THE CREDIBILITY CRISIS OF EXTENDED NUCLEAR DETERRENCE

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Abstract

Extended Nuclear Deterrence (END) is a core component of alliance politics that developed during the Cold War. This study examines whether extended nuclear deterrence is experiencing a credibility crisis due to structural changes in the contemporary international environment and considers whether existing theoretical models adequately explain variation in credibility across alliance relationships. Through qualitative comparative analysis of U.S. extended deterrence relationships with NATO, Japan, and South Korea, with Ukraine considered as a contrasting case of security assurances outside a treaty-based extended deterrence relationship, the study introduces two analytical concepts, credibility diffusion and deterrence decoupling, and proposes two theoretical frameworks, the responsive credibility framework and the asymmetric entanglement framework of extended deterrence. Eight hypotheses are used to examine the observable implications of these proposed mechanisms. The analysis indicates that the credibility of extended nuclear guarantees may depend not only on nuclear capabilities but also on political cohesion, domestic constraints, strategic communication, consultation practices, and the degree of integration between allied command systems. The cases provide illustrative evidence for several of these relationships but do not establish causal effects or confirm all eight hypotheses. The study therefore proposes a research agenda for further empirical evaluation of the concepts and hypotheses through documented process tracing, longitudinal evidence, and systematic assessment of alternative explanations.

Key words: Extended nuclear deterrence, Credibility crisis, Alliance politics, nuclear strategy, Credibility diffusion, Deterrence decoupling, Responsive credibility, Asymmetric entanglement.

Introduction

Extended nuclear deterrence, as the backbone of U.S. alliance strategy throughout the Cold War, was based on an apparently straightforward proposition: the United States would expose its own territory to the risk of nuclear retaliation in order to protect its allies. In essence, extended nuclear deterrence provided assurances to Western European allies, Japan, and South Korea, thereby reducing their incentives to develop independent nuclear capabilities (Schelling, 1966). Although there were periodic doubts about such commitments, extended nuclear deterrence contributed to the security of U.S. allies during the Cold War. However, the strategic environment at the beginning of the twenty-first century bears little resemblance to the predominantly bipolar world of the Cold War. This study, therefore, addresses whether extended nuclear deterrence remains credible in the contemporary strategic environment and what theoretical developments may be necessary to explain variation in its credibility.

The loss of credibility of extended nuclear deterrence represents much more than an abstract issue for scholars. It has practical policy implications for NATO's Eastern Flank, for South Korea and Japan as they confront regional nuclear threats, and for the broader structure of U.S. alliances that has shaped international security since the early Cold War. Should allies doubt the

credibility of U.S. extended deterrence commitments, they may face several strategic alternatives: developing independent nuclear capabilities, accommodating potential adversaries, or reconsidering interests previously protected by U.S. security commitments (Walt, 1987; Sagan & Waltz, 2013). Such developments could produce significant changes in alliance cohesion, regional security, and the broader nuclear non-proliferation environment.

Problem Statement and Puzzle

Extended nuclear deterrence, as an underlying structure of U.S. alliances since the early Cold War, faces significant challenges in the contemporary international strategic environment. The bipolar structure of the Cold War provided a comparatively stable framework for U.S. extended deterrence commitments to NATO allies, Japan, and South Korea. Since the end of the Cold War, however, several important changes in the international environment have created pressures that differ from those of the bipolar period.

The first is the emergence of multipolar nuclear competition involving China, Russia, North Korea, and other potential nuclear actors. This development complicates threat assessment and escalation management because the United States and its allies must consider multiple potential adversaries across different regions.

The second change is the increased use of hybrid strategies, including cyber operations, disinformation, and economic coercion. These instruments create forms of pressure and escalation that may be difficult to address through nuclear threats alone and may therefore contribute to a credibility gap between nuclear guarantees and the actual security challenges confronting allies.

The third change concerns strains in solidarity among U.S. allies. Withdrawal rhetoric, disagreements over burden sharing and trade, and differences in threat perceptions may create uncertainty about the continuity of U.S. commitments. Such disagreements do not necessarily mean that extended deterrence has lost credibility, but they may influence how allies assess the reliability of those commitments.

The fourth development concerns Ukraine's experience. Russia's violation of Ukraine's sovereignty despite the security assurances associated with the Budapest Memorandum demonstrates the limitations of security assurances that are not equivalent to treaty-based extended deterrence commitments. The Ukrainian case should therefore not be treated as equivalent to those of NATO, Japan, or South Korea, but it provides a useful contrast for examining how the form and institutionalization of security commitments may influence perceptions of their credibility.

These transformations present the central puzzle of this study: If extended nuclear deterrence is experiencing pressures on its credibility, why does credibility vary across different alliance relationships, and under what conditions can extended deterrence remain credible in the twenty-first century?

Contributions of the Study

The first contribution of this paper is to examine the factors associated with the credibility of extended nuclear deterrence in a changing international strategic environment. Particular attention is given to political cohesion, institutional arrangements, domestic constraints, strategic communication, and the integration of allied military command systems.

The second contribution is the development of two analytical concepts, credibility diffusion and deterrence decoupling, which explain how perceptions of credibility may be distributed across multiple audiences and how an ally's confidence may become decoupled from the defender's formal commitment.

The third contribution is the proposal of two analytical frameworks: responsive credibility and asymmetric entanglement. These frameworks specify political, institutional, and operational mechanisms that may help explain variation in allied confidence and generate eight hypotheses for

subsequent empirical assessment. Their explanatory value remains subject to further empirical testing.

Literature Review

1. Rationalist Approaches to Extended Nuclear Deterrence

Rationalist approaches provide an influential foundation for the study of extended nuclear deterrence. Their central proposition is that deterrence is more likely to succeed when a potential aggressor expects the costs of an attack to outweigh its anticipated benefits. These expectations depend on both the defender's capabilities and the perceived willingness to use them, making credibility a central concern (Schelling, 1966; Jervis, 1989). Extended deterrence introduces an additional challenge because the defender seeks to prevent an attack against an ally rather than solely against its own territory. A potential aggressor may therefore question whether the defender would accept the risks of military escalation, including possible nuclear retaliation, to protect that ally. The credibility problem thus concerns whether a commitment to defend an ally is believed and how that belief can be sustained.

One mechanism for strengthening the credibility of extended deterrence is the forward deployment of military personnel to allied territory. Such deployments can serve a "tripwire" function by increasing the likelihood that an attack on an ally would directly involve the defender's forces, thereby raising the anticipated costs and risks of aggression (Schelling, 1966). During the Cold War, U.S. military deployments in Europe helped link the security of European allies to the possibility of wider U.S. involvement in a conflict (Grand, 2016). An attack causing U.S. military casualties could increase political pressure for a response and make disengagement more costly. However, neither a military response nor escalation to nuclear use should be treated as automatic. The credibility of this mechanism depends on how adversaries assess the defender's resolve, military options, and willingness to accept further escalation.

