td>
</tr>
<tr>
<td>1957</td>
<td>Not credible</td>
<td>Self-reliant</td>
<td>Dependent but hedging</td>
<td>H1.1 H3.1</td>
</tr>
<tr>
<td>1958</td>
<td>Not credible</td>
<td>Self-reliant</td>
<td>Dependent but hedging</td>
<td>H1.1 H3.1</td>
</tr>
<tr>
<td>1960</td>
<td>Not credible</td>
<td>Self-reliant</td>
<td>Self-reliant</td>
<td>H1.1 H1.4</td>
</tr>
</tbody>
</table>

81 See P F Iudin, “Report of Conversation with the General Secretary of the CC CCP, Deng Xiaoping,” May 27, 1959, Cold War International History Project Digital Archive; M Taylor Fravel, Strong Borders, Secure Nation: Cooperation and Conflict in China’s Territorial Disputes (Princeton: Princeton University Press, 2008) p. 228, 250-1. Christensen argues that Chinese leaders had already concluded that US alliances in Asia were defensive prior to the 1958 Taiwan Straits Crisis: Christensen, Useful Adversaries, p. 225.
1952 – Exploring the Nuclear Option

Chinese leaders did not initiate an independent nuclear weapons program at the May 1952 decision point but decided to remain dependent upon Soviet security guarantees. There is no evidence of how Chinese leaders justified this choice from the limited sources on the decision point. Prior to the decision point, Chinese threat perceptions of the United States intensified due to the US intervention in the Korean War, nuclear threats to China, and formation of alliances in the Asia-Pacific. Based on alliance events, Soviet alliance credibility should have declined sharply in late 1950 due to its delayed support to China during the Korean War, although its credibility should have recovered as substantial Soviet military aid flowed to China during the course of the conflict. I code these alliance events as a change in alliance credibility from uncertain in February 1950 to not credible in September 1950, which should have prompted a decision point to pursue an independent nuclear capability after September 1950. Changes in threat perception should have prompted a decision point following the US entry into the Korean War in mid-1950 and the first US nuclear threat to China issued in November 1950. Neither changes in threat nor reputation predict the timing or outcome of the 1952 decision point – both H1.1 and H3.1 predict that China should have sought an independent nuclear weapons capability. However, Chinese leaders approached the Soviet Union for assistance with nuclear weapons twice following the May 1952 decision point, suggesting that they did not perceive Soviet alliance commitments to defend China against US nuclear threats as credible.

Decision Point

In May 1952, members of the Central Military Commission (CMC) held a preliminary discussion about developing strategic weapons while formulating China’s five-year defense construction plan.82 Discussing the requirements for China’s defense should a large-scale war break out,83 CMC members decided that they needed more information about nuclear weapons before making a decision to initiate a nuclear program. I code the dependent variable at this decision point as dependent, but China showed sustained interest in acquiring nuclear weapons following this decision point.

---

83 The Complete Biography of Peng Dehuai, p. 1073.
Between May and mid-June 1952, following the CMC meeting, Premier Zhou consulted the Deputy Director of the Chinese Academy of Sciences, Zhu Kezhen, on the requirements for researching, testing and producing strategic weapons. Zhu recommended that the CCP bring together Chinese specialists capable of building nuclear weapons and purchase nuclear equipment or obtain it from the Soviet Union, but warned that the program would be very expensive. Zhou then asked the Soviet Union for assistance with a nuclear weapons program. The Soviets did not believe that China had the technological capacity in order to build strategic weapons and refused to discuss the supply of materials or specialists for a Chinese strategic weapons program. In a July 1953 report to Gao Gang, scientist Qian Sanqiang suggested that China follow up on requests he had made for Soviet assistance with nuclear research facilities that March, and develop nuclear facilities itself if Soviet assistance was not forthcoming. Gao responded that a nuclear energy program was a big and expensive undertaking, especially given China’s economic difficulties, but promised to convey the suggestion to the Central Committee. In late November, Peng Dehuai asked Gao if there was any way for China to catch up with US military technology within a decade, stating that, “we should have all of the weapons that the United States has (including nuclear weapons)” Peng questioned Qian Sanqiang on the feasibility of a nuclear energy program in August 1954, and supported Qian’s recommendations to prepare for nuclear weapons research in the Central Committee. In late September 1954, Peng told the head of the State Planning Commission, Li Fuchun, to request assistance with nuclear infrastructure, even at the expense of other programs, in talks with a Soviet delegation in early October.

In 1954, the Resources Ministry discovered a uranium deposit in Guangxi province. Uranium ore was first discovered in Guangxi in 1943, but it is not clear that the CCP leadership was aware of

---

85 Ge, Chronology of Qian Sanqiang, p. 103.
86 The Complete Biography of Peng Dehuai, p. 1078; see also Ge, Chronology of Qian Sanqiang, p. 105.
87 History of the PLA, p. 145.
89 The Complete Biography of Peng Dehuai, p. 1079; Wang, Chronology of Peng Dehuai, p. 577.
Mao responded to the news by declaring that China must develop nuclear energy. Chinese and Soviet leaders held high-level meetings on October 3, 1954, during which Mao requested Soviet assistance for a Chinese nuclear weapons program. As quoted above, a surprised Khrushchev assured Mao that all socialist countries were protected by the Soviet nuclear umbrella and did not need their own nuclear weapons. He recommended that China focus on economic development, emphasizing the cost of a nuclear program, but conceded that the Soviet Union could supply a small-scale nuclear reactor and train Chinese personnel.

During the same visit, Bukharin denied a request from Nie Rongzhen for Soviet assistance to develop a Chinese nuclear weapon. Following Khrushchev’s visit, on October 23, 1954, Mao told Indian Prime Minister Jawaharlal Nehru that China had “just started scientific research” on nuclear weapons.

