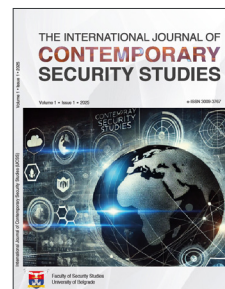




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Article

## Revolutionary Identity and Nuclear Bargaining: How Symbolic Legitimacy Restructures Utility in Iran's Nuclear Program

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### ABSTRACT

Conventional rationalist approaches assume that rising material costs should eventually lead to moderation, yet Iran's nuclear trajectory has remained marked by bargaining rigidity despite sustained sanctions and repeated diplomatic openings across changing economic and political conditions. This article argues that existing explanations are limited because they treat identity and legitimacy as external to strategic calculation rather than as constitutive of it. The study adopts a qualitative single-case design of Iran and uses process tracing alongside qualitative content analysis of leadership speeches, parliamentary debates, official policy statements, International Atomic Energy Agency (IAEA) reports, United Nations Security Council (UNSC) resolutions, and key negotiation records from the early 2000s through the post-2018 sanctions period. The central research question is: why does Iran continue to resist nuclear compromise despite sustained sanctions and repeated opportunities for agreement? The findings show that nuclear policy is consistently framed through narratives of sovereignty, resistance, and revolutionary legitimacy, and that moments of escalation correspond more closely to the preservation of symbolic legitimacy than to shifts in material pressure alone. In this context, nuclear development functions not only as a strategic asset but also as a source of political legitimacy embedded within state authority. Concessions therefore impose symbolic and political costs that may outweigh anticipated economic gains. The article contributes to international relations and nuclear bargaining scholarship by developing the concept of identity-embedded utility, showing how symbolic legitimacy becomes internalized in strategic decision-making. More broadly, the findings suggest that coercive strategies centered primarily on material pressure may be less effective in ideologically grounded regimes.

### KEYWORDS

Nuclear bargaining; revolutionary legitimacy; symbolic legitimacy; identity-embedded utility; Iran's nuclear program; coercive diplomacy.

## 1. Introduction

Since the early 2000s, Iran's nuclear trajectory has generated sustained confrontation within the global non-proliferation regime, despite alternating cycles of escalation and negotiated restraint.



Material capabilities have expanded and contracted; inspection regimes have been strengthened and weakened; sanction pressure has intensified and partially relaxed. However, the dispute has shown a striking degree of persistence. If nuclear decision-making were primarily driven by shifting material payoffs, repeated rounds of coercion and diplomacy should have produced convergence toward compromise. The fact that they have no points to a deeper problem: existing explanations struggle to account for enduring bargaining rigidity under conditions where compromise appears materially rational.

This problem extends beyond the Iranian case. Explanations grounded in deterrence, coercive bargaining, and institutional design remain central to how scholars and policymakers interpret nuclear behavior. However, when these frameworks cannot explain persistence under extreme pressure, their analytical limits become visible. The Iranian case, therefore, raises a broader question about how we conceptualize state preferences and the sources of rigidity in high-stakes security disputes.

Existing approaches offer partial insights but leave an important gap. Rationalist models typically assume that preferences are materially grounded and stable, treating nuclear capability as an instrument of deterrence and bargaining leverage. Constructivist scholarship, by contrast, shows that identities and norms shape what states value and how they interpret their environment. However, these approaches rarely specify how identity directly enters strategic calculation. As a result, we lack a clear account of how symbolic commitments become embedded in decision-making in ways that systematically alter bargaining incentives.

This article addresses that gap by arguing that, in certain political contexts, identity can transform the structure of state utility itself. Rather than treating identity as an external influence on preferences, the argument developed here conceptualizes identity as internal to utility, restructuring what counts as a cost and a benefit within strategic calculation. In such cases, nuclear programs do not function solely as instruments of material security; they also serve as mechanisms of regime legitimation. Concessions, therefore, carry costs that extend beyond capability reduction, as they may undermine the ideological foundations of political authority. Bargaining rigidity, in this framework, reflects not a failure of rationality but a reordering of utility in which symbolic legitimacy becomes a constitutive component of payoff evaluation (Moshirzadeh, 2007). Under these conditions, rigidity emerges not from miscalculation or irrationality, but from a reconfigured payoff structure in which symbolic losses may outweigh material gains.

Empirically, Iran provides a particularly useful case because revolutionary legitimacy has remained central to state identity since 1979, and nuclear development has been consistently framed in terms of sovereignty and resistance (Abrahamian, 2008). This makes Iran a theoretically demanding case, as sustained external pressure would be expected to induce compromise under conventional materialist assumptions. At the same time, the argument is not limited to a single case. Similar dynamics may arise in other ideologically constituted regimes where strategic technologies become closely tied to identity and legitimacy.

Against this background, the central research question of this article is: under what conditions does identity embedding alter the composition of utility in nuclear bargaining, and how does this transformation generate persistent rigidity independent of material incentives? To answer this question, the article develops a theoretical framework that integrates insights from rationalist and constructivist approaches and then examines its empirical implications. In doing so, it contributes a mechanism-based account of how identity becomes operational within strategic decision-making, rather than treating it as a background or interpretive variable.

## 2. Methods

This study adopts a qualitative research design, combining a theory-guided case study with process tracing. This approach is appropriate for the research objective of explaining how identity-based factors reshape the internal logic of state decision-making—an issue that purely quantitative methods cannot adequately capture. The empirical analysis draws on material originally collected and

analyzed for the author's dissertation, which examined the relationship between legitimacy, identity, and nuclear policy in Iran.

The study focuses on the period from the early 2000s to the post-2018 sanctions environment. This timeframe is analytically significant because it captures the consolidation of Iran's nuclear program as a central political issue, multiple cycles of escalation and negotiation, and two major sanction regimes (pre-2015 multilateral sanctions and post-2018 unilateral re-escalation). It therefore allows for observation of variation in external pressure alongside relative continuity in discursive framing, which is necessary for assessing whether symbolic factors operate independently of material shifts.

Data are drawn from multiple primary and secondary sources, including leadership speeches, parliamentary debates, official policy statements, reports by the International Atomic Energy Agency, United Nations Security Council resolutions, and records of key negotiation processes such as the EU-3 talks and the Joint Comprehensive Plan of Action (JCPOA). These sources were selected because they capture both discursive articulation and observable policy behavior across institutional and international arenas.

Data collection relied on systematic document analysis. Materials were purposively sampled based on three criteria: 1) relevance to major nuclear milestones and escalation points, 2) direct connection to sanction regimes or diplomatic negotiations, and 3) explicit engagement with themes of sovereignty, legitimacy, resistance, or national identity. Documents that did not meet at least one of these criteria were excluded in order to maintain analytical focus and conceptual consistency.

The analysis combines qualitative content analysis with process tracing. Texts were coded manually using a thematic coding strategy. Initial coding categories were derived from the theoretical framework—specifically, sovereignty, legitimacy, and resistance—while additional subcodes emerged inductively through repeated readings of the material. Coding proceeded in iterative cycles, enabling refinement of categories and consistency in classification across sources and time periods. To enhance reliability, previously coded texts were periodically revisited and cross-checked against updated coding criteria to ensure internal consistency. This iterative recoding process functioned as a form of intra-coder reliability control, reducing the risk of drift in interpretation over time.

Coding categories were operationalized using explicit criteria to ensure consistency across sources. "Sovereignty" was coded when texts referred to autonomy, independence, or non-subordination to external authority, including assertions of national rights in the nuclear domain. "Resistance" captured expressions of defiance, endurance under pressure, or rejection of externally imposed constraints, particularly in response to sanctions or diplomatic demands. "Legitimacy" was identified through statements linking nuclear policy to moral authority, revolutionary values, historical continuity, or the justification of political authority. "Symbolic payoff" was coded when discourse connected nuclear development to dignity, national pride, technological achievement, or ideological coherence—especially in contexts where such framing coincided with escalation, refusal to compromise, or reaffirmation of policy positions. Coding decisions were guided by the presence of these indicators in the text rather than isolated keywords and were applied consistently across institutional domains and time periods. This approach enabled the identification of patterned relationships between discursive framing and observable policy behavior.

All data were organized in a structured document archive, and coding decisions were systematically recorded to allow traceability between raw materials and analytical claims. Although no specialized qualitative software was used, manual coding was conducted consistently and transparently, with careful documentation of thematic categories and their evolution. Analytical rigor was further strengthened through triangulation across multiple types of sources. Official state discourse was systematically compared with international institutional reports and negotiation records, thereby verifying patterns across independent data streams and reducing the likelihood of single-source bias.

In addition, the longitudinal design of the analysis serves as a validity check by examining whether discursive patterns persist, intensify, or shift in relation to identifiable policy events and external pressures. Rather than relying on isolated observations, the study traces repeated co-occurrences between discourse and policy behavior, strengthening causal inference through temporal sequencing.

As the study relies exclusively on publicly available documents and does not involve human subjects, formal ethical approval was not required. Nonetheless, attention was paid to responsible data use, including accurate representation of sources and careful contextual interpretation of political statements to avoid mischaracterization.

### 3. Theoretical Framework and Literature Review

This section develops a three-layer analytical framework that connects rationalist bargaining models, constructivist critiques, and an identity-embedded theory of utility. It argues that existing approaches are limited in their ability to explain persistent bargaining rigidity under material pressure because they treat legitimacy and identity as external to strategic calculation. The proposed framework reconceptualizes symbolic legitimacy as an internal component of utility, reshaping how costs and benefits are defined in nuclear bargaining contexts.

#### 3.1. Rationalist Nuclear Bargaining Models

Canonical approaches to nuclear bargaining conceptualize state behavior as strategic interaction among rational actors whose preferences are assumed to be stable and materially defined (Fearon, 1995; Powell, 1990). Within this framework, nuclear capability functions as a strategic asset that shapes the credibility of deterrence and bargaining leverage (Schelling, 1980; Waltz, 1996). Policy concessions become rational when the expected costs of sanctions or escalation exceed anticipated security benefits, producing outcomes driven by material cost–benefit calculations (Porel, 2025).

A key assumption underlying this approach is the stability of utility structures. Preferences are treated as exogenously given, and material incentives determine decision outcomes in a relatively consistent manner (Morrow, 1994). Mechanisms such as audience costs affect signaling credibility but do not alter the composition of payoffs themselves (Fearon, 1994). Under these conditions, sustained resistance in the face of severe economic pressure appears anomalous and is typically attributed to misperception or incomplete information.

However, empirical cases of persistent rigidity under escalating material constraints suggest that this assumption may not always hold. Where political authority is closely tied to ideological commitments, the structure of utility may be more complex than purely material models allow.

#### 3.2. Constructivist Critique and Its Limits

Constructivist approaches challenge the assumption of fixed preferences by demonstrating that state interests are socially constructed through norms, identities, and intersubjective meanings (Katzenstein, 1996). From this perspective, what states value is shaped through historically embedded normative structures that define legitimacy and appropriate conduct. Identity is therefore not peripheral but constitutive of political action.

Despite this contribution, a limitation remains in explaining how identity becomes operational within strategic decision-making. Much of the literature shows how preferences are formed but offers less precision on how symbolic commitments translate into concrete shifts in payoff structures. As a result, material incentives often remain implicitly privileged in explanations of bargaining outcomes.