The deterrence literature distinguishes between deterrence by punishment and deterrence by denial. Punishment-based deterrence seeks to discourage aggression by threatening costs that an adversary would regard as unacceptable, whereas denial-based deterrence seeks to convince an adversary that an attack is unlikely to achieve its objectives (Mazarr, 2018). Extended nuclear deterrence relies heavily on the threat of punishment, while operating within a broader defence posture that may also include denial capabilities. Its effectiveness, therefore, depends on whether the adversary considers the threatened response credible. Schelling (1966) emphasized how commitments that constrain a defender's subsequent choices or increase the costs of backing down can strengthen deterrent threats. In alliance relationships, treaty commitments, forward-deployed forces, and integrated military arrangements may contribute to this effect, although their credibility depends on the surrounding political and strategic context.

Jervis (1989) highlights the importance of decision-makers' interpretations of nuclear capabilities and the risks associated with their use. Possessing the capability to retaliate does not by itself ensure that an adversary will regard a deterrent commitment as credible. Communicating resolve is therefore a central challenge, particularly when defending an ally could expose the protecting state to substantial risks. Signals that involve material commitments or potential political costs may strengthen credibility, although their effects depend on how they are interpreted. Relevant measures can include forward deployments, joint military exercises, and public commitments. The domestic audience-cost argument provides a related explanation: publicly stated commitments may create political costs for leaders who subsequently retreat from them (Fearon, 1994). Such measures may reinforce a deterrent threat, but they do not guarantee that adversaries and allies will interpret the defender's intentions in the same way.

2. Capabilities, Institutions, and Civil–Military Relations

Material capabilities are an important component of the credibility of extended nuclear deterrence. A defender's ability to retain sufficient nuclear forces after an attack and carry out retaliation can strengthen the military basis of its deterrent commitments (Jervis, 1989). If an adversary has limited retaliatory capabilities, the defender may perceive greater freedom of action; however, even a limited nuclear response could impose severe costs. The credibility of extended deterrence, therefore, depends not only on the balance and survivability of nuclear forces but also on the perceived willingness to employ them in defense of an ally. Material advantages may reinforce a commitment, but they do not by themselves resolve doubts about whether the defender would accept the risks of escalation (Schelling, 1966; Mazarr, 2018).

Waltz (1981) argued that the spread of nuclear weapons could, under certain conditions, strengthen deterrence by increasing the anticipated costs of war. This argument concerns the potential stabilizing effects of nuclear possession, but its implications for extended deterrence require separate consideration. An ally's acquisition of an independent nuclear capability could reduce its reliance on a protecting state without necessarily eliminating the value of existing security commitments. At the same time, nuclear proliferation may create additional challenges for alliance coordination, crisis management, and escalation control (Sagan & Waltz, 2013). The resulting tension is therefore conditional: greater autonomy may complicate extended deterrence arrangements, while coordinated capabilities may also contribute to collective security.

Feaver (2003) examines civil–military relations through a principal–agent framework, emphasizing how civilian authorities monitor military organizations and seek to ensure that military conduct remains consistent with political preferences. Applied to extended deterrence, this perspective suggests that effective civilian oversight may help align military activities with declared security commitments. Alliance relationships introduce additional coordination challenges because the protecting state and its ally retain distinct political authorities, interests, and decision-making procedures. Differences between their preferences may complicate crisis management or create risks of unintended escalation. Building on Feaver's framework, this article therefore suggests that civilian oversight and coordination among allies may contribute to the coherence and perceived credibility of extended deterrence commitments.

Schiff's (2009) concordance theory emphasizes cooperation and agreement among the military, political elites, and the citizenry concerning the role of the armed forces in society. Although developed to explain domestic civil–military relations, this perspective may also inform the analysis of the domestic foundations of extended deterrence. Applied to alliance commitments, it suggests that agreement among these actors on the legitimacy and purposes of defence policy may help sustain political support for such commitments. Conversely, domestic disagreements may complicate the communication and implementation of alliance policy. This article, therefore, draws on concordance theory to suggest that the credibility of extended deterrence may depend in part on domestic political and societal support within the protecting state and its allies, alongside military capabilities and strategic signaling.

3. Constructivist Approaches and the Nuclear Taboo

Constructivist approaches challenge an exclusive focus on material power in explaining extended deterrence and emphasize the influence of norms, identity, and shared understandings in the development of credibility (Finnemore, 2003; Wendt, 1999). From a constructivist perspective, credibility is not merely an objective property of military capabilities but also a socially constructed belief about the defender's identity and intentions.

Adler (2005) contributes to this perspective by discussing communities of practice that produce shared expectations regarding appropriate conduct. For instance, NATO's history of integrated military planning, joint training exercises, and shared threat assessments can be understood as supporting a community of practice in which expectations of collective security

become embedded. Drawing on Adler's approach, such shared practices may help sustain credibility in extended deterrence alongside material power.

Hopf (2002) offers a related argument concerning how identities shape interests. Applied to the United States, this perspective suggests that its identity as a global leader and guarantor of the liberal international order may motivate maintaining alliance commitments that extend beyond immediate calculations of material costs and benefits. From this vantage point, credibility in extended deterrence may be influenced by identity as well as capability.

Bigo (2002) offers a related perspective on how security professionals contribute to the construction and maintenance of perceptions of threats. Although his analysis concerns security and immigration, this perspective may also inform the study of extended deterrence. In an alliance context, practices such as military exercises, information exchanges, and public communication may help sustain shared perceptions of threats and assurances. If these practices become less consistent, confidence in extended deterrence may weaken despite the continued availability of military capabilities.

Tannenwald (2007) examines the nuclear taboo as a normative inhibition against nuclear use that developed after 1945. This taboo may constrain the perceived credibility of some nuclear threats. Where nuclear use is regarded as morally unacceptable, an adversary may question whether a defender would act on its nuclear threat, even when it possesses the necessary capabilities. The implications for credibility may nevertheless vary with the circumstances in which the threat is made (Edmond, 2026).

4. Research Gap

Existing theoretical models of extended deterrence raise several issues that require further examination. One concerns the emphasis on bilateral relationships in some influential approaches, which may not fully capture the complexity of extended deterrence in a multipolar environment. During the Cold War, extended deterrence operated primarily within a bipolar international structure. Today, competition among China, Russia, North Korea, and other actors may place additional pressure on defenders and allies across interconnected security relationships.

A second issue concerns approaches that place particular emphasis on the defender's attributes when assessing credibility. These approaches may require further development to account for the ways in which extended deterrence depends on the actions and perceptions of multiple audiences. A defender must communicate the credibility of its commitments not only to adversaries but also to allies, its domestic public, and, in some circumstances, international institutions. These audiences may have competing expectations and apply different standards when assessing credibility.

Finally, although nuclear capabilities remain central to extended deterrence, their role should be considered alongside political cohesion, strategic communication, domestic political costs, and integration within allied command structures. Under certain conditions, these factors may become as important as material capabilities in shaping perceptions of credibility. This article examines their interaction through the proposed concepts of credibility diffusion and deterrence decoupling, as well as the frameworks of responsive credibility and asymmetric entanglement.