**Threat Events: February 1950 – May 1952**

The US entry into the Korean War, deployment of the 7th fleet to the Taiwan Straits and crossing of the 38th parallel increased China’s perception that the United States sought to attack it or facilitate an attack from the Republic of China. These events came as a surprise to the Chinese leadership following US statements in January 1950 indicating that it did not intend to intervene in South Korea or the Chinese civil war. US threats to use nuclear weapons on China during the Korean War gave the US threat a distinctly nuclear flavor. On November 30, 1950, President Truman stated that the United States was prepared to use all weapons at its disposal in the Korean conflict. US pursuit of alliances with China’s neighbors also increased its threat

---

90 Lewis and Xue, *China Builds the Bomb*, p. 75.
91 Li et al (eds), *Contemporary China’s Nuclear History*, p. 12.
92 Shi Zhe, *Together with Historical Giants*, p. 572-3.
93 Nie Li, *High Mountains, Long River*, p. 175.
95 See Li et al (eds), *Contemporary China’s Nuclear History*, p. 4, Chen, *China’s Road to the Korean War*, p. 128.
97 Tong Zhao, “Nuclear Signaling and China’s Perception about Nuclear Threat: How China Handled Nuclear Threats in the Cold War,” Working Paper, Sam Nunn School of International Affairs, Georgia Institute of Technology, March 2011, p. 3-5.
perception in the early 1950s. In 1951 the United States formed an alliance with New Zealand and Australia, and Japan.

Alliance Events: February 1950 – May 1952

Two aspects of Soviet behavior during the Korean War would have damaged Chinese confidence in Soviet alliance commitments – its willingness to abandon North Korea and its delayed provision of air support to Chinese troops. In mid-September 1950, Stalin inquired as to whether Beijing would permit Kim Il-Sung to establish an exile government in China’s northeast, indicating that the Soviet Union was willing to let North Korea fall to the US-led coalition. This would have damaged Chinese confidence in the reliability of Soviet guarantees, especially given China’s goal of reunification with Taiwan. As Chinese leaders debated whether to enter the war or not in the first few weeks of October 1950, Stalin wavered on his earlier commitment to supply Chinese troops with air support, which was in the end forthcoming from November 1950. Mao sought and received Stalin’s support for all major strategic decisions during the campaign, including crossing the 38th parallel in January 1951, and to move to negotiations or continuing to fight in May-June 1951.

While it is difficult to weigh the net effect of Soviet behavior during the Korean War upon the credibility of its alliance commitments to China, Mao’s comments many years later offer some guidance as to how he interpreted Soviet actions. In 1956 Mao identified delayed assistance in the Korean War as one of Stalin’s mistakes, along with failing to support the CCP in the Chinese civil war. In January 1958 he cited the “ungenerous terms of Soviet assistance during the Korean War” to justify his assessment that the Soviet nuclear deterrent was an “unreliable” factor for Chinese security, indicating that the Korean War experience did have a net negative effect on the credibility of its extended nuclear deterrence commitments.

98 Fravel, Strong Borders, Secure Nation, p. 236.
100 Chen, Mao’s China and the Cold War, p. 55.
101 Chen, Mao’s China and the Cold War, p. 59-60.
102 Chen, Mao’s China and the Cold War, p. 65.
103 See Christensen, Useful Adversaries, p. 208.
1955 – Initiating a Nuclear Program

Chinese leaders initiated an independent nuclear weapons program on 15 January 1955 with the intention of independently deterring the United States, rather than catalyzing Soviet interference in a future conflict with the United States. The dependent variable coding for this decision point is self-reliant, although China’s means of acquisition was dependent but hedging. The speech evidence from Chinese leaders indicates that the US threat rather than a decline in Soviet alliance credibility prompted the decision. Chinese leaders sought Soviet assistance with a nuclear weapons program after that decision. The Soviet Union did not impose any conditions on its nuclear assistance that would have compromised the independence of the resulting capabilities, although China faced a trade off between its indigenous effort to develop a nuclear weapons capability and Soviet assistance to acquire the bomb as soon as possible.

Prior to the decision point, Chinese threat perception of the United States increased as the United States issued further nuclear threats during the Korean War, formed additional alliances on China’s periphery, including a defense pact with Taiwan in December 1954. Based on alliance events, the independent variable is coded as not credible. During Khrushchev’s visit to China in October 1954, he did not assure Chinese leaders that its nuclear umbrella extended to China’s attempts to prevent a permanent separation from Taiwan during the 1954-5 Taiwan Straits crisis, exposing an important divergence in Soviet and Chinese interests. This realization, as well as the formation of the US-Taiwan alliance in December 1954 should have prompted a nuclear decision point to pursue an independent nuclear capability. Both H1.1 and H3.1 predict the timing and outcome of the January 1955 decision point. Both Luthi and Christensen connect the lack of Soviet support during the 1954-1955 Taiwan Straits crisis and the 1955 nuclear decision point. However the lack of speech evidence regarding alliance credibility from the 1955 decision point, and the fact that China was already asking the Soviet Union for nuclear assistance prior to the crisis, suggests that by October 1954 the Soviet nuclear umbrella was already not credible.

Decision Point

On January 15, 1955, in the midst of the 1954-5 Taiwan Straits crisis, Mao Zedong called an enlarged meeting of the Central Committee at which he decided that China should develop

104 See Luthi, The Sino-Soviet Split, p. 35; Christensen, Useful Adversaries, p. 205.
nuclear energy. Nuclear scientists Li Siguang and Qian Sanqiang explained the basic science behind nuclear weapons, and reported upon the state of China’s nuclear capabilities and the feasibility of developing nuclear energy. Mao then announced that it was time for China to acquire a nuclear energy program. Although he emphasized that China was capable of developing nuclear energy on its own, given that it had the uranium and scientific expertise to do so, he acknowledged that China could take advantage of Soviet assistance.\footnote{Li et al (eds), Contemporary China’s Nuclear History, p. 13-4.} He also explained his comments in 1946 that nuclear weapons are a paper tiger. Those comments were “strategically motivated” to counter the psychological impact of US nuclear tests and oppose “boasting about the miraculous nature of nuclear weapons” and their use to frighten “decent peoples”. China could destroy the “insufferable arrogance” of those who wielded nuclear weapons by acquiring its own weapons.\footnote{Lu and Fan, Zhang Aiping and the Two Bombs and Satellite, p. 18.} Mao’s remarks strongly suggest that the US threat, rather than a loss of Soviet alliance credibility, drove China’s decision to acquire an independent nuclear capability.

Mao’s speech evidence is supported by speech evidence from Zhou Enlai during his meeting with the two nuclear scientists the day before. Zhou justified China’s pursuit of nuclear weapons by reference to US nuclear threats during the Korean War and the possible use of nuclear weapons over Taiwan. His remarks also suggest that the discovery of uranium in China in 1954, rather than threat or alliance considerations, determined the timing of the decision point. Premier Zhou said, “since the Korean War, the United States has continuously engaged in undisguised nuclear blackmail. Korean War General Macarthur has called for the nuclear bombing of Chinese air bases and other sensitive locations.” In addition to mentioning concrete US military plans to use nuclear weapons in the Korean War against China, Zhou spelled out the implications of the US-Taiwan pact: “if they [the US and Taiwan] must protect the Jinmen coast, they have the power to use nuclear weapons.”\footnote{Lu and Fan, Zhang Aiping and the Two Bombs and Satellite, p. 17.} Zhou noted that the CCP Central Committee agreed that China needed nuclear weapons, but to date had not been able to focus on a nuclear weapons program, and did not have some of the required materials. But since the discovery of uranium in 1954, “now the situation is no longer the same.”\footnote{Lu and Fan, Zhang Aiping and the Two Bombs and Satellite, p. 17.}
Chinese leaders did not make an explicit decision to build a nuclear weapon at this meeting, but both Zhou and Mao’s remarks above, and subsequent statements and decisions of Chinese leaders indicate that the 15 January decision was indeed a political decision to acquire nuclear weapons. At a meeting of the State Council on January 31, 1955, Premier Zhou stated that China sought nuclear weapons to counter US nuclear coercion, “the United States wishes to use terror to frighten us, but we will not be frightened.”109 In February 1955, Peng Dehuai recommended to the Central Committee that China “gradually research and strive for the production of nuclear weapons”.110 The first official written record of China’s decision to build nuclear weapons appeared in Peng Dehuai’s report on China’s national defense strategic guidance and defense construction in March 1956, which was approved by an enlarged meeting of the CMC and endorsed by Mao and the Central Committee.111

Zhou’s first steps to implement the 1955 decision also indicate that the Soviet Union was viewed as a facilitator of, rather than reason for, the decision to acquire a nuclear capability. On January 31, Zhou asked the State Council to endorse Soviet aid to China’s peaceful nuclear program.112 He weighed the need to uphold the principle of self-reliance and create a foundation of indigenous nuclear scientific and technological strength against the opportunity to rapidly build up China’s nuclear infrastructure with Soviet assistance. Accepting Soviet assistance was not reliance upon the Soviet Union but an opportunity for cutting edge technology transfer.113 Soviet assistance, which Zhou sought and received in January 1955, altered the order and structure of China’s nuclear weapons program. For example, China built its uranium processing facilities out of order because it expected that the Soviet Union would provide the fissile material for its first nuclear weapon.114

109 Jin, Biography of Zhou Enlai, p. 1740.
111 Nie Li, High Mountains, Long River, p. 177.
112 Jin, Biography of Zhou Enlai, p. 1740.
113 Jin, Biography of Zhou Enlai, p. 1741-2.
114 Lewis and Xue, China Builds the Bomb, p. 41, 89-90.
Threat Events: June 1952 – January 1955

Following the May 1952 decision point, the United States threatened China with nuclear weapons in December 1952 and the spring and summer of 1953.\(^{115}\) The United States continued to form alliances with China’s neighbors during this period,\(^{116}\) including South Korea in 1953 and the Southeast Asia Treaty Organization states in September 1954.\(^{117}\) The most significant alliance in the region for Chinese threat perception was, however, the US-Taiwan mutual defense pact.

From early 1953 onwards, the US took a number of steps to increase support for the Guomindang militarily and promised not to restrain it from attacking the PRC.\(^{118}\) By mid-1954 the United States and Taiwan were publicly discussing a mutual defense pact, which China interpreted as seeking to permanently divide China, following the example of Vietnam and Korea at the 1954 Geneva Conference.\(^{119}\) On August 11, 1954, China attacked a number of Taiwanese offshore islands to signal its opposition to the pact,\(^{120}\) and to try to prompt a resolution of the Taiwan question.\(^{121}\) The US-Taiwan pact was signed on December 2, 1954.

Alliance Events: June 1952 – January 1955

Soviet assistance to China during this period should have improved its reputation, except for its lack of support for China’s actions in the Taiwan Straits crisis of 1954-5. This exposed an important divergence of Soviet and Chinese interests over Taiwan and therefore a large gap in the nuclear umbrella. The independent variable coding for this period is not credible and

\(^{115}\) President-elect Eisenhower communicated the December 1952 threat in December 1952 while the 1953 threats resulted from media reports indicating that the US was considering using tactical nuclear weapons in Korea and had dispatched nuclear weapons to the relevant naval and air commands. Nie Li, *High Mountains, Long River*, p. 174-5; Zhao, “Nuclear Signaling and China’s Perception about Nuclear Threat”, p. 3-5. Zhao argues that Eisenhower’s attempt to communicate a nuclear threat to China in May 1953 was not clearly received: p. 4-5.


\(^{117}\) SEATO member states included Australia, New Zealand, France, the UK, the Philippines, Thailand and Pakistan.

\(^{118}\) Those steps included joint exercises, substantial military aid and a military cooperation agreement. See Fravel, *Strong Borders, Secure Nation*, p. 235.


\(^{120}\) Lewis and Xue, *China Builds the Bomb*, p. 34

\(^{121}\) Luthi, *The Sino-Soviet Split*, p. 35.
Khrushchev’s 1954 visit should have prompted a decision point to pursue an independent nuclear capability. Although the Soviet Union invested heavily in the Chinese economy between 1950 and 1953, once the Korean War concluded the Soviet Union asked China to pay for the military support it had provided, which to the Chinese “made the Soviets seem more like arms merchants than genuine Communist internationalists”.¹²² In September and October 1954 Khrushchev visited China for the 5th anniversary of the People’s Republic. He marked the occasion by transferring the Soviet naval base in Lushun and all of its equipment to China, relinquishing Soviet shares in Sino-Soviet joint ventures, providing a substantial loan,¹²³ and offering a substantial amount of conventional military equipment and expertise.¹²⁴ However Khrushchev did not promise Soviet support if the United States retaliated for the bombardment of the Taiwanese coastal islands with nuclear weapons,¹²⁵ despite reassuring China that it did not need nuclear weapons because of the Soviet nuclear umbrella.¹²⁶ The lack of Soviet nuclear protection during the first Taiwan Straits crisis would have outweighed the positive effect of Soviet assistance upon its reputation.