This limitation becomes particularly visible in high-stakes security contexts, where legitimacy, survival, and identity are tightly intertwined. In such cases, the analytical distinction between normative meaning and strategic calculation becomes difficult to sustain, as symbolic considerations may directly shape what counts as a cost or benefit.

### *3.3. Identity-Embedded Utility: A Theoretical Framework*

This study advances a framework that reconceptualizes identity as an internal component of utility rather than an external influence on preferences. In revolutionary regimes, political authority is grounded in narratives of sovereignty, resistance, and autonomy, which serve as the basis of regime legitimacy (Halliday, 2005). Under these conditions, strategic capabilities can acquire meaning beyond their material function, becoming embedded in the state's ideological structure.

When nuclear technology is integrated into these narratives, it generates a dual payoff structure composed of material security value and symbolic legitimacy value. Through public discourse, institutional communication, and elite framing, technological development becomes associated with sovereign dignity and political independence (Hopf, 2002). Utility is therefore reconfigured to include both material and symbolic dimensions within a unified decision-making framework.

This transformation alters bargaining behavior. Concession is no longer evaluated solely in terms of lost capability but also in relation to its implications for ideological consistency and political authority. As a result, compromise may impose legitimacy costs that exceed material benefits, producing persistent rigidity even under severe economic pressure.

The causal mechanism underlying this argument unfolds through four stages. First, legitimacy anchoring occurs when political authority is rooted in revolutionary narratives centered on sovereignty and resistance (Halliday, 2005). Second, discursive embedding links nuclear development to these narratives through sustained rhetorical and institutional reinforcement, creating a symbolic association between technology and identity (Wendt, 1999). Third, symbolic payoff formation emerges as technological progress reinforces domestic legitimacy and elite cohesion, particularly under external pressure (Hopf, 2002). Fourth, utility restructuring occurs as symbolic legitimacy is integrated into decision-making, altering the hierarchy of strategic priorities and increasing the cost of concessions.

This mechanism operates not only domestically but also through interaction with external actors. International institutions interpret nuclear programs through normative frameworks of compliance and security governance, which may conflict with internal identity-based meanings (Buzan, Wæver, & de Wilde, 1998). This divergence can intensify rigidity by producing incompatible expectations across domestic and international arenas.

From this framework, three propositions follow. First, in regimes where legitimacy is grounded in revolutionary identity, strategically significant technologies acquire symbolic value within utility structures (T1). Second, the depth of discursive embedding increases the symbolic payoff of technological advancement while amplifying the legitimacy cost of concession (T2). Third, when symbolic legitimacy is integrated into utility, bargaining rigidity may persist independently of material constraints or the intensity of sanctions (T3).

Identity-embedded utility differs from several adjacent concepts in important respects. Unlike preferences, which are typically treated as exogenously given, identity-embedded utility refers to the internal composition of payoff structures themselves. It also diverges from accounts of symbolic or reputational costs, which are often incorporated as additional penalties within an otherwise material framework; here, symbolic legitimacy is not an additive cost but a constitutive component of utility. Similarly, while audience cost models conceptualize domestic pressures as external constraints on decision-makers (Fearon, 1994), the present framework treats legitimacy as internal to strategic calculation rather than as a constraint upon it. In this sense, regime legitimacy functions not merely as a source of preferences but as a structured element of what is being maximized.

The framework applies under specific scope conditions: legitimacy must be ideologically grounded, strategic technologies must possess high symbolic visibility, and identity narratives must be institutionally embedded. Where these conditions are absent, material incentives are more likely to dominate. The argument, therefore, does not claim universal applicability but seeks to explain variation in contexts where identity and sovereignty are structurally fused.

#### 4. Research Design and Case Selection: Testing Utility Transformation

Iran presents a strategically compelling and theory-revealing case for testing the argument that symbolic payoffs can transform the utility structure of nuclear bargaining under conditions of extreme coercion. The country's nuclear trajectory combines several analytically important features: sustained external pressure, repeated negotiation opportunities, fluctuating technical capabilities, and yet a persistent pattern of policy rigidity. Within conventional rationalist frameworks, high material costs—arising from sanctions, economic contraction, and diplomatic isolation—should incentivize compromise in order to maximize expected utility (Waltz, 1996; Keohane, 2017). Under such conditions, material pressure is expected to produce accommodation as the costs of resistance increase. However, Iran's repeated refusal to accept materially advantageous agreements despite escalating costs constitutes a hard empirical puzzle. This divergence between predicted and observed behavior makes the case particularly suitable for testing whether utility transformation occurs through the incorporation of symbolic legitimacy into state decision-making.

The selection of Iran is therefore not incidental but theoretically motivated. It represents a "least-likely" case for the persistence of non-material explanations precisely because material incentives strongly predict compromise, yet resistance persists. If the argument holds in such a setting—where coercive pressure is both sustained and observable—it provides a demanding test of the theory. It strengthens the broader explanatory relevance of identity-embedded symbolic payoffs. At the same time, the case provides sufficient internal variation—across sanction episodes, negotiation rounds, and shifts in nuclear capability—to allow systematic evaluation of competing explanations.

The research design is structured to adjudicate between two distinct logics of state behavior. The first, material payoff responsiveness, predicts that escalation or compromise will track changes in external pressure, economic cost, or technical constraint. Under this logic, policy adjustment is expected when the marginal costs of resistance exceed its benefits. This assumption is consistent with broader nuclear policy frameworks that conceptualize state responses as adaptive to institutional and strategic constraints (Porel, 2025). The second, symbolic legitimacy payoff dominance, posits that state behavior aligns instead with moments of identity contestation, narrative reinforcement, and discursive emphasis on sovereignty and historical grievance, even when material incentives favor compromise. The central objective of the design is to determine which of these logics better accounts for observed patterns of nuclear decision-making.

To enable this evaluation, the paper specifies clear, observable implications for each logic. Evidence supporting the symbolic payoff argument is identified through the temporal alignment between heightened discursive emphasis on sovereignty, resistance, and normative entitlement, and concrete policy decisions such as escalation, negotiation stalling, or refusal of compromise. Crucially, this alignment must persist even under conditions in which material incentives would predict moderation. Conversely, if policy shifts consistently correspond to changes in sanction intensity, bargaining leverage, or capability constraints, the materialist explanation is strengthened, and the symbolic payoff argument is weakened.

Operationalization of key concepts is central to this design. Discursive embedding is defined as the extent to which nuclear technology is consistently framed in terms of sovereignty, resistance, and normative rights across institutional arenas. It is identified through the frequency, centrality, and repetition of these frames in leadership rhetoric, parliamentary discourse, and formal policy articulation. Symbolic legitimacy payoff refers to the reputational and ideological value derived from maintaining coherence with these narratives, particularly under conditions of external pressure. It becomes observable when decisions systematically prioritize narrative consistency over material gain. Bargaining rigidity is operationalized as the sustained refusal to accept materially advantageous agreements—including suspension arrangements, enrichment limits, or sanctions relief packages—despite rising economic costs. Finally, material incentive shifts are identified through changes in sanction severity, access to economic resources, and alterations in technological capacity, providing a baseline against which alternative explanations can be evaluated.

This design enables structured comparison within the case over time. Examining how discursive patterns, policy decisions, and external pressures evolve across key episodes allows the analysis to

assess whether nuclear behavior is more closely aligned with material cost–benefit adjustment or with the preservation of symbolic legitimacy. The focus is therefore not on isolated events, but on patterned relationships between identity narratives and strategic outcomes.

The scope conditions of the argument further clarify the boundaries of inference. The mechanism is expected to operate in contexts where legitimacy is ideologically grounded rather than procedurally derived, where strategic technologies possess high symbolic visibility, and where political survival is tied to maintaining narrative coherence. Under such conditions, symbolic payoffs are likely to become integrated into the utility structure, reshaping strategic calculation. By contrast, in settings where legitimacy is primarily electoral or where strategic programs lack public symbolic articulation, material incentives should retain explanatory dominance.

In this context, Iran provides strong analytical leverage. The persistence of bargaining rigidity despite sustained coercive pressure creates conditions under which the limits of materialist explanations become visible. Systematically testing whether identity-embedded symbolic payoffs account for this persistence allows the research design to rigorously evaluate utility transformation as an alternative framework for understanding nuclear bargaining behavior.

## **5. Empirical Findings: Identity-Embedded Utility in Iran**

This section presents the empirical findings by tracing observable patterns in Iran's nuclear policy across institutional, discursive, and strategic domains. The analysis focuses on four dimensions: institutional structures of legitimacy, discursive framing of nuclear technology, escalation patterns, and negotiation behavior under sustained external pressure.

### *5.1. Revolutionary Legitimacy and Institutional Structure*

The post-1979 political order in Iran is organized around a form of revolutionary legitimacy embedded in core state institutions and reproduced through their routine functioning. This legitimacy is anchored in the continuity of the 1979 revolution. It is reflected in constitutional arrangements that combine elected bodies with clerical oversight, particularly through the Supreme Leader's authority over strategic policy domains, including nuclear decision-making (Islamic Republic of Iran, 1989). Institutional decision-making is concentrated in bodies such as the Supreme National Security Council (SNSC), which coordinates policy across executive, military, and advisory institutions.

Empirical records show that official policy documents and institutional statements consistently frame nuclear development in terms of sovereignty and national rights. For example, reports submitted to the International Atomic Energy Agency (2005; 2007) document Iran's continued emphasis on its "inalienable right" to nuclear technology under the Nuclear Non-Proliferation Treaty. Similarly, statements issued through the European External Action Service (2020; 2025) during negotiation cycles repeatedly reference Iranian positions grounded in independence and non-subordination in diplomatic exchanges.

Legislative activity reflects similar patterns. Parliamentary debates following United Nations Security Council Resolutions 1737 and 1929 (2006; 2010) include repeated references to national sovereignty, particularly in discussions of enrichment continuation and responses to sanctions. Records of Majles deliberations during these periods show that policy discussions on budget allocations for nuclear development and technological infrastructure were frequently framed in terms of independence and resistance to external pressure.

Judicial and security institutions also help shape the boundaries of acceptable discourse. Legal provisions concerning national security and political activity regulate how nuclear policy is publicly discussed, reinforcing consistency in official framing (Schirazi, 1997). This is observable in the alignment between executive statements, parliamentary debates, and official media outputs, where

similar terminology—such as “national rights,” “resistance,” and “independence”—recurs across institutional platforms.

Leadership speeches provide further empirical evidence of this consistency. Public addresses delivered in 2010 following the adoption of Resolution 1929, and again in 2018 after the U.S. withdrawal from the Joint Comprehensive Plan of Action (JCPOA), repeatedly link nuclear policy to sovereignty and national dignity (Iran Primer, 2022). These references appear across domestic speeches, international forums, and official communications, indicating continuity across time and institutional settings.

Across these domains, the observable pattern is one of sustained consistency. Despite changes in administration—from Ahmadinejad to Rouhani to Raisi—and shifts in international conditions, institutional framing of nuclear policy remains stable. The recurrence of sovereignty-centered language across leadership discourse, parliamentary records, and policy documents indicates a coordinated pattern of institutional communication rather than isolated rhetorical variation.

## 5.2. Discursive Embedding of Nuclear Technology

Empirical material shows that nuclear technology in Iran is consistently framed through the language of sovereignty, independence, and national dignity across multiple communication channels. Leadership speeches, parliamentary debates, and state media outputs repeatedly present nuclear development as part of a broader narrative of political autonomy rather than as a purely technical program.

This pattern is particularly visible during key moments of international scrutiny. For example, following International Atomic Energy Agency inspection reports, official Iranian statements emphasized technological progress alongside references to independence and self-reliance (2007; 2009). Similarly, during negotiation phases documented by the European External Action Service (2020; 2025), Iranian officials consistently framed enrichment activities as expressions of national rights rather than technical compliance issues.

A shift in discourse is observable over time. During the early 1990s and late 1990s, nuclear development was more frequently described in terms of scientific advancement and modernization. However, by the mid-2000s—particularly after the referral of Iran’s nuclear file to the United Nations Security Council—official discourse increasingly incorporated references to sovereignty, resistance, and external pressure (2006). Parliamentary debates following Resolution 1737 (2006) and subsequent sanctions measures show a heightened emphasis on independence and historical grievances.

The timing of discursive intensification aligns with periods of external pressure. After Resolution 1929 (2010), leadership speeches and state media coverage show a marked increase in references to “national dignity” and “resistance.” A similar pattern appears after 2018, when the United States withdrew from the JCPOA (International Atomic Energy Agency, 2018). Statements issued during 2019–2021, coinciding with incremental breaches of enrichment limits, consistently paired technical developments with references to sovereignty and reciprocity.

State media reinforces this pattern by translating technical developments into narratives of national achievement. Reports on enrichment levels, centrifuge expansion, and facility development frequently emphasize independence and resilience. For example, coverage of enrichment increased to 20% in 2010 (Arms Control Association, 2010), and subsequent expansions after 2019 consistently framed these developments as indicators of national capability rather than as procedural deviations.

Across sources, a recurring empirical pattern is the co-occurrence of nuclear developments and sovereignty-centered language. References to independence and resistance regularly accompany announcements of enrichment expansion, inspection responses, and updates on negotiations. This co-occurrence appears across leadership speeches, parliamentary debates, and media outputs, indicating a consistent pattern of public framing across institutional domains.

### *5.3. Symbolic Payoff and Escalatory Behavior*

Empirical evidence shows a recurring temporal association between external pressure and subsequent escalation in nuclear activity. Following the adoption of United Nations Security Council Resolution 1929, Iran expanded enrichment activities to the 20% level shortly thereafter (2010). This shift occurred during a period marked by intensified financial restrictions and diplomatic isolation. Official statements released during this period repeatedly referenced legal entitlement under the Nuclear Non-Proliferation Treaty and national sovereignty.

A similar sequence is observable after the U.S. withdrawal from the JCPOA in May 2018. Beginning in 2019, Iran implemented a series of incremental steps, including exceeding the 3.67% enrichment limit, expanding stockpiles, and deploying advanced centrifuges. In 2024–2025, enrichment levels reached 60% (Albright, Burkhard, & Faragasso, 2025). Each stage of escalation was accompanied by official statements referencing reciprocity, national rights, and responses to external non-compliance. Records from the European External Action Service (2020; 2025) document these phased developments alongside ongoing diplomatic exchanges.

Across both periods, discursive patterns intensify alongside technical escalation. Leadership speeches in Iran delivered in 2010–2012 and again in the post-2018 period consistently employed terms such as “resistance,” “dignity,” and “independence,” reflecting the embedding of nuclear policy within sovereignty-based legitimacy narratives (Golmohammadi, 2018). Parliamentary debates during these periods reflect similar language, particularly in discussions of sanctions and nuclear policy decisions.

Additional patterns emerge when examining the domestic context. Periods of internal unrest—such as the 2009 post-election protests and the 2019 fuel protests—coincide with increased visibility of nuclear-related announcements. Public ceremonies marking nuclear achievements, including the unveiling of centrifuge advancements or enrichment milestones, increased during these periods, often accompanied by references to national pride and resilience.

The sequencing across cases shows a consistent pattern: the introduction or intensification of sanctions is followed by adjustments in nuclear activity, accompanied by increased frequency of sovereignty-centered language. Escalation occurs both during and outside formal negotiation periods, and technical developments often proceed in parallel with ongoing diplomatic engagement. Records from the International Atomic Energy Agency and the United Nations Security Council confirm that these developments span multiple reporting periods and institutional contexts.

### *5.4. Bargaining Rigidity under Material Incentives*

Empirical records of Iran's nuclear negotiations show repeated instances where materially beneficial agreements were available but not sustained. During the 2003–2004 negotiations with the EU-3 (France, Germany, and the United Kingdom), Iran agreed to a temporary suspension of enrichment under the Tehran Declaration and the Paris Agreement (International Atomic Energy Agency, 2004). These agreements included provisions for economic cooperation and recognition of peaceful nuclear rights. However, archival records show that the suspension was consistently described in official communications as voluntary and reversible, and negotiations collapsed in 2005.

Following the adoption of United Nations Security Council Resolution 1737 (2006) and subsequent sanctions culminating in Resolution 1929 (2010), economic pressure increased significantly. Despite these constraints, enrichment activities expanded, including the initiation of 20% enrichment after 2010. Diplomatic records indicate that negotiation channels remained active, yet policy adjustments did not align directly with the intensification of sanctions. Official statements during this period continued to refer to legal entitlements and sovereign rights.