Materials and Methods

1. Research Design and Case Selection

The research design compares three U.S. extended deterrence relationships—NATO, Japan, and South Korea—and includes Ukraine as a contrasting case of security assurances. The cases differ in institutionalization, the integration of command, control, and communications (C3), and perceived threats. Ukraine is used to examine the limits of assurances outside a treaty-based extended-deterrence relationship, rather than as an equivalent allied case.

The research design draws on the logic of process tracing (George & Bennett, 2005) to examine how perceived credibility develops over time, identify episodes in which confidence was

questioned, and assess the explanatory relevance of the mechanisms proposed by the analytical frameworks.

Comprehensive Research Design Description

This study uses qualitative comparative case analysis informed by process-tracing principles. It identifies relevant historical episodes and examines their potential implications for allied perceptions of credibility. However, the study does not undertake comprehensive within-case process tracing or establish causal mechanisms through systematic tests of competing explanations. The research design is intended to support:

• Comparative analysis of the three extended deterrence relationships and the contrasting Ukrainian case in terms of institutionalization, C3 integration, and threat perceptions.

• Examination of changes in perceived credibility over time, while distinguishing treaty-based deterrence commitments from the security assurances provided to Ukraine.

• Identification of critical episodes in which credibility may have been strengthened or weakened.

• Assessment of the observable implications of the proposed frameworks alongside those of existing theoretical approaches.

Detailed Case Selection Justification

Case Selection Criteria

The cases were selected to provide variation in institutionalization and C3 integration while maintaining a focus on U.S. security commitments. The comparison draws on the logic of a "most different" design to explore whether the proposed frameworks can account for variation across different institutional settings. However, Ukraine's status as a recipient of security assurances rather than a treaty ally limits its direct comparability with the other cases. The comparative characteristics of the selected cases are presented in Table 1.

Table 1. Comparative Characteristics of the Selected Cases

Criterion	NATO	Japan	South Korea	Ukraine
Type of security commitment	Positive (Article 5)	Positive (Treaty)	Positive (Treaty)	Security assurances (Budapest); contrasting case
Institutionalization Level	High	Medium	Medium-Low	Very Low
C3 Integration Level	High	Medium	Medium	None
Threat Level to Ally	Medium-High	High	High	Very High
Treaty Formality	Formal Alliance	Formal Alliance	Formal Alliance	Memorandum

Source: Author's compilation and qualitative assessment.

2. Sources and Selection of Materials

The study draws on publicly available primary and secondary materials relevant to U.S. security commitments, alliance arrangements, and perceptions of the credibility of extended deterrence. Relevant source categories include:

• Official alliance documents, including treaties, strategic concepts, and communiqués.

• National security strategies and defence policy documents.

• Public statements by officials, including presidential speeches, congressional testimony, and diplomatic briefings.

• Scholarly analyses, including peer-reviewed journal articles, books, and policy institute reports.

• Reports from major international media and specialist defence publications.

• Public opinion data from established polling organizations.

• Available declassified historical documents.

These materials provide a basis for examining declared commitments, institutional practices, and reported perceptions of credibility. Official statements are considered evidence of declared policy rather than, by themselves, proof of allied confidence or deterrence effectiveness. Sources were considered in relation to their relevance to the selected cases, the credibility of their institutional or scholarly origin, and their ability to document security commitments, institutional arrangements, or reported perceptions of credibility. Where available, primary documents were prioritized for establishing formal commitments and institutional practices. Differences in the timing, scope, and methodology of public opinion surveys were considered when interpreting evidence of allied confidence.

3. Operationalization of Credibility and C3 Integration

A credibility crisis in extended nuclear deterrence is understood as a substantial and persistent decline in an ally's confidence that a protecting state would honour its extended deterrence commitments in a crisis or war. Potential indicators include: (a) observable discrepancies between the defender's declared commitments and allied perceptions; (b) changes in allied behaviour suggesting reduced reliance on the extended deterrent; and (c) public or elite statements questioning the reliability of the defender's commitments.

Table 2. Observable Indicators and Data Sources for Assessing Alliance Confidence and Hedging Behavior

Observable Indicator	Operational Measure	Primary Data Sources
Declining confidence in U.S. extended deterrence	Public opinion surveys, elite opinion surveys, and defense white papers assessing trust in U.S. security commitments	Pew Research Center; Gallup; national polling organizations; allied defense white papers
Growth of autonomous military capabilities	Defense expenditure trends, indigenous weapons development, and military modernization programs	SIPRI Military Expenditure Database; national defense budgets; military procurement announcements
Increasing discourse on nuclear proliferation	Parliamentary debates, official policy statements, and academic discussions regarding independent nuclear capabilities	Parliamentary records; government policy documents; media archives; policy institute reports
Diplomatic hedging by allies	Strategic autonomy initiatives, diversification of security partnerships, and new bilateral or multilateral defense arrangements	Official government statements; alliance communiqués; diplomatic communications
Divergence in threat perceptions	Differences between allied and U.S. national security strategies, defense reviews, and intelligence assessments	National security strategies; defense reviews; intelligence community assessments
Declining domestic support for alliance commitments in the United States	Public opinion trends, electoral outcomes, congressional debates, and legislative voting patterns	National polling agencies; election data; Congressional records
Persistent U.S. withdrawal signals	Presidential statements, congressional actions, alliance burden-sharing debates, and diplomatic initiatives	White House transcripts; Congressional records; U.S. State Department publications
Allied contingency planning for reduced U.S. commitment	Military contingency plans, strategic concepts, force posture adjustments, and defense policy reviews	Allied defense ministries; military strategic planning documents; defense policy reviews

Source: *Author's compilation.*

Threshold Criteria

As a preliminary analytical proposal, a credibility crisis may be indicated when an ally meets at least three of the following six criteria:

1. Public confidence in U.S. extended deterrence declines by 40 percentage points, falling below 60%, as measured by comparable, reliable polling data.
2. An allied government formally reviews an independent nuclear option or considers acquiring nuclear weapons.
3. A substantial disagreement emerges between the United States and an ally over the assessment of threats regarded as existential.
4. Domestic support for alliance commitments in the United States falls below 50%.
5. An ally undertakes actions that may indicate hedging against a possible failure of U.S. commitments, such as strategic autonomy initiatives or the diversification of security partnerships.
6. Official allied defence documents explicitly question the reliability of U.S. commitments.

The numerical thresholds and the three-of-six rule are author-proposed criteria that require further empirical validation. The three-of-six rule is intended as a heuristic diagnostic tool rather than a validated measurement model. The proposed criteria may differ in their diagnostic significance and should not be assumed to have equal weights. Their applicability and relative importance require further empirical assessment.

They are intended as preliminary analytical reference points rather than conclusive evidence of a credibility crisis. The eight indicators in Table 2 provide a broader observational framework, while the six criteria above represent a proposed diagnostic subset. Their interpretation requires attention to context, since capability development, policy disagreements, and diversified partnerships do not necessarily indicate declining confidence.

Distinguishing the Severity Levels

Mild crisis: Signs of declining confidence are visible but appear reversible; allied behaviour is changing without a substantial longer-term alteration of strategic posture.

Moderate crisis: Multiple signs are visible, potentially including serious discussion of independent nuclear options and significant hedging behaviour.

Severe crisis: Multiple signs coincide with the active pursuit of nuclear weapons, major changes in alliance arrangements, or substantial disengagement from the security relationship.

These categories describe possible degrees of severity rather than an inevitable progression from one level to another.

C3 integration is considered qualitatively in terms of joint planning, command arrangements, and communications links. The comparative levels presented in Table 1 are author assessments rather than standardized measurements and should be interpreted accordingly.

4. Comparative Analysis and Hypothesis Assessment

The comparative assessment of the eight hypotheses is structured around the following analytical steps:

1. Identify Observable Implications: Specify observations that would support or challenge each hypothesis.
2. Examine Evidence: Consider relevant primary and secondary sources for each case.
3. Compare Evidence with the Hypothesis: Assess whether the available observations are consistent with the proposed relationship or mechanism.
4. Assess Alternative Explanations: Compare the proposed mechanisms with rationalist, capability-based, constructivist, and domestic political explanations.
5. Assess the Degree of Support: Describe the available support as strong, moderate, limited, or absent, taking into account the quality and consistency of the evidence and the applicability of each case.

The number of cases consistent with a hypothesis may inform the assessment, but it is not treated as a sufficient measure of evidential strength. Ukraine is considered separately where a hypothesis presupposes a treaty-based extended deterrence relationship. A lack of relevant evidence is distinguished from evidence contradicting a hypothesis. The resulting assessments indicate the extent to which the case material supports the proposed mechanisms rather than providing definitive confirmation of the analytical frameworks.

5. Triangulation and Assessment of Alternative Explanations

Evidence triangulation provides a framework for comparing official policy documents, public statements, behavioural indicators, scholarly analyses, and public opinion data. For each claim, the analysis should identify the source and date, distinguish independent evidence from repeated reporting of the same event, and consider convergence and disagreement across source types. Conflicting observations should be retained and assessed against alternative explanations rather than excluded.

Alternative Explanations Assessment

The assessment considers whether the following theoretical approaches could also explain the observations discussed in each case:

Rationalist Approaches: These emphasize interests, capabilities, resolve, and strategic signalling. Their explanatory relevance is considered alongside the proposed mechanisms of credibility diffusion and deterrence decoupling.

Capability-Based Approaches: These emphasize the military resources and options available to the defender. The comparison considers whether differences in capabilities can account for observed variation in perceived credibility or whether political and institutional factors provide additional explanatory value.

Constructivist Approaches: These examine how identities, norms, and shared expectations influence credibility. The analysis considers how these factors relate to the interaction and learning mechanisms proposed in the responsive credibility framework.

Domestic Political Approaches: These examine how public opinion, political competition, and institutional constraints may influence alliance commitments. Their explanatory relevance is considered alongside the proposed effects of consultation practices and C3 integration.

The comparison is intended to identify where the proposed frameworks complement existing explanations and where the available evidence does not clearly distinguish between them. In such cases, conclusions about the relative explanatory value of the frameworks remain provisional.

Results

1. Proposed Concepts: Credibility Diffusion and Deterrence Decoupling

1.1. Credibility Diffusion

Credibility diffusion occurs when the credibility of a defender's extended deterrence is distributed among various actors, audiences, and venues, so that it cannot be guaranteed or undermined by a single actor. In cases of credibility diffusion, the defender's nuclear capability remains essential for extending deterrence but is insufficient to ensure its success.

Extended deterrence credibility during the Cold War was largely a two-state relationship. The United States would send a signal of resolve; the Soviet Union would interpret this signal. Now, however, credibility associated with extending deterrence is distributed among many actors and audiences. A defender must demonstrate credibility to the adversary as well as to many of its allies, who will have differing assessments of the threats they face. Those same allies may act in ways that impact the defender's credibility with the adversary. Finally, the domestic public in the defending nation may limit the defender's ability to credibly commit resources to an ally, particularly when the

cost of potential conflict is high. International organizations (such as the UN and international courts) may also affect the legitimacy of a deterrent threat.

There are three methods by which credibility diffusion functions. Multiplier effects occur when an action taken by one ally affects the credibility of the defender's commitment to other allies. When a defender fails to protect one ally, it undermines its credibility with all its allies. Veto effects occur when an ally takes some provocative action that makes it impossible for the defender to credibly demonstrate its ability to prevent an attack against another ally because the defender appears to be incapable of controlling its own allies. Audience effects occur when domestic publics within the defending nation reduce their support for the defense relationship, thereby constraining the defender's options and limiting its ability to credibly commit resources to an alliance.

Credibility diffusion undermines the theoretical concept of extended deterrence credibility as a characteristic of a defender assessed by an adversary. Rather, credibility is developed through interactions between multiple actors at multiple locations. Therefore, this implies changes in how scholars will study extended deterrence. Scholars will need to develop more sophisticated models that account for the complex interdependencies among relationships and perceptions involved in developing credibility, rather than continuing to focus on a defender's characteristics and the signals that the defender sends.

1.2. Deterrence Decoupling

Definition: Deterrence decoupling is understood here as a weakening of the connection between the defender’s commitment and the ally’s confidence that the commitment would be fulfilled under specific conditions of conflict. Deterrence decoupling may occur even when the defender’s military capabilities and formal commitments remain unchanged.

Deterrence decoupling is closely related to credibility loss but emphasizes a more specific concern about the connection between the defender’s security interests and those of the ally. An ally may believe that the defender generally intends to honour its commitment while doubting whether it would be able or politically willing to do so in a particular conflict. Decoupling pressures may be especially pronounced when the ally and defender perceive threats differently, when the ally questions the continuity of the defender’s domestic political support, or when inconsistent statements create uncertainty about the circumstances in which the defender would act.

This article proposes three mechanisms through which deterrence decoupling may occur. First, threat divergence arises when the ally faces a threat that the defender does not regard as equally significant or existential. Second, political divergence arises when changes in domestic priorities or political relations weaken support for accepting risks on behalf of an ally. Third, capability divergence may arise when an ally develops independent military capabilities that reduce its reliance on the defender and create opportunities for less coordinated action. Such developments may complicate the perceived credibility of the defender’s commitment, particularly when they weaken joint planning or operational coordination; however, greater allied capability does not necessarily produce decoupling.

Deterrence decoupling highlights the possibility that extended deterrence relationships may face continuing pressures even after formal commitments have been established. These pressures require ongoing attention to differences in threat perceptions, political priorities, and military coordination. Maintaining credibility, therefore, involves signaling resolve to adversaries and reaffirming commitments to allies whose security expectations may evolve.

2. Proposed Analytical Frameworks and Hypotheses

2.1. The Theory of Responsive Credibility

Credibility is not necessarily a fixed attribute of the defender; it may evolve in response to the defender’s crisis management, control of escalation, and reassurance of allies. The proposed responsive credibility framework suggests that extended deterrence credibility develops through

repeated interactions between defenders and allies across crises, rather than being determined solely by the defender's capabilities.

The framework rests on three key assumptions. First, credibility is shaped by social interactions over time. Second, allies adjust their assessments of the defender's credibility in light of its conduct during previous crises, alongside its declared commitments. Third, demonstrations of commitment to one ally or group of allies may influence perceptions in other alliance relationships, depending on how comparable the circumstances are considered.

Three mechanisms are proposed. The first is the demonstration effect: allies draw on the defender's previous conduct when assessing its commitments. A perceived abandonment of another ally may weaken confidence, particularly when the circumstances are viewed as relevant to the current relationship. The second is the learning pathway: allies also draw lessons from non-crisis activities, including military exercises, treaty negotiations, and public diplomacy. They may assess whether these activities are consistent with the defender's declarations. The third is the institutional pathway: credibility may become embedded in arrangements that outlast individual leaders or administrations. Robust institutions may therefore make confidence in extended deterrence more resilient to political changes.

Testable Hypotheses:

H1: Allies are more likely to believe in the defender's extended deterrence commitment when the defender has demonstrated a willingness to bear costs in past crises involving allies.

H2: Extended deterrence credibility erodes when the defender fails to consult allies before making strategic decisions that affect alliance security.

H3: Allies discount declaratory statements about extended deterrence when those statements are contradicted by the defender's policy actions.

H4: Institutionalized extended deterrence relationships are more resilient to credibility shocks than less institutionalized relationships involving comparable security commitments.

In relation to rationalist approaches emphasizing capabilities and strategic signaling, responsive credibility places particular emphasis on adaptation and learning through repeated interaction. In relation to constructivist approaches, it seeks to specify observable mechanisms through which shared expectations may be reinforced or weakened. The framework is therefore intended to complement existing explanations by linking these mechanisms to empirically testable hypotheses.

2.2. Asymmetric Entanglement Theory of Extended Deterrence

Proposal: Extended nuclear deterrence credibility may be reinforced by the asymmetric entanglement of allied command, control, and communications (C3) systems. When these systems are operationally integrated, disengagement from an allied conflict may impose substantial costs on the defender. The proposed asymmetric entanglement framework, therefore, suggests that technical and operational integration can constrain, without eliminating, the defender's options for disengagement.

Key Assumptions: The framework rests on three assumptions. First, allied C3 systems may exhibit varying degrees of operational and technical interdependence. Second, this interdependence may make it more difficult for the defender to separate its military activities from a conflict involving the ally. Third, the consequences of disengagement may be asymmetric: disruption of shared arrangements may impose different costs on the defender and the ally. The framework focuses on situations in which these arrangements create substantial costs for the defender.

Mechanisms: Asymmetric entanglement is proposed to operate through three channels. The first is the technical channel. Operational and technical links between C3 systems may create dependencies that make withdrawal disruptive to shared military functions. The second is the operational channel. Integrated planning may generate expectations of reciprocal support, and withdrawal from these arrangements may impose operational and reputational costs. The third is

the political channel. Sustained military integration may create domestic constituencies within the defending state that support continued alliance cooperation. These constituencies may oppose disengagement, although their influence is likely to vary across political contexts.

Testable Hypotheses:

H5: Extended deterrence credibility is higher when the degree of C3 integration between the defender and the ally is higher.

H6: The defender is less likely to abandon an ally when disengagement from integrated C3 arrangements would impose substantial costs on the defender.

H7: Asymmetric entanglement strengthens the defender's perceived credibility when the defender is expected to bear greater costs of disengagement than the ally.

H8: Attempts to reduce C3 entanglement may weaken extended deterrence credibility in the short term when they are perceived as signaling reduced commitment or diminished operational coordination.

Distinction from Existing Theories

Compared with approaches that emphasize the defender's assessment of interests and capabilities, asymmetric entanglement pays particular attention to the technological and operational costs that may constrain decisions about fulfilling alliance commitments. It also complements institutionalist explanations by specifying how C3 integration may give practical effect to institutional arrangements. These mechanisms are proposed as additional influences on credibility rather than as substitutes for political resolve, military capabilities, or shared expectations.

3. Case Analysis

3.1. NATO and the United States of America

Contextual Institutional Framework: NATO represents a highly institutionalized extended deterrence relationship. Article 5 of the North Atlantic Treaty establishes that an armed attack against one or more Allies is considered an attack against them all, while each Ally determines the action it deems necessary in response. NATO maintains an integrated military command structure, conducts joint exercises, and has nuclear sharing arrangements involving U.S. nuclear weapons deployed in Europe (Mazarr, 2018; NATO, 2022).

Although confidence in extended deterrence was questioned at various points during the Cold War, the Alliance maintained its collective defence commitments. France's withdrawal from NATO's integrated military command structure in 1966 represented a significant institutional disagreement, but France remained a member of the Alliance (NATO, n.d.-a). The deployment of Pershing II missiles in Europe during the 1980s also generated substantial public controversy. These deployments can be interpreted as a demonstration of commitment, although their effects on allied confidence should not be assumed to have been uniform (Edmond, 2026).

The NATO case illustrates the proposed concept of credibility diffusion. Perceptions of extended deterrence depend not only on U.S. signals to potential adversaries but also on European participation in collective defence, political coordination, and domestic support within member states. U.S. withdrawal rhetoric and disputes over burden-sharing may raise concerns about political willingness even when military capabilities remain substantial. Such concerns illustrate how signals from a defender may influence perceptions across several alliance relationships.

The NATO case also illustrates potential decoupling pressures. Differences between European and U.S. threat assessments may raise questions about the risks the United States would accept in defence of its allies. The broader dilemma of risking the defender's own security to protect an ally has long been central to extended deterrence (Mazarr, 2018). After the Cold War, disagreements over strategic priorities and burden-sharing provided additional contexts in which confidence in alliance commitments could be called into question.

The case illustrates the learning mechanism proposed by responsive credibility. NATO's Kosovo air campaign in 1999 and the U.S.-led coalition campaign in Iraq in 2003 provided different settings for assessing U.S. leadership and allied coordination. Kosovo was a NATO operation, whereas NATO as an organization did not conduct the 2003 Iraq campaign (NATO, n.d.-b, n.d.-c). These episodes may have informed allied assessments of U.S. reliability, but their effects on confidence in extended nuclear deterrence require separate evidence and should not be inferred from participation or disagreement alone.

Finally, NATO's integrated command arrangements provide a plausible setting for examining asymmetric entanglement. Joint planning and operational links may increase the costs of U.S. disengagement from European security. Within the proposed framework, such costs could reinforce credibility if allies believe that the United States would take them into account. However, the existence of integration alone does not establish the degree of asymmetry or its effect on allied confidence. Acton's (2018) analysis also highlights escalation risks associated with entanglement, indicating that integration may entail risks as well as potential credibility benefits.

3.2 United States and Japan

The U.S.–Japan security relationship rests on the Treaty of Mutual Cooperation and Security of 1960. Unlike NATO, the alliance does not have comparable nuclear sharing arrangements, but it includes bilateral defence planning, coordination mechanisms, and a substantial U.S. military presence in Japan. The 2015 Guidelines for Japan–U.S. Defense Cooperation strengthened bilateral planning and provided for an Alliance Coordination Mechanism (Japan–U.S. Security Consultative Committee, 2015).