1957 – A Prototype Weapon

In 1957 Chinese leaders chose to seek Soviet assistance with producing a nuclear weapon in addition to existing Soviet peaceful nuclear assistance. The dependent variable coding of this decision point is self-reliant, as the Soviets promised assistance without conditions. Speech evidence from Chinese leaders indicates that this decision point was opportunistic – they did not justify their request by reference to changes in the credibility of Soviet security guarantees or threat perception. The means of acquisition remained dependent but hedging, and there is speech evidence that Soviet past actions deepening education exchanges on missile technology prompted Chinese leaders to approach the Soviets for more assistance. Before the decision point, Chinese threat perception increased as the US issued further nuclear threats during the 1954-5 Taiwan Straits crisis, decreased once that crisis concluded, but increased again in early 1957 when the United States deployed tactical nuclear weapons to Taiwan. Alliance events prior to the

¹²² Chen, Mao’s China and the Cold War, p. 61.
¹²³ Chen, Mao’s China and the Cold War, p. 62.
¹²⁴ Lewis and Xue, China Builds the Bomb, p. 26.
¹²⁵ Lewis and Xue, China Builds the Bomb, p. 26; Luthi, The Sino-Soviet Split, p. 35.
¹²⁶ Shi Zhe, Together with Historical Giants, p. 572.
decision point should have increased the credibility of Soviet commitments as the Soviet Union provided security assurances and extensive military and nuclear assistance. But speech evidence from Peng Dehuai in 1955 indicates that this assistance did not in fact improve Soviet reputation, so the independent variable coding is not credible. The March 1955 US nuclear threat and March 1957 introduction of tactical nuclear weapons into Taiwan should have prompted nuclear decision points according to H3.1, but neither threat nor reputation events predict the timing or outcome of the 1957 decision point.

**Decision Point**

In September 1957, a Chinese delegation led by Nie Rongzhen traveled to Moscow to request Soviet assistance with China’s nuclear weapons program. Khrushchev’s de-Stalinization speech had damaged his legitimacy in the communist world. He showed an interest in renewing close ties with China in order to improve his international and domestic position. The Soviet Union allowed Chinese students to study its latest guided missile technology in early 1957, which encouraged Nie to press for further nuclear assistance. Nie took advantage of Khrushchev’s weakness to advance China’s nuclear program, approaching the Soviet Union for nuclear assistance with Premier Zhou’s approval. In the resulting October 1957 agreement, the Soviet Union promised to assist China with nuclear weapons production, uranium enrichment, guided missiles, and strategic bomber aircraft. Russian records of discussions between the Chinese and Russian delegations in Moscow in 1957, at least with regard to rockets, indicate that the Soviets placed no conditions on the transfer of these technologies. While the Soviet negotiators acknowledged the unprecedented nature of the treaty and remarked that China was the Soviet Union’s most reliable and trusted friend, Nie saw the agreement with the Soviet Union as reducing the amount of time China would take to develop its strategic weapons program.

---

127 Nie Li, *High Mountains, Long River*, p. 185.
Soviet friendly overtures towards China were used to extract from it rather than a cue that its reputation had improved and therefore its security guarantee had regained credibility.  

**Threat Events: February 1955 – September 1957**

The first Taiwan Straits crisis continued following the January 1955 decision point. On March 8, 1955, after China had seized the Dachen and Yijiangshan Islands, Secretary of State Dulles publicly stated that the United States was willing to use nuclear weapons against China. In spring 1955, China and the United States began ambassadorial talks over the status of Taiwan in Geneva, but in March 1957 the United States deployed tactical nuclear weapons into Taiwan, increasing China’s threat perception from the United States.

**Alliance Events: February 1955 – September 1957**

Sino-Soviet strategic cooperation increased between 1955 and 1957. As important as this cooperation was for China’s national defense, it appeared not to have mitigated the reputational effects of Soviet actions in military crises during the Korean War and 1954-5 Taiwan Strait crisis. Increased cooperation also revealed differences in Soviet and Chinese strategic preferences. I code the independent variable for this period as not credible, weighing the outcome of Defense Minister Peng’s visit to Moscow more heavily than Soviet assistance during this period.

As described above, Khrushchev affirmed Soviet commitments to defend East Asia and China’s coastlines with advanced weaponry to Peng Dehuai at the Warsaw Pact conference in May 1955. During that meeting Peng learned that the Soviets had abandoned a strategy of active defense that it had previously shared with the PRC, and now relied heavily upon nuclear weapons. Peng received no answers as to the pressing question for China of how it would

---

131 The agreement was also in the end opportunistic on the part of the Soviet Union, which delayed and then reneged on its promises of nuclear assistance once Khrushchev’s domestic position improved: see Christensen, *Useful Adversaries*, p. 206; Zhang, “Between ‘Paper’ and ‘Real Tigers,’” p. 206.


134 Zhang, “Between ‘Paper’ and ‘Real Tigers,’” p. 205-6, citing Liu Xiao, *Chushi Sulian Banian* [My Eight-Year Ambassadorship in the Soviet Union] (Beijing, 1986). Zhang notes that Peng’s response to Khrushchev’s offer, a proposal on Sino-Soviet strategic cooperation, had yet to be declassified at the time of writing.
cooperate with the Soviet Union in war. He returned to Beijing and recommended that China draw up two contingency plans for major war – a false one to show Soviet military advisers, and a real, independent Chinese plan. Khrushchev also offered to show Peng a Soviet ballistic missile submarine, stating that the Soviets “didn’t keep secrets from their Chinese comrades,” but the Soviets later retracted this offer. Peng’s biography indicates that he was “extremely resentful” which “strengthened his conviction to develop [China’s] independent capacity to produce weapons”. China also expressed concern at Soviet intervention in the Polish and Hungarian uprisings in 1956.

In late 1957 the Soviets and Chinese reached an agreement to cooperate on air and naval forces. The Soviet Union provided China with extensive assistance for its nuclear weapons program during this period, and upheld many of those commitments until 1959. Four of the six agreements forming the foundation of Sino-Soviet nuclear cooperation were made during this period: a general commitment to provide assistance on January 17, 1955, to construct a heavy water reactor and particle accelerator on April 27, 1955, to assist the Chinese nuclear industry on August 17, 1956, and to assist with uranium mining on December 19, 1956.

1958 – China Rejects Joint Nuclear Forces

In August 1958, Chinese leaders rejected a Soviet proposal to create a joint nuclear submarine fleet. The Soviets made this offer in response to a Chinese request for Soviet assistance with submarines capable of launching nuclear weapons. The dependent variable is coded as self-reliant. This decision point provides the clearest evidence that Chinese leaders were not willing to compromise the independence of their nuclear capability in order to expedite their acquisition of a more sophisticated deterrent. Although Chinese leaders rejected conditional assistance with a sea-based nuclear platform at this point, they continued to accept extensive Soviet assistance with nuclear weapons development, so the means of acquisition for this point remained dependent but hedging. Speech evidence from this decision point indicates that China rejected the Soviet proposal not because it lacked credibility, but because Chinese leaders were unwilling

---

135 The Complete Biography of Peng Dehuai, p. 1075.
136 Wang, Chronology of Peng Dehuai, p. 596.
137 The Complete Biography of Peng Dehuai, p. 1080.
138 Chen, Mao’s China and the Cold War, p. 69.
to cede control over their nuclear capabilities to the Soviet Union. Mao referred to Soviet past actions in order to justify his suspicion that the Soviet Union sought to control China. The only threat event in the 11 months between the 1957 and 1958 decision points was China’s perception that the United States had downgraded the diplomatic status of talks over Taiwan, which would have prompted a decision point after December 1957. Alliance events during this period would have improved Soviet reputation following the 1957 strategic weapons cooperation agreement, but any gains would have been short-lived as the Soviets only partially delivered on those commitments. The independent variable coding for this period is therefore not credible. The Sino-Soviet disagreement over the Soviet long-wave radio proposal disagreement would have prompted a nuclear decision point after April 1958. H1.1 predicts the timing and outcome of this decision point, while H3.1 only predicts the outcome.

**Decision Point**

The Soviet Union attempted to impose conditions on nuclear technology transfer to China for the first time in 1958, proposing a joint submarine fleet in response to Chinese requests for assistance with nuclear submarine production.\(^{139}\) The Chinese interpreted this proposal as a Soviet attempt to ensure access to China’s coastline for its own submarine fleet.\(^{140}\) Mao responded that he was not interested in a Sino-Soviet “joint military cooperative”.\(^{141}\) In August 1958, Mao again requested assistance from Khrushchev for China’s nuclear submarine program, to which Khrushchev responded that China and the Soviet Union develop a joint submarine fleet. Mao then declared that China would develop its own nuclear submarines even if it took 10,000 years.\(^{142}\) Mao’s remarks clearly indicate that at this decision point, Chinese leaders had no interest in accepting restrictions upon their nuclear delivery platforms in return for Soviet assistance. Mao interpreted the proposal as a Soviet attempt to control China militarily and yet another example of Soviet “big power chauvinism” in its relations with China, a perception Mao justified by reference to Soviet past actions that revealed its intention to control China.\(^{143}\)

---

\(^{139}\) Nie Li, *High Mountains, Long River*, p. 319.


\(^{141}\) Chen, *Mao’s China and the Cold War*, p. 74.

\(^{142}\) *History of the PLA*, p. 59.

\(^{143}\) Chen, *Mao’s China and the Cold War*, p. 74.
In January 1958, in a private conversation, Mao called Soviet nuclear weapons “unreliable” to counter imperial states’ nuclear weapons, which were a “real tiger” until China acquired its own nuclear weapons, at which point they would become a “paper tiger”. He pointed out that the Soviet Union had fallen short on the dollar amount of loans promised in the 1950 treaty in exchange for Soviet privileges along China’s northern border. Mao’s interlocutor pointed out that the Soviet Union had not dared to enter the Korean War, to which Mao replied that they “far more than just did not dare to enter” the Korean War – but charged China market rates for Soviet weapons and the living expenses of Soviet intelligence officers.\footnote{Quan Yanchi, Mao Zedong yu Heluxiaofu: 1957-9 Zhongsu Guanxi Jishi [Mao Zedong and Khrushchev: The True Records of 1957-9 Sino-Soviet Relations] (Changchun: Jilin People’s Press, 1989) p. 95-7.} Although this private speech evidence did not emerge during a decision point, it conforms exactly to the predictions of H1.1 and H1.4 that breaking alliance commitments regardless of issue area damage the credibility of security guarantees, and provides persuasive speech evidence that the theory accurately describes how decision-makers assess alliance credibility.

**Threat Events: October 1957 – August 1958**

In December 1957, China perceived that the United States had downgraded the diplomatic status of talks over Taiwan, increasing China’s threat perception from the United States.\footnote{Fravel, *Strong Borders, Secure Nation*, p. 244.}

**Alliance Events: October 1957 – August 1958**

The Soviet Union repeatedly delayed the delivery date for the nuclear weapon prototype and designs it had promised in the 1957 agreement,\footnote{Li et al (eds), *Contemporary China’s Nuclear History*, p. 19-22.} having secretly decided in early 1958 not to honor the agreement.\footnote{Lewis and Xue, *China Builds the Bomb*, p. 61.} In November 1957, Khrushchev discussed the withdrawal of Soviet experts working in China with Mao.\footnote{Christensen, *Useful Adversaries*, p. 207.} He also said “Whatever socialist country might receive an attack by the imperialists, we will quickly retaliate against them” to which Mao responded, “This way of talking is incorrect. Every country is independent. You must first see if they have invited
Mao effectively refused an unconditional security assurance that went beyond the terms of the Sino-Soviet alliance. Chinese leaders also expressed dissatisfaction at the military equipment provided by the Soviet Union. In June 1958, Peng Dehuai said, “the Soviet Union will not divulge its trade secrets in its military technology cooperation with us, they research new technologies and give us old ones, we must manage on our own, we can’t just rely on our older brother”. Mao interpreted an April 1958 Soviet proposal to build a long-wave radio transmission center and receiving station in China as a Soviet attempt to undermine Chinese sovereignty.

1960 – Soviet Withdrawal of Assistance

The January 1960 decision point re-affirmed China’s decision to pursue a fully independent nuclear weapons program as the Soviet Union withdrew its nuclear assistance, and marked China’s transition to a fully independent means of acquiring that capability. The dependent variable coding for both China’s deterrent and means of acquisition is self-reliant. This is the only decision point supporting the interdependence of alliance commitments predicted by H1.4. There is speech evidence that Chinese leaders justified their shift to an independent means of acquisition by reference to a decline in Soviet reputation, but they again do not refer to the credibility of Soviet defense commitments. China’s threat perception increased initially in the period from August 1958 to January 1960 due to the US response to the August 1958 Taiwan Straits crisis, however its perception of the US threat then stabilized from 1959 onwards. Threat perception would predict a decision point in late 1958. Soviet reputation declined precipitously in this period and the independent variable coding for this period is not credible. Alliance events would predict nuclear decision points at some stage prior to August 1958, when Premier Zhou indicated to Khrushchev that China did not rely on the Soviet nuclear umbrella; after the Soviets reneged on the nuclear bomb transfer agreement in June 1959; and after an acrimonious meeting in October 1959. H1.1 predicts the outcome and timing of the 1960 decision point.

150 Although Peng realized that the Soviet Union had been supplying China with obsolete military equipment much earlier, in 1955. The Complete Biography of Peng Dehuai, p. 1082.
151 Chen, Mao’s China and the Cold War, p. 73-4.
Decision Point

In January 1960, the Politburo made an emergency decision to continue with China’s nuclear weapons program following the withdrawal of Soviet aid. During the meeting, Nie itemized unfulfilled Soviet commitments to assist China’s strategic weapons program. He concluded that its technical assistance had become unreliable.\(^\text{152}\) He attributed this to a Soviet intention to maintain a gap between China and the Soviet Union in state-of-the-art weaponry, providing China only with obsolete or near-obsolete technology, and keeping it in a state of dependence.\(^\text{153}\)

Threat Events: August 1958 – January 1960

China initiated another Taiwan crisis by shelling Jinmen Island on August 23, 1958, with mixed motives of mobilizing domestic public opinion around the Great Leap Forward, asserting its claim to Taiwan, and testing US resolve.\(^\text{154}\) The United States publicly stated that it would defend the Taiwanese coastal islands on September 4, but Premier Zhou agreed to renewed talks with the United States on September 6 and a ceasefire in early October 1958. China’s threat perception stabilized in 1959 following the second Taiwan Straits crisis as Chinese leaders came to believe that the United States did not intend to facilitate an attack on the mainland.\(^\text{155}\)

Alliance Events: August 1958 – January 1960

China’s involvement in a number of military crises between 1958 and 1960 exposed the differences in Chinese vital interests and Soviet interests. Chinese leaders learned that Soviet security assurances were clearly not credible. China initiated the 1958 Taiwan Straits crisis without notifying the Soviet Union\(^\text{156}\) and had been planning the attack during Khrushchev’s visit. Following Premier Zhou’s assurances that China would take responsibility for the consequences of the attack on Jinmen Island without dragging the Soviet Union in, Khrushchev issued two statements supporting China in September, but was very concerned that China’s

\(^{152}\) Lewis and Xue, *China Builds the Bomb*, p. 72.

\(^{153}\) Nie Li, *High Mountains, Long River*, p. 200.


\(^{155}\) See Iudin, “Report of Conversation with the General Secretary of the CC CCP, Deng Xiaoping;” Fravel, *Strong Borders, Secure Nation*, p. 228, 250-1. Christensen argues that Chinese leaders had already concluded that US alliances in Asia were defensive prior to the 1958 Taiwan Straits Crisis: Christensen, *Useful Adversaries*, p. 225.

\(^{156}\) Chen, *Mao’s China and the Cold War*, p. 75-7.
actions could have sparked a US-Soviet conflict.\textsuperscript{157} On June 29, 1959 the Soviet Union informed China that it would not provide a prototype nuclear weapon and designs to China, and by 1960 had recalled all Soviet experts from China.\textsuperscript{158} The Soviet Union refused to take China’s side in a conflict with India over the Sino-Indian border. On October 2, 1959, Chinese leaders met with Khrushchev, who criticized them for both the Indian conflict and the 1958 Taiwan Straits crisis.\textsuperscript{159}

\textbf{Summary}

\textit{Decision Point Outcomes}

H1.1 of the reputation-based theory correctly predicts the outcome of all nuclear decision points, except for 1952. None of the decision points conform to the predicted outcome of H2.2 of the current calculus theory. The credibility of Soviet commitments to defend China should have increased in tandem with Soviet capabilities, but China instead pursued its nuclear weapons program with increasing determination. Most decision points are consistent with the predictions of H3.1 of the threat-based explanation of proliferation, except for 1952 and 1960. As the US threat stabilized following the 1958 Taiwan Straits crisis, any decision point should have resulted in a lower commitment to an independent Chinese deterrent. H1.4 of the reputation-based theory, the interdependence of alliance commitments, performs poorly. If alliance commitments are interdependent, China should not have consistently pursued a dependent but hedging means of acquisition for a self-reliant nuclear capability from the same ally.

\textit{Decision Point Timing}

The reputation-based theory (H1.1) performed slightly better than the threat explanation (H3.1) in predicting the timing of nuclear decision points. US nuclear threats in early 1955 and Khrushchev’s exclusion of Taiwan from the nuclear umbrella in late 1954 predict the January 1955 decision point. US diplomatic action over Taiwan and deployment of tactical nuclear weapons in 1957 predict the timing of the September 1957 decision point, although this is probably coincidental given China’s opportunistic motivations. The suite of broken Soviet commitments from June to October 1959 predicts the January 1960 decision point.

\textsuperscript{158} Chen, \textit{Mao’s China and the Cold War}, p. 78, 83.
\textsuperscript{159} Chen, \textit{Mao’s China and the Cold War}, p. 80-1.
**Decision Point Speech Evidence**

The available speech evidence from the nuclear decision points indicates that Chinese leaders justified the pursuit of nuclear weapons by reference to the US threat rather than the lack of credibility of Soviet commitments. Nuclear decision points do not, therefore, provide an opportunity to examine whether reputation was marshaled as evidence of the credibility of Soviet defense commitments. In addition, Chinese leaders only justified their decisions to rely or not rely upon Soviet assistance by reference to its reputation at two of the four decision points following the initiation of China’s nuclear weapons program in 1957 and 1960. The speech evidence at the 1955 decision point indicates that China’s capacity to pursue nuclear weapons influenced the timing of that decision point. Speech evidence at the 1958 decision point indicates that the outcome was driven by China’s desire to deny the Soviet Union coercive leverage through accepting conditional cooperation.