The 2015 Joint Comprehensive Plan of Action represents a partial exception. The agreement provided sanctions relief and enabled limited economic reintegration (Valadbaygi, 2025). Official communications at the time emphasized the preservation of enrichment capability and national rights.

Following the U.S. withdrawal from the agreement in 2018, Iran implemented incremental departures from its commitments, including increases in enrichment levels and expansion of centrifuge use, while continuing negotiations with European actors.

Across these negotiation cycles, a consistent pattern is observable. Proposals involving suspension or limitation were frequently accompanied by public framing that emphasized sovereignty and dignity. Parliamentary debates and official statements often described such measures as conditional, temporary, or externally imposed. Media coverage during negotiation periods similarly highlighted asymmetries in obligations and rights.

The timing of negotiations, sanctions, and policy changes shows overlapping rather than sequential patterns. Periods of intensified sanctions—such as 2006–2010 and post-2018—coincide with ongoing negotiations and continued nuclear development. Reports from the International Atomic Energy Agency (2025) and European External Action Service (2020; 2025) confirm that technical developments and diplomatic engagement proceed in parallel across multiple phases.

Taken together, the empirical record shows a repeated alignment among three observable elements: the availability of negotiation options with potential economic benefits, continued or expanded nuclear activity, and the persistence of sovereignty-centered discourse. This pattern appears across multiple time periods, sanction regimes, and negotiation frameworks, and is documented across institutional and international sources.

## 6. Discussion

This section interprets the empirical findings through the lens of identity-embedded utility, arguing that Iran's nuclear bargaining behavior reflects a reconfiguration of how strategic payoffs are constituted rather than a departure from rational calculation. It situates bargaining rigidity within a framework in which symbolic legitimacy is internalized as a component of utility, reshaping the meaning of costs and benefits in nuclear decision-making. The discussion then evaluates this interpretation against rationalist and constructivist approaches and examines its implications, scope conditions, and external plausibility.

### 6.1. *Interpreting Identity-Embedded Utility*

The empirical findings suggest that the persistence of Iran's nuclear bargaining posture is best understood as the outcome of an internally restructured utility function rather than a deviation from rational strategic behavior. Instead of treating preferences as fixed and materially grounded, the evidence indicates that symbolic legitimacy becomes constitutive of utility itself. Nuclear decision-making, therefore, reflects a form of rationality in which sovereignty, ideological coherence, and regime legitimacy are not external constraints but intrinsic components of what is being maximized. This interpretation departs from conventional accounts that attribute resistance to misperception or incomplete information, and instead situates policy continuity within a reconfigured payoff structure in which symbolic and material elements are jointly evaluated (Wendt, 1999; Hopf, 2002). What appears as disproportionate resistance under materialist assumptions is thus consistent with a different ordering of strategic priorities.

Across the empirical sections, a consistent pattern emerges linking institutional continuity, discursive framing, and observed bargaining behavior. Political authority is grounded in legitimacy derived from revolutionary narratives, which shape the conditions under which policy choices are evaluated (Halliday, 2005). Nuclear technology is persistently framed within sovereignty-centered discourse across institutional arenas, extending its meaning beyond technical or strategic utility (Wendt, 1999). Periods of intensified external pressure coincide with stronger symbolic articulation, suggesting that escalation reinforces legitimacy-based returns rather than undermining them (Hopf, 2002). At the same time, negotiation outcomes indicate that materially advantageous compromises are constrained when they are perceived to undermine sovereignty or dignity. Taken together, these

patterns indicate that symbolic considerations are systematically incorporated into strategic evaluation, shaping how costs and benefits are assessed in practice.

Interpreted in relation to existing scholarship, these findings both align with and extend prior theoretical approaches. Rationalist models correctly emphasize strategic calculation and the persistence of cost–benefit reasoning, yet their assumption of exogenously given preferences limits their ability to account for sustained resistance under escalating material pressure (Fearon, 1995; Powell, 1990). The present analysis supports the rationalist insight that actors respond to incentives but demonstrates that the content of those incentives extends beyond material factors. Constructivist approaches, in turn, have shown that identity and norms shape state interests, yet they often leave unspecified how these elements become operational within decision-making processes (Katzenstein, 1996; Ruggie, 2002). The findings here address this gap by showing that symbolic legitimacy enters directly into the evaluation of strategic options, thereby influencing observable outcomes. This perspective preserves the logic of rational action while redefining the components through which utility is constituted (Wendt, 1999).

Importantly, what appears as rigidity under materialist models is not evidence of irrationality but of a different internalization of costs and benefits. Once symbolic legitimacy is treated as an endogenous component of utility rather than an external constraint, resistance to compromise becomes consistent with the maximization of utility. This distinction clarifies that preferences are not simply influenced by identity but are structurally reshaped through it, producing a reordering of strategic priorities rather than a deviation from rationality.

This interpretation has broader implications for understanding bargaining behavior in high-stakes security contexts. Apparent rigidity—particularly the rejection of economically beneficial agreements—can be understood as consistent with utility maximization once symbolic legitimacy is incorporated into the cost structure. Concessions are evaluated not only in terms of capability or economic relief but also in relation to their implications for ideological coherence and regime authority. When symbolic losses exceed anticipated material gains, resistance becomes the rational outcome. This suggests that policy instruments that rely primarily on escalating material pressure, such as sanctions, may be less effective when they fail to engage with the symbolic dimensions of state utility. Analytical models that omit these dimensions risk underestimating the durability of resistance in ideologically grounded regimes (Fearon, 1995).