During the Cold War, the perceived Soviet threat contributed to the importance of U.S. security commitments to Japan. After the Cold War, both countries maintained cooperation in a changing regional environment. North Korea's nuclear capabilities and China's military modernization have reinforced the relevance of extended deterrence and alliance coordination (Samuels, 2007; Japan–U.S. Security Consultative Committee, 2015).

The U.S.–Japan case illustrates the proposed concept of credibility diffusion across multiple audiences. The United States must communicate resolve to potential adversaries while reassuring Japanese political leaders and the public. Japan's historical experience of the atomic bombings of Hiroshima and Nagasaki also shapes domestic debate about nuclear weapons. In addition, overlapping regional security concerns create incentives for coordination with South Korea. These relationships suggest that perceptions of credibility may be influenced by signals and interactions extending beyond the bilateral alliance.

Decoupling pressures may arise from differences in geography and political priorities. Japan's proximity to potential sources of conflict can produce assessments of urgency and risk that differ from those of the United States. Japanese domestic debates over the constitutional and political limits of military activity may also affect expectations about the roles each country would assume in a crisis (Samuels, 2007).

The relationship provides a setting for examining the demonstration pathway proposed by responsive credibility. U.S. conduct during the Korean War, the Vietnam War, and the Gulf War may inform Japanese assessments of American reliability, although the relevance of each episode depends on its perceived similarity to Japan's own security circumstances. Likewise, North Korea's development of nuclear capabilities may generate concerns about the adequacy of existing arrangements without necessarily indicating a general loss of confidence in the alliance.

The U.S. military presence in Japan and Japan's support for those forces illustrate the operational connections considered by asymmetric entanglement. These arrangements may make disengagement costly for both parties. Their institutional form differs from NATO's, but the extent

of integration should be assessed through specific planning, command, and operational arrangements rather than inferred solely from the absence of nuclear sharing.

The U.S.–Japan relationship may therefore face pressures for credibility diffusion and decoupling as regional threats and expectations evolve. At the same time, established consultation practices, bilateral planning, and sustained military cooperation may help manage these pressures. The case illustrates the possible interaction between institutional continuity and changing perceptions of security commitments.

3.3. United States and South Korea

The Mutual Defense Treaty of 1953 established the foundation of the U.S.–South Korea security relationship. The U.S. military presence in South Korea contributes to collective defence and may also serve a "tripwire" function by increasing the likelihood of direct U.S. involvement in a conflict. This presence should be understood as both an operational contribution to defence and a signal of commitment rather than as a guarantee of automatic escalation.

Confidence in the alliance has been tested by North Korean actions, including the sinking of the ROKS Cheonan and the shelling of Yeonpyeong Island in 2010, as well as subsequent missile tests. U.S. military deployments, exercises, and statements of support provide signals that South Korean audiences can use to assess American commitments. Their effects on confidence, however, depend on the circumstances and cannot be assumed to be identical across episodes.

The U.S.–South Korea relationship illustrates the proposed concept of credibility diffusion across multiple audiences. U.S. signaling towards North Korea also has implications for China and for South Korean domestic audiences. Political debate within South Korea may influence expectations about the scope and reliability of U.S. support. Differences among these audiences can complicate the communication of a consistent deterrent commitment.

Potential decoupling pressures may arise as South Korea develops more autonomous military capabilities, including missile defence and precision-strike systems. Domestic discussion of an independent nuclear option also raises questions about reliance on U.S. extended deterrence. Such discussion should not, however, be equated with an official decision to acquire nuclear weapons. Greater conventional capability may either complicate coordination or strengthen the alliance, depending on how it is incorporated into joint planning and operations.

The case illustrates the learning pathway proposed by responsive credibility. South Korean assessments may be influenced by how the United States responds to North Korean actions and by how it consults its ally. Responses perceived as timely and appropriate may reinforce confidence, while perceived inconsistency or insufficient consultation may weaken it. The establishment of the Nuclear Consultative Group in 2023 provides a concrete example of efforts to strengthen consultation on nuclear and strategic planning, although its effect on confidence requires separate assessment (Ministry of Foreign Affairs, Republic of Korea, 2023).

The Combined Forces Command provides an institutional basis for examining the operational and command relationships considered by asymmetric entanglement (United States Forces Korea, n.d.). Shared planning and command arrangements may make disengagement costly, but the existence of a combined command does not by itself establish the degree of technical C3 integration or asymmetric dependence. As South Korea develops its own capabilities, the implications for entanglement depend on whether those capabilities reinforce shared arrangements or reduce reliance on them. Bilateral efforts to strengthen conventional–nuclear integration demonstrate that capability development and deeper coordination can also proceed together (U.S. Department of Defense, 2024).

3.4. The Budapest Memorandum: Security Assurances and Their Limitations

Ukraine is treated here as a contrasting case of security assurances rather than an equivalent case of U.S. extended nuclear deterrence. The Budapest Memorandum accompanied Ukraine's

accession to the Treaty on the Non-Proliferation of Nuclear Weapons as a non-nuclear-weapon state. Its commitments include respect for sovereignty and existing borders, restraint from the threat or use of force and economic coercion, consultation, and specified commitments concerning nuclear threats and use. The memorandum, therefore, should not be reduced to a pledge of nuclear non-use alone (Memorandum on Security Assurances, 1994).

Negative security assurances concern commitments not to use nuclear weapons against non-nuclear-weapon states under specified conditions. Extended nuclear deterrence involves a different relationship in which a protecting state extends nuclear deterrence to an ally. The Budapest Memorandum did not establish a U.S. commitment to defend Ukraine through military intervention or place it under a U.S. nuclear umbrella. Its commitments must therefore be distinguished from those associated with collective defence and extended nuclear deterrence (Memorandum on Security Assurances, 1994).

Russia's violation of its commitments to Ukraine may affect how other states assess the reliability of security assurances. However, the extent to which these events influence confidence in other security relationships depends on the commitments and circumstances involved. Their wider effects should therefore be examined rather than assumed to apply uniformly to all non-nuclear states.

The Ukrainian case illustrates the limits of security assurances without an accompanying commitment to military defence. Russia's violations and the responses of the other signatories must be assessed separately. The absence of direct U.S. or UK military intervention cannot, by itself, demonstrate the failure of an extended nuclear deterrence commitment that the memorandum did not establish.

The contribution of this contrasting case is to clarify the scope conditions of the proposed frameworks. Ukraine can inform the analysis of how violations affect perceptions of security assurances and how institutional arrangements shape expectations. It should not, however, be treated as an equivalent observation of credibility or abandonment within a U.S. treaty alliance. Comparisons must distinguish the type of commitment before attributing outcomes to institutionalization or C3 integration.

For hypothesis assessment, evidence from Ukraine is used to examine the limits of non-alliance assurances, rather than automatically counting it as confirmation or disconfirmation of hypotheses concerning extended nuclear deterrence to allies.

4. Cross-Case Comparison and Assessment of Hypotheses

4.1. Case-Based Assessment of Responsive Credibility

The case material provides illustrative support for selected mechanisms proposed by the responsive credibility framework. In the NATO case, the Kosovo and Iraq episodes offer different settings for examining how U.S. conduct and allied coordination may influence perceptions of reliability. In the Japanese case, U.S. responses to regional security challenges provide a basis for considering how allies interpret the defender's conduct over time. In South Korea, responses to North Korean actions and the development of consultation mechanisms illustrate the relevance of responsiveness and reassurance. Ukraine provides a contrasting case regarding the limits of security assurances outside a treaty-based extended-deterrence relationship.

Hypothesis Assessment:

H1 (cost-bearing): The NATO and South Korean cases are consistent with the proposition that a defender's willingness to bear costs may reinforce allied confidence. However, the presence of military commitments and deployments does not, by itself, establish their effect on perceptions of credibility.

H2 (consultation failure): The NATO case illustrates how disagreements over strategic decisions may undermine allied confidence. The consultation arrangements discussed in the Japanese and South

Korean cases also demonstrate the importance attached to coordination. These observations are relevant to H2, although the effects of consultation failure require more direct evidence.

H3 (contradictions between declarations and actions): The cases provide settings in which consistency between declared commitments and policy conduct may influence assessments of reliability. For Ukraine, this concerns the security assurances actually provided rather than an extended nuclear deterrence commitment. The direction and extent of changes in confidence require evidence beyond the identification of a discrepancy.

H4 (institutionalization): NATO's established institutional arrangements are consistent with the proposed role of institutions in sustaining commitments through political disagreements. Ukraine illustrates a different type of security relationship, but the contrast cannot isolate the effect of institutionalization because the underlying commitments also differ. H4, therefore, remains a proposition requiring comparison among relationships involving comparable security commitments.

4.2. Case-Based Assessment of Asymmetric Entanglement

The case material illustrates several relationships relevant to the asymmetric entanglement framework. NATO's integrated command arrangements suggest that disengagement could impose operational and political costs on the United States and its allies. In Japan, U.S. military facilities, host-nation support, and bilateral planning provide additional examples of operational connections. In South Korea, the Combined Forces Command and shared planning arrangements illustrate institutionalized military cooperation. These observations establish the relevance of integration, but they do not by themselves demonstrate its effect on credibility or the distribution of disengagement costs. Ukraine provides a contrasting institutional setting rather than an equivalent case of allied C3 integration.

Hypothesis Assessment:

H5 (C3 integration and credibility): The NATO, Japanese, and South Korean cases are consistent with the proposed relevance of military integration to extended deterrence. However, a positive relationship between the degree of C3 integration and perceived credibility requires comparable assessments of both variables. The contrast with Ukraine cannot, on its own, establish this relationship because the underlying security commitments differ.

H6 (disengagement costs): The alliance cases illustrate arrangements through which disengagement may impose operational, institutional, and political costs. This is consistent with the proposed mechanism, but the claim that these costs reduce the likelihood of abandonment remains an inference rather than a directly established result.

H7 (asymmetric entanglement): NATO provides a setting for examining whether the costs of disengagement differ between the United States and its allies. The present analysis does not establish that the defender's costs are greater than those of the ally. The direction and extent of this asymmetry, therefore, require further assessment.

H8 (reduced entanglement): South Korea's development of autonomous capabilities provides a context for examining whether changes in military dependence affect credibility. Such capabilities may reduce some dependencies while strengthening combined defence in other respects. Support for H8 would require evidence that reduced integration is perceived as diminished commitment or weaker coordination, rather than treating capability development alone as evidence of decoupling. The comparative assessment of the eight hypotheses across the selected cases is summarized in Table 3.

Table 3. Case-Based Assessment of the Proposed Hypotheses

Hypothesis	NATO	Japan	South Korea	Ukraine	Overall Assessment
H1. Cost-bearing enhances alliance credibility	Illustrative material	Contextual material	Illustrative material	N/A	Illustrative consistency; effects on

Hypothesis	NATO	Japan	South Korea	Ukraine	Overall Assessment
					confidence require further evidence
H2. Consultation failure erodes alliance credibility	Illustrative material	Consultation arrangements described	Consultation arrangements described	N/A	Relevance of consultation illustrated; effects of its failure not established
H3. Gaps between declarations and actions undermine credibility	Contextual material	Contextual material	Contextual material	Contrasting case	Plausible relationship; changes in confidence require direct evidence
H4. Institutionalization enhances credibility resilience	Illustrative material	Institutional arrangements described	Institutional arrangements described	Contrasting case	Institutional role illustrated; independent effect not established
H5. C3 integration is positively associated with credibility	Integration described	Integration described	Integration described	N/A	Integration is relevant; its association with credibility is not established
H6. High disengagement costs reduce the likelihood of abandonment	Costs inferred	Costs inferred	Costs inferred	N/A	Proposed mechanism is plausible but not directly demonstrated
H7. Asymmetric entanglement increases credibility when the defender faces greater disengagement costs	Asymmetry not established	Asymmetry not established	Asymmetry not established	N/A	Insufficient evidence to assess the direction and effect of asymmetry
H8. Reduced C3 entanglement may weaken credibility when perceived as reduced commitment or coordination	Not assessed	Not assessed	Conditional argument	N/A	Conditional proposition; the proposed effect is not established

Source: *Author's synthesis of the case discussions in Sections 3.1–3.4 and the hypothesis assessments in Sections 4.1–4.2.*

Note: "Illustrative material" identifies observations discussed as consistent with a proposed mechanism without establishing causality. "Contextual material" provides relevant background but does not directly demonstrate the hypothesized relationship. Descriptions of institutional arrangements or integration establish their presence rather than their effect on credibility. "Costs inferred" and "Conditional argument" identify analytical interpretations requiring further evidence. "Not assessed" and "Asymmetry not established" indicate limitations of the present analysis rather than evidence against a hypothesis.

"Contrasting case" refers to Ukraine's distinct security-assurance relationship. N/A indicates that the hypothesis, as formulated for allied extended deterrence, is not directly assessed through the Ukrainian case.

Discussion and Policy Implications

1. Comparison with Other Theories

Existing theories help explain several aspects of the case material, while the proposed frameworks highlight additional connections among these explanations. Rationalist approaches provide reasons why the United States may seek to bind itself to its allies through commitments and costly signals. The responsive credibility framework complements these explanations by emphasizing how allies may update their assessments through repeated interactions, consultation, and observations of the defender's conduct.

Capability-based approaches explain why military resources and available response options matter for deterrence. However, differences in allied confidence may also reflect political and institutional conditions within relationships supported by the same nuclear power. The cases, therefore, suggest the value of examining capabilities alongside the processes through which commitments are interpreted.

Constructivist approaches provide insights into the roles of norms, identities, and shared expectations. Responsive credibility builds on these insights by identifying demonstration, learning, and institutional pathways through which confidence may be reinforced or weakened. Asymmetric entanglement adds an emphasis on the operational and technical arrangements that may increase the costs of disengagement.

The proposed frameworks thus seek to connect mechanisms addressed by existing approaches rather than replace those approaches. Their potential contribution lies in explaining how political interaction and military integration may jointly shape perceived credibility. The case material illustrates this possibility, while the frameworks' comparative explanatory value remains subject to further empirical assessment.