**Interpreting the Evidence**

The most likely explanation for these findings is that Chinese leaders were uncertain as to the credibility of the Soviet nuclear umbrella in 1950. The delay in Soviet air support at the beginning of the Korean War indicated to Chinese leaders that this commitment was not credible and the Soviet Union was unlikely to extend its nuclear umbrella to protect China’s vital interest in reunification with Taiwan. This perception was confirmed by the lack of Soviet support during the 1954-5 Taiwan Straits crisis. The lack of overlap in Chinese and Soviet interests was well understood by January 1955 and did not warrant discussion during that decision point. This would explain Chinese requests for Soviet assistance with nuclear weapons in 1952 and 1954, and the timing of the 1955 decision point, following China’s discovery of uranium deposits, as Soviet assistance prior to 1955 was not forthcoming. The case does suggest that, at least some of the time, leaders assess the credibility of alliance commitments as the reputation-based theory predicts. Reputation affects alliance credibility, as indicated by Mao’s comments in 1958 regarding the credibility of the Soviet deterrent, Peng’s resolution to build nuclear weapons after the Soviets refused to show him their nuclear submarines, and Nie’s reference to Soviet reputation for assistance in the 1957 and 1960 decision points. However, with the exception of
Mao’s comments, allies senior partners’ reputations for security guarantees and military assistance are separate and independent.

It is possible, however, that the Soviet nuclear umbrella was never credible to Chinese leaders, who sought only conventional security assurances and assistance from the alliance. Zhou’s insistence that the “by all means at its disposal” clause be included in the treaty text and Chinese public acknowledgment of the Soviet nuclear umbrella cast some doubt on this interpretation. Another alternative is that China’s delay in seeking nuclear weapons between 1950 and 1955 was due to its learning of the significance of nuclear weapons to its security affairs in the 1950s. China’s interest in Soviet nuclear weapons during the alliance negotiation casts doubt on this explanation, although this “nuclear” learning may have interacted with Chinese learning about Soviet alliance credibility and the US threat. A final option is that some other “threat plus” variable identified in the nonproliferation literature explains China’s nuclear proliferation decision. Supply side factors, in particular the discovery uranium deposits and the repatriation of Chinese scientists and engineers do not explain China’s demand for nuclear weapons, but may explain the timing of the 1955 decision point. A status explanation would not explain why China waited until 1955 to initiate a nuclear weapons program and sought Soviet assistance. There is little evidence at the nuclear decision points that inter-elite competition within the CCP between 1950 and 1960, including the purge of Peng Dehuai in August 1959, \(^\text{160}\) affected China’s decision to proliferate rather than rely upon the Soviet Union.\(^\text{161}\)

The NATO Cases

The Alliance

The basis of US alliance commitments to France and the FRG was the 1949 North Atlantic Treaty, which placed France and the FRG under the protection of US nuclear weapons deployed in Europe. Article 5 of that treaty commits each member to assist one another in the event that they are attacked. This included a US extended nuclear deterrence commitment to NATO


\(^{161}\) In 1961 Chinese leaders seriously considered aborting the nuclear weapons program. Elite political competition was critical to the survival of the nuclear program thereafter: see Lewis and Xue, *China Builds the Bomb*, p. 129-134
members. The French case extends from 1949 when France joined NATO, until 1963, when it rejected a US proposal for conditional nuclear assistance with its sea-based deterrent. It made the political decision to acquire a nuclear weapon in April 1958. The German case extends from 1954, when the FRG joined NATO in exchange for a commitment not to develop nuclear weapons, until 1963, when the FRG ratified the Partial Test Ban Treaty, which effectively committed the FRG to remain a non-nuclear state.

**Interests and Capabilities**

Between 1949 and 1963, the United States lost its nuclear superiority vis-à-vis the Soviet Union. However, the United States should still have had a sufficient capability to defend Europe against a Soviet attack under conditions of mutual vulnerability, unless the Soviet Union held vital interests in the conquest of Europe for which it was willing to risk a nuclear strike on its homeland. The survival of France and the Federal Republic was most likely an important interest to the United States. The survival of West Germany may, however, have been closer to a vital interest, as Soviet domination of both East and West Germany would have resulted in Soviet domination of two key economic regions of the world. However, unlike the FRG, French vital interests extended beyond the survival of the state to its colonial possessions. As such, H2.2 of current calculus theory would predict that the credibility of US alliance commitments to France should have declined. Its commitment to the FRG would only have remained credible if the FRG was aware that it was a vital interest to the United States. The reputation-based theory would predict that the United States kept alliance commitments to the Federal Republic (H1.3), but broke alliance commitments to France (H1.1). The threat-based explanation (H3.1) predicts that both states, but especially the FRG, should have pursued nuclear weapons in this period. Their perceptions of the Soviet threat should have increased following a series of Soviet actions, including the Berlin crises in 1948-9, 1958 and 1961; the Soviet suppression of uprisings in Hungary and Poland in 1956; and the Cuban Missile Crisis in 1962.

---

Alliance Events – France

Existing scholarship suggests that US reputation was an important influence upon French decisions to pursue nuclear weapons in 1954 and 1958. Prior to 1954, the French military was content to rely upon US alliance commitments. Their perceptions began to change following the US failure to intervene in support of French forces in Indochina in 1954, coupled with a realization that US nuclear superiority would eventually fade away. The US did not support French attempts to hold on to its colonial possessions in Indochina in 1954, Suez in 1956, Tunisia, Morocco and Algeria in 1957-8, indicating that France could not rely upon US support for the defense of “peculiarly French” national interests. France also sought to regain influence over NATO decision-making through the acquisition of an independent nuclear capability. Reputation continued to affect French assessments of the credibility of US extended deterrent commitments into the Fifth Republic, established in October 1958. When asked by President Eisenhower in September 1959 how he could doubt the US commitment to defend France, Charles de Gaulle acknowledged the US vital interest in European security, “But before the day of reckoning, what would become of my country?” He then noted that in both previous World Wars, the United States had intervened too late to save France, concluding that a nation “can help another, but it cannot identify itself with another”. These perceptions determined De Gaulle’s decision to reject a US offer to provide France with Polaris missiles, with restrictions, in 1963.