At the same time, this interpretation remains subject to important scope conditions and limitations. The observed patterns are most likely to operate in contexts where legitimacy is ideologically grounded, publicly institutionalized, and closely tied to visible strategic programs. They may not generalize to settings where political authority is primarily procedural or where strategic capabilities lack symbolic salience. In addition, the measurement of symbolic payoff relies on qualitative indicators derived from discourse and institutional alignment, which may introduce interpretive bias despite efforts at triangulation. Alternative explanations, including strategic delay or domestic political factionalism, cannot be entirely excluded and may interact with identity-based dynamics. These considerations point to the need for further research that systematically compares cases across different regime types and develops more precise methods for capturing symbolic components of utility. Expanding the empirical scope beyond a single-case analysis would allow for a more robust assessment of the conditions under which these dynamics shape international bargaining outcomes.

## *6.2. Comparison with Existing Literature*

The findings of this study invite a reconsideration of how nuclear bargaining behavior is theorized across dominant approaches in international relations. Rationalist frameworks maintain that strategic interaction is governed by stable, materially defined preferences, in which actors adjust behavior in response to shifting costs and benefits under conditions of anarchy (Fearon, 1995; Schelling, 1980). From this perspective, sustained resistance under escalating sanctions is typically treated as anomalous, unless it is explained by imperfect information or commitment problems. The empirical patterns identified here partially align with the rationalist emphasis on strategic cal-

ulation; however, they diverge in a crucial respect. Cost–benefit reasoning remains operative, yet the content of what constitutes “cost” and “benefit” is transformed through the incorporation of symbolic legitimacy. This indicates a limitation in conventional models, which assume that utility is exogenously given and materially anchored. The findings, therefore, extend rationalist insights by demonstrating that preference structures themselves may undergo endogenous transformation under specific ideological conditions.

Constructivist scholarship provides a closer point of convergence by emphasizing that state interests are shaped through identity, norms, and intersubjective meanings (Ruggie, 2002). The empirical evidence strongly supports the claim that nuclear policy is embedded within broader narratives of sovereignty and resistance, reinforcing the constructivist argument that meaning structures political action. However, a gap persists regarding how identity translates into concrete decision-making trade-offs. While identity is often treated as constitutive of preferences, it is typically analytically separated from utility itself. The findings address this limitation by demonstrating that identity does not merely inform what states value but becomes internal to how value is calculated. This shift from preference formation to utility composition provides a more precise account of how symbolic commitments generate observable behavioral outcomes.

The argument also engages with the concept of audience costs in strategic interaction. Conventional accounts conceptualize audience costs as reputational penalties tied to signaling credibility, often grounded in domestic political accountability mechanisms (Fearon, 1994). The evidence presented here suggests a different configuration. Political costs are not primarily derived from procedural accountability but from the maintenance of ideological coherence within a legitimacy framework. This implies that audience costs are better understood as functions of identity consistency rather than institutional sanction. Such a reinterpretation challenges the assumption that domestic audiences operate as external constraints on leadership and instead situates them within a broader ideological structure that shapes the definition of acceptable policy.

The study further intersects with securitization approaches, which emphasize the role of discourse in constructing security threats and legitimizing extraordinary measures (Buzan et al., 1998). The findings are consistent with the view that language and framing are central to political action; however, they extend this insight by showing that discursive processes do more than justify policy—they reshape the incentive structure within which decisions are made. Nuclear technology is not only securitized but symbolically integrated into narratives of sovereignty, generating legitimacy-based payoffs that influence strategic choice. This suggests that securitization theory captures the discursive dimension of politics but does not fully account for how these discourses become embedded in utility calculations.

Taken together, these findings support a reformulation of utility as a composite structure that includes both material and symbolic components, while preserving the analytical value of strategic calculation (Hopf, 2002). More broadly, they provide a mechanism for integrating constructivist insights into models of bargaining, thereby addressing a longstanding divide between rationalist and interpretive approaches.

### *6.3. External Plausibility: Extension to North Korea*

This subsection does not present a full comparative case study but rather a plausibility probe designed to assess whether the proposed mechanism travels beyond the Iranian case. The analysis is therefore interpretive and selective, focusing on whether comparable patterns emerge under similar ideological conditions rather than establishing causal equivalence across cases.

The comparison suggests that the first stage of the mechanism—legitimacy anchoring—is present in both contexts, albeit in different institutional forms. In North Korea, political authority is grounded in an ideologically consolidated system centered on sovereignty, autonomy, and resistance, articulated through the doctrine of *Juche* and reinforced through dynastic continuity. As in Iran, legitimacy is derived less from procedural accountability or economic performance than from adherence to foundational narratives of independence (Arslan, Mustafa, & Liaqat, 2025). This par-

allel supports the claim that identity-based legitimacy can constitute the conditions under which symbolic elements enter utility (Hopf, 2002).

Consistent with the second stage of the mechanism, nuclear capability is discursively embedded within these legitimacy narratives rather than treated as a purely instrumental asset. Periods of intensified external pressure, including the expansion of sanctions, were accompanied not by discursive moderation but by an intensified emphasis on self-reliance and external threat. This pattern suggests that coercive pressure may deepen rather than weaken identity-centered narratives, strengthening the symbolic dimension of nuclear policy (Buzan et al., 1998).

Evidence of symbolic payoff generation is also observable. Continued weapons development and strategic demonstrations occurred despite substantial economic constraints, producing not only deterrent signaling but legitimacy-based returns. Domestically, such actions reinforced regime credibility and elite cohesion; externally, they increased strategic visibility. These patterns indicate that nuclear capability carries symbolic value that contributes directly to the utility structure (Hopf, 2002).