2. Policy Implications

Strategies to Enhance Extended Deterrence Credibility

The analysis suggests several approaches that may help reinforce the credibility of extended deterrence. Institutionalized consultation and planning arrangements may contribute to the resilience of allied confidence. Integrated C3 systems may also increase the costs of disengagement, while exercises, consultations, and crisis management provide opportunities to demonstrate commitment. These implications follow from the proposed mechanisms and illustrative case material rather than from conclusive evidence of policy effectiveness.

Recommendation 1: The United States and its allies should consider strengthening C3 coordination and interoperability where these support shared defence objectives. The development of autonomous allied capabilities should be assessed in terms of its effects on joint planning and operational coordination. Such capabilities may complicate extended deterrence if they weaken these connections, but they may also reinforce collective defence when effectively coordinated.

Recommendation 2: The United States should maintain an appropriate forward military presence where it contributes to allied defence and reassurance. Forward-deployed forces may increase the costs of disengagement and signal commitment, but their credibility should rest on their operational role, supporting arrangements, and potential "tripwire" function.

Recommendation 3: The United States should consult its allies before making strategic decisions that materially affect shared security interests. Consistent consultation may help align expectations and sustain confidence, while inadequate consultation may weaken perceived reliability through the learning process described in the responsive credibility framework.

Managing Credibility Diffusion

Credibility diffusion may have persistent effects, but these effects are not necessarily irreversible. The United States should recognize that perceptions of its reliability in one alliance relationship may influence confidence in its reliability in others. A perceived failure to honour a commitment may produce wider reputational effects, particularly when other allies regard the circumstances as relevant to their own security. The extent of these effects nevertheless depends on the type of commitment, the context of the decision, and how it is communicated.

Recommendation 4: Treat credibility as a shared concern across alliance relationships and consider how decisions affecting one ally may be interpreted by others. Where commitments or circumstances differ, these distinctions should be communicated clearly to reduce the risk of unwarranted generalization.

Recommendation 5: Coordinate with allies to communicate shared commitments and reduce inconsistent signals to adversaries. Where differences arise, consultation and clear communication may help prevent them from being interpreted as a broader loss of alliance cohesion or willingness to provide support.

Preventing Deterrence Decoupling

The proposed framework identifies three potential sources of deterrence decoupling: threat divergence, political divergence, and capability divergence. Differences in threat perceptions may be reduced through sustained intelligence sharing and joint assessments. Political differences may be managed through diplomacy and consultation. Coordination of capability development and defence planning may help ensure that greater allied military autonomy remains compatible with shared security commitments.

Recommendation 6: The United States should continue to discourage nuclear proliferation among its non-nuclear allies and partners while sustaining credible security commitments. The development of additional independent nuclear arsenals may complicate alliance coordination and escalation management, but their implications should not be equated with those of strengthening allied conventional capabilities. The objective should be to support non-proliferation while maintaining effective and coordinated collective defence.

Recommendation 7: The United States and its allies should hold regular senior-level consultations to assess differences in threat perceptions, political priorities, and capability development. These consultations may help identify emerging decoupling pressures and support timely adjustments to shared planning and reassurance measures.

Implications for non-proliferation

The Ukrainian case illustrates the risks associated with relying on security assurances that do not include a commitment to military defence. When non-nuclear states question the reliability of security commitments, interest in independent nuclear capabilities may increase, although such decisions also depend on domestic, regional, and technological factors. The credibility of security arrangements may therefore influence incentives relevant to the nuclear non-proliferation regime.

Recommendation 8: Where the United States undertakes extended deterrence commitments to non-nuclear allies, it should support those commitments through clear consultation procedures, institutional arrangements, and appropriate defence planning. Negative security assurances serve a different purpose and should not be presented as equivalent to commitments to defend an ally. Clear communication of the scope and limits of each arrangement may help align expectations.

Recommendation 9: The United States should support the non-proliferation regime by reinforcing confidence in the security arrangements available to non-nuclear allies and partners. This includes maintaining consistency between declared commitments and policy conduct and responding to threats through the mechanisms applicable to each relationship. Such measures may

strengthen the security incentives associated with non-proliferation without implying that adherence to the NPT automatically entails a military defence guarantee.

Conclusions

This article argues that extended nuclear deterrence faces significant credibility challenges associated with structural transformations in the global political environment. It introduces two concepts, credibility diffusion and deterrence decoupling, and proposes two theoretical frameworks, responsive credibility theory and asymmetric entanglement theory, to help explain these challenges and variation in allied confidence.

The case analysis provides illustrative support for selected mechanisms proposed by the two frameworks, without establishing causal effects or confirming all eight hypotheses. Responsive credibility theory describes how an ally may update its beliefs about the defender's credibility in response to the defender's past actions, consultation practices, and institutional commitments. Asymmetric entanglement theory proposes that C3 integration may generate costs of disengagement that contribute to perceived credibility, although the magnitude and distribution of these costs require further investigation.

The theoretical contributions of this article are twofold. First, it questions the treatment of extended deterrence credibility as a stable attribute of the defender's capabilities and emphasizes how credibility may develop through repeated interactions between the defender and its allies. Second, it qualifies the assumption that the defender retains unrestricted freedom to disengage from its commitments by suggesting that operational and technological entanglements may constrain such decisions. These arguments complement existing approaches by drawing attention to the interaction between political commitments, institutional arrangements, and military integration.

Limitations: This study has several limitations. First, the analysis relies on publicly available information and does not include classified material or interviews with key decision-makers. Second, the cases focus on U.S. extended deterrence relationships, with Ukraine serving as a contrasting case of security assurances outside treaty-based extended deterrence. This limits the generalizability of the findings to relationships involving other nuclear states. Third, the absence of standardized measures of credibility and C3 integration limits systematic comparison across cases. The proposed frameworks therefore require additional empirical testing, including quantitative analysis and formal modeling where appropriate.

Future Research Directions: Several avenues for further research follow from these limitations. First, interviews with decision-makers involved in alliance management could help assess whether the mechanisms proposed by responsive credibility theory and asymmetric entanglement theory operate as hypothesized. Second, formal models of credibility diffusion and deterrence decoupling could clarify the proposed relationships and generate additional testable implications. Third, expanding the case base beyond the U.S. alliance system could help assess the scope of the frameworks, while accounting for differences between defence commitments and other security arrangements. Fourth, longitudinal analysis supported by documented process tracing could examine whether the proposed mechanisms help explain changes in allied confidence and deterrence outcomes over time, alongside alternative explanations.

Extended nuclear deterrence is not necessarily obsolete, but its credibility may require adaptation to changing political and security conditions. The challenges examined in this article do not establish an inevitable failure of extended deterrence; they indicate areas that warrant closer attention. Examining credibility diffusion and deterrence decoupling through the proposed frameworks of responsive credibility and asymmetric entanglement may help scholars and policymakers understand the management of extended nuclear deterrence under conditions of multipolar competition, hybrid warfare, and strains on allied solidarity. Nuclear capabilities remain

central to deterrence, while the political, institutional, and operational arrangements supporting extended commitments also require sustained attention.

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