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Public Support for Nuclear Proliferation: Experimental Evidence from Brazil

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Abstract

How do mass publics in nonnuclear weapon states form their preferences over the acquisition of nuclear weapons? We field a survey experiment in Brazil, a possessor of uranium-enrichment capabilities with a long history of nuclear ambitions. Three sets of results support the view that members of the public approach nuclear proliferation strategically, that is, by taking into account how their home state interacts with enemies and allies alike. First, the external security environment is a major driver for individual-level preferences: when security is plentiful, only a small minority of the public in Brazil supports proliferation, but a deterioration of external conditions engenders a high minority in support for nuclear-weapon acquisition. Second, the mere extension by the United States of conventional security assurances suffices to dampen public support for an indigenous nuclear deterrent, restoring a majority view opposing proliferation. Third, conventional security assurances shape public sentiment on nuclear acquisition irrespective of whether they are credible or not. These results contribute to the effort currently unfolding in the scholarly community to make sense of how citizens outside the United States think about international security in a nuclear world.

Resumen

¿Cómo se forman las opiniones de la ciudadanía de los Estados no poseedores de armas nucleares sobre la adquisición de armas nucleares? Realizamos un experimento de encuesta en Brasil, un país con capacidad de enriquecimiento de uranio y con una larga historia de ambiciones nucleares. Tres conjuntos de resultados apoyan la opinión de que los ciudadanos abordan la proliferación nuclear de forma estratégica, es decir, teniendo en cuenta cómo su Estado interactúa tanto con sus enemigos como con sus aliados. En primer lugar, el entorno de seguridad exterior es un importante impulsor de las preferencias a nivel individual: cuando hay mucha seguridad, solo una pequeña parte de los ciudadanos brasileños apoya la proliferación, pero un deterioro de las condiciones externas da lugar a una gran minoría que apoya la adquisición de armas nucleares. En segundo lugar, la mera ampliación por parte de Estados Unidos de las garantías de seguridad convencionales basta para mermar el apoyo público a una fuerza de disuasión nuclear autóctona, restableciendo una opinión mayoritaria contraria a la proliferación. En tercer lugar, las garantías de seguridad convencionales

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influyen en la opinión pública sobre la adquisición de armas nucleares, independientemente de que sean creíbles o no. Estos resultados contribuyen al esfuerzo que se está llevando a cabo en la comunidad académica para entender qué piensan los ciudadanos de fuera de Estados Unidos sobre la seguridad internacional en un mundo nuclear.

Résumé

Comment le grand public dans les États non dotés de l'arme nucléaire marque-t-il sa préférence pour l'acquisition de l'arme nucléaire ? Nous avons mené une étude expérimentale au Brésil, un pays possédant des capacités d'enrichissement de l'uranium, avec une longue histoire d'ambitions nucléaires. Trois séries de résultats viennent à l'appui de l'opinion selon laquelle le public a une approche stratégique de la prolifération nucléaire, c'est-à-dire qu'il prend en compte la manière dont son État d'origine interagit aussi bien avec ses ennemis qu'avec ses alliés. Premièrement, le climat de sécurité extérieure est un facteur essentiel pour les préférences individuelles : lorsque la sécurité est assurée, seule une faible minorité du public brésilien soutient la prolifération, mais une détérioration des conditions extérieures entraîne une forte minorité à se prononcer en faveur de l'acquisition d'armes nucléaires. Deuxièmement, la simple extension des garanties de sécurité conventionnelles par les États-Unis suffit à freiner le soutien du public en faveur d'une dissuasion nucléaire nationale et à ramener l'opinion de la majorité vers une opposition à la prolifération. Troisièmement, les garanties de sécurité conventionnelles influencent l'opinion publique quant à l'acquisition du nucléaire, qu'elles soient ou non crédibles. Ces résultats s'inscrivent dans le cadre des efforts actuellement déployés dans la communauté scientifique pour donner un sens à la manière dont les citoyens vivant en dehors des États-Unis conçoivent leur sécurité internationale dans un monde nucléaire.

Keywords: security assurances, nuclear proliferation, political psychology, nuclear latency
Palabras clave: Garantías de seguridad, proliferación nuclear, psicología política, latencia nuclear
Mots clés: garanties de sécurité, prolifération nucléaire, psychologie politique, latence nucléaire

Introduction

In this article, we experimentally explore the conditions under which citizens in a nonnuclear possessor will support the acquisition of nuclear weapons. Up to date, the bulk of experimental scholarly work in the field has focused on public support for nuclear-weapon *use* (e.g., Sagan and Valentino 2017; Carpenter and Montgomery 2020; Sukin 2020b; Allison, Herzog, and Ko 2022). By adding to the nascent literature on public support for nuclear-weapon *acquisition* (Ko 2019; Sukin 2020a), we shed light onto one of the most important questions afflicting international security today: what policy decisions might best contribute to a world without further nuclear proliferation? Answers to this question are urgent at a historical juncture where great-power competition threatens to undermine the global nonproliferation regime (Gibbons and Herzog 2022), and render the major players in the international system less effective in curbing proliferation (Gheorghe 2019).

Making sense of public preferences for nuclear proliferation matters because even if the critical decisions about acquisition are made by small groups of policymakers in tightly controlled elite circles, the choice to "break out" is so revolutionary that it requires wider social legitimation. As previous work has shown, when issues of national security are at stake, even nonelected officials take heed of public opinion (Lin-Greenberg 2021). Additionally, populist leaders the world over have in recent years energized sections of their popular base, polarizing society with the view to push back against traditional elite orthodoxy on a range of sensitive policy areas, including international security. Public opinion can therefore play a significant role in shaping up the context within which decisions for nuclear acquisition or forbearance are made.