The persistence of bargaining rigidity further supports the presence of utility restructuring. Offers involving partial denuclearization in exchange for material relief were repeatedly resisted, suggesting that concession is evaluated not only in material terms but also in relation to ideological coherence. Partial rollback imposes symbolic costs by undermining claims to sovereign resilience. In this sense, resistance remains consistent with utility maximization once symbolic legitimacy is internalized (Fearon, 1995; Wendt, 1999). In contrast, alliance-based nuclear governance structures—such as coordinated deterrence frameworks—prioritize strategic alignment and institutional interoperability over identity-based legitimacy claims (North Atlantic Treaty Organization, 2025).

At the same time, important differences clarify the scope conditions of the argument. While the structure of utility transformation appears to travel across cases, its discursive content varies. Iranian nuclear discourse is often articulated through legal rights and sovereignty within an international normative framework, whereas North Korean discourse emphasizes existential threat and militarized self-reliance. These variations shape how external pressure is interpreted but do not alter the underlying mechanism (Ruggie, 2002).

A contrast with cases where symbolic embedding is weak further clarifies these boundaries. In Libya, nuclear development was not deeply integrated into regime legitimacy narratives, and external pressure led to the program's abandonment at limited internal cost. This suggests that symbolic embedding must be actively constructed; when absent, material incentives retain greater explanatory power.

Taken together, this plausibility probe indicates that identity-embedded utility may extend beyond a single case, while remaining contingent on identifiable ideological and institutional conditions. The analysis supports the broader claim that when legitimacy is anchored in identity and discursively embedded in strategic programs, symbolic payoffs become integrated into utility, shaping bargaining behavior under coercion.

#### *6.4. Scope Conditions, Limitations, and Future Research*

The explanatory leverage of this study depends on clearly specified scope conditions. The findings indicate that identity-embedded utility operates most strongly in contexts where political legitimacy is grounded in ideologically constituted narratives and institutionally reproduced across governing structures (Hopf, 2002). Under such conditions, strategic technologies acquire meaning beyond their instrumental function, becoming linked to historically embedded claims about sovereignty and resistance (Halliday, 2005). Where legitimacy is primarily electoral or performance-based, symbolic commitments are likely to exert weaker constraints, allowing material incentives to dominate decision-making (Fearon, 1995; Morrow, 1994). The argument is therefore conditional, with explanatory power dependent on the visibility and institutionalization of identity narratives.

Several limitations qualify the interpretation of these findings. The single-case design provides analytical depth but limits generalizability across regime types and geopolitical contexts. Alternative mechanisms—including strategic delay, bureaucratic politics, or shifting threat perceptions—may operate alongside identity-based dynamics and require further disentanglement (Fearon, 1995; Waltz, 1996). Methodologically, the reliance on qualitative discourse analysis introduces interpretive challenges. Although triangulation across sources mitigates bias, identifying symbolic payoffs depends on reading publicly available materials, which may reflect strategic communication rather than underlying decision-making processes (Hopf, 2002).

This introduces an important inferential limitation. Public discourse does not necessarily align with internal decision-making processes and may instead serve as strategic signaling to domestic and international audiences. As a result, the analysis cannot directly observe underlying preferences, and causal claims rely on consistent patterns across sources rather than direct access to elite motivations. This constrains the strength of causal inference and requires that conclusions be interpreted as probabilistic rather than definitive.

These limitations point to several avenues for future research. Comparative analysis across cases with varying legitimacy structures would allow for systematic testing of the scope conditions identified here. Extending the framework to other ideologically grounded regimes would clarify whether the mechanism operates consistently or interacts with context-specific factors. Methodologically, future work could combine discourse analysis with process tracing of internal decision-making records, where available, to strengthen causal inference. There is also a need to develop more precise operational indicators of symbolic payoff to enable more rigorous cross-case comparison.

The findings also carry implications for policy design. Strategies that rely primarily on escalating material pressure assume that increasing costs will induce compromise. However, when symbolic legitimacy is embedded within utility, external pressure may reinforce resistance by increasing the value of defiance. Under such conditions, coercive approaches may have diminished or counterproductive effects. More effective engagement would require recognizing the symbolic dimension of strategic programs and designing approaches that reduce the loss of legitimacy rather than focusing exclusively on material exchange.

## 7. Conclusion

This study demonstrates that persistent nuclear bargaining rigidity in ideologically grounded regimes is best explained as a transformation in the structure of utility rather than a failure of rationality. In the Iranian case, strategic decision-making incorporates symbolic legitimacy as an intrinsic component of payoff calculation, such that sovereignty, resistance, and ideological coherence are evaluated alongside material incentives. Under these conditions, concessions impose legitimacy costs that can outweigh economic or strategic gains, rendering continued resistance a rational outcome within a reconfigured utility framework.

The empirical analysis shows a consistent alignment among legitimacy structures, the discursive embedding of nuclear technology, and observable policy behavior. Nuclear development is systematically framed as an expression of sovereign authority, while escalation and negotiation patterns correspond more closely to moments of identity reinforcement than to shifts in material pressure. The extension of this framework to North Korea further supports the plausibility of the mechanism beyond a single case, indicating that identity-embedded utility can generate similar patterns of resistance under conditions of external constraint.

The central contribution of this study is to show that symbolic legitimacy can function as a constitutive component of utility in high-stakes bargaining. This insight has important implications. Analytically, it calls for models of international bargaining to incorporate non-material payoffs into their understanding of strategic behavior. In practice, it suggests that coercive strategies based solely on material pressure may be ineffective when they reinforce identity-based narratives of resistance.

These findings are necessarily bounded by specific conditions, particularly when legitimacy is ideologically grounded and when strategically salient technologies are publicly embedded in identity narratives. Future research should extend this framework through systematic cross-case comparison and develop more precise methods for measuring symbolic components of utility. Such efforts would help clarify the conditions under which identity-embedded utility shapes strategic outcomes and refine its broader applicability in international politics.

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