164 The Mendes-France government initiated a nuclear weapons program in December 1954, but the government was overturned before the decision could be implemented. In April 1958, the Gaillard government re-initiated the program, which was continued from then onwards into the Fifth Republic.
167 Kohl, French Nuclear Diplomacy, p. 41-43; Mongin, “The Genesis of French Nuclear Weapons”.
Alliance Events – Federal Republic of Germany

US reputation was also an important influence upon the FRG decision to forgo nuclear weapons. In December 1956 Defense Minister Strauss requested that the United States expand sharing of tactical nuclear weapon delivery vehicles at a North Atlantic Council meeting, which Kelleher describes as part of a European reaction to US actions in the Suez crisis, the 1956 Radford crisis in which the US had proposed to exchange US troops stationed in Germany for nuclear weapons, and the Soviet reaction to the Hungarian uprising. In 1963, Adenauer signed a treaty with France that hinted at Franco-German collaboration regarding nuclear weapons, to signal his opposition to US negotiations with the Soviet Union over the status of Berlin that would prevent the FRG from acquiring nuclear weapons. This was not the first time that the FRG had used nuclear collaboration with France as leverage over the United States – it had also done so in 1958, signaling an intention to move towards a dependent but hedging posture. The FRG signed the Partial Test Ban Treaty in 1963, effectively committing itself to non-nuclear status, as a quid pro quo for a more or less permanent US troop presence. German doubts about its acceptance of non-nuclear status and the permanence of US troop deployments persisted into the mid-1960s. Kelleher notes that Adenauer was perpetually worried about US abandonment or sudden withdrawal of US forces, which were believed to be the FRG’s only direct guarantee of US willingness to use all means to defend German territory.

Summary of Cases

A comparison of all three cases yields further insights about the nature of alliance credibility. Both China and France decided to acquire nuclear weapons once their patrons revealed that their security guarantees did not extend to their vital but extraterritorial interests. Both France and China were concerned that depending upon their senior allies left them vulnerable to both

170 Gerzhoy examines the West German case in detail and finds that West German non-proliferation can be explained by its dependence on the United States, which the United States leveraged, using conditional threats to withdraw protection if the Federal Republic pursued nuclear weapons: Gerzhoy, “Go Your Own Way”.
172 Kelleher, Germany and the Politics of Nuclear Weapons, p. 132. The treaty was ratified with major modifications supporting NATO after the United States pressured German politicians to choose between their partnership with France and the United States: Trachtenberg, A Constructed Peace, p. 346, 371.
173 Trachtenberg, A Constructed Peace, p. 397-398.
174 Kelleher, Germany and the Politics of Nuclear Weapons, p. 52, 54.
exploitation and abandonment. They rejected perceived Soviet and US efforts to control their foreign policies through nuclear assistance. Meanwhile, the FRG exploited US efforts to control it by signaling its intention to adopt a dependent but hedging posture if US reassurance was not forthcoming. The FRG requested US actions in order to prove the credibility of its commitments and, unlike French and Chinese requests for assistance with their overseas interests, the United States largely delivered on those commitments. As US assistance with the French nuclear program came with restrictions and was rejected, I am unable to assess whether the credibility of US alliance commitments to assist and defend were interdependent or independent, as in the Sino-Soviet case.

**Conclusion**

In this paper I have argued that variation in alliance credibility explains why some junior allies pursue nuclear weapons and not others. This variation also explains when junior allies will decide that they can no longer rely upon the extended nuclear deterrence guarantees and seek an independent nuclear capability. Building upon the literature on the credibility of state commitments, I have offered a theoretical explanation for how the credibility of superpower security assurances vary and interact with threat perceptions. The credibility of a superpower’s security assurances vary because their capabilities change, or their junior allies update their assessments of the superpower’s interests and the degree to which those interests overlap with their own vital interests. The level of credibility a junior ally requires in order to feel secure will vary with its threat perception. This theoretical framework for assessing the credibility of alliance commitments suggests that variation in threat perception and the credibility of security assurances interact to drive or constrain nuclear proliferation.

The main China case and shadow French and West German cases show that this reputation-based theory of alliance credibility enhances understanding of proliferation within alliances. The China case indicates that changes in reputation predict the outcome, but not necessarily the timing, of proliferation decision points. Speech evidence from Mao Zedong and Peng Dehuai indicate that Soviet security guarantees were not perceived as credible after China had decided to acquire nuclear weapons, but Chinese leaders did not justify their decisions to pursue nuclear weapons by reference to Soviet alliance credibility at nuclear decision points. The most likely
interpretation of the Chinese case is that upon entering into the Sino-Soviet alliance in 1950, Chinese leaders were uncertain about the credibility of Soviet guarantees, but learned that they were not credible due to Stalin’s delayed support for China’s entry into the Korean War. This perception was confirmed in 1954 when Khrushchev did not provide assurances to protect China from US nuclear threats during the 1954-5 Taiwan Straits crisis. This explains China’s requests for nuclear weapons from the Soviet Union in 1952 and 1954, while its 1955 decision to initiate its own nuclear weapons program was likely prompted by the discovery of uranium in China. Further research could confirm this interpretation with speech evidence of Chinese decision-makers’ reactions to Soviet actions in the Korean War and 1954-5 Taiwan Straits crisis. The China case also clearly indicates that accepting Soviet nuclear assistance did not compromise the independence of China’s future deterrent. Nor did Soviet fulfillment of its commitments to assist China affect upon the credibility of its commitments to defend it. The China case also suggests that superpower persuasion may be less effective than coercion in preventing proliferation, in line with other recent studies of the role of alliances in constraining proliferation.

A comparison of all three cases suggests that past actions reveal limits on the geographical scope of a security guarantee, and that states react differently to their senior allies’ perceived efforts to control their security policy, both of which have implications for proliferation behavior. Future scholarship should examine the effect of junior partner involvement in territorial disputes, particularly those involving non-contiguous territory, on the credibility of extended deterrence commitments.

Although the reputation-based theory of alliance credibility and nuclear proliferation within alliances offered in this paper requires further testing, the tentative findings of this paper do offer some precautionary advice for policy-makers. If they wish to preserve the credibility of their alliance commitments, they should not heed Daryl Press’ advice and ignore their reputation, especially where their allies’ disputed territories are concerned. In East Asia, this lesson may be as true for the United States today as it was for the Soviet Union in the 1950s.