We explore public sentiment toward nuclear acquisition by fielding a survey experiment to a national sample in Brazil. In doing so, we proceed in three steps. First, we test whether and how changes in the external security environment drive public preferences in a nuclear latent state. Second, we assess whether the introduction of conventional security guarantees by the United States

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affects public support for proliferation in scenarios of security scarcity. Third, we inspect whether the level of credibility of these US conventional security guarantees shapes public attitudes toward proliferation. We consider Brazil to be an ideal setting for this study for several reasons. Brazil is a nonnuclear possessor that features significant nuclear technology capabilities, increasing the plausibility of a "break out" scenario. More specifically, it possesses facilities for uranium milling and mining, uranium conversion, nuclear energy generation, and uranium enrichment (Kassenova 2014). With the materials and technical expertise required to indigenously produce fissile material (Spektor, Kassenova, and Florentino 2019), Brazil is a highly latent nuclear state (Herzog 2020). Furthermore, nuclear-technology capabilities have for decades coexisted with heated domestic political contention around nuclear choices (Spektor 2016, 2019), further anchoring our experimental scenario in reality. Contemporary Brazil is a good case for experimental treatment as well because public assessments of the external threat environment are so divisive: while one half of the population believes the international environment to be benign and safe, the other half sees it as fundamentally malign and threatening (Haerpfer et al. 2020). Last but not least, Brazil is a good setting to probe the effect of foreign security assurances on domestic support for proliferation because the country has for generations lived under the shadow of US hegemony in the Western Hemisphere. Firmly embedded in the US alliance system since World War II and the Rio Pact (1947), successive administrations in Brazil have turned to the United States for protection against actual or potential enemies. Together, these features allow for great variation on our dependent variable of interest, that is, support among mass publics for an indigenous nuclear deterrent.

We obtain three main results. We find that a deterioration in the external security environment—even when the nature of the threat is nonnuclear—expands the pool of individuals in the public who support nuclear-weapon acquisition from a low minority (26.4 percent) to a high minority (45.1 percent). In addition, we find that the introduction of US conventional security guarantees markedly shrinks domestic support for proliferation, suggesting that the mere presence of American protection can operate as a substitute for proliferation. Finally, our study also shows that US conventional security guarantees dampen public support for proliferation irrespective of how credible they are.

These results help advance the literature on the acquisition of nuclear weapons on two separate fronts. On the one hand, we provide empirical validation at the level of the individual to recent theoretical work positing that actors approach nuclear proliferation strategically, that is, by attending to the interactions between a nuclear aspirant, her allies, and her enemies (Monteiro and Debs 2014; Debs and Monteiro 2017). On the other hand, by providing the first experimental evidence on nuclear acquisition from Brazil—a relatively understudied case of nuclear latency—we contribute to the effort currently ongoing in the scholarly community to make sense of how citizens outside the United States think through their nuclear choices (Ko 2019; Sukin 2020a, 2020b; Allison, Herzog, and Ko 2022).

The next section presents our theoretical expectations and hypotheses. We then lay out our experimental design before presenting results. The concluding section discusses our main findings and explores the implications that follow.

Theoretical Expectations

States do not acquire nuclear weapons lightly. Sensitive technologies are hard and expensive to develop, great-power patrons can turn against the proliferating plans of their weaker clients, and adversaries can attack a potential proliferator preemptively before their nascent capabilities become fully operational (Knopf 2012; Debs and Monteiro 2017). Given these proliferation costs, scholars have advanced three distinct but related points. First, they have argued that states living in benign external security environments have less incentive to proliferate than their peers in environments where security is scarce (e.g., Sagan 1996/1997; Jo and Gartzke 2007; Monteiro and Debs 2014). When an external threat exists, states determine "whether the threat is dire enough that the potential proliferator perceives nuclear weapons as yielding a security benefit in mitigating it" (Monteiro and Debs 2014, 20). Second, scholars argue that nuclear security guarantees from a powerful ally can attenuate the insecurity of states, incentivizing them not to proliferate (Jo and Gartzke 2007; Tertrais 2012; Bleek and Lorber 2014; Monteiro and Debs 2014). And third, scholars discuss whether these nuclear security guarantees need to be credible in order to induce nonproliferation: the conventional wisdom has it that guarantees can substitute for proliferation only if they are credible (Sagan 1997; Singh and Way 2004; Jo and Gartzke 2007; Monteiro and Debs 2014), but recent experimental research has shown that high credibility guarantees might not in themselves be reassuring (Sukin 2020a).

In this article, we draw inspiration from these arguments to experimentally test public support for proliferation in Brazil. To ensure the ecological validity of our

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experiment, we adapt the insights from the extant literatures to our specific context. Our first adaptation pertains to the nature of the external threat: rather than focus on a nuclear threat, we confront respondents to hypothetical scenarios where Brazil faces a *conventional* threat. The possibility of nuclear war has been rare in Latin America. Since the onset of the nuclear age, only one state in the region has ever confronted the prospects of nuclear war, and then only for a very short period (Cuba during the missile crisis of October 1962). In contrast, during the same time frame, the region has seen numerous conventional conflicts (Mares 2012). Since a hypothetical survey scenario where Brazil confronts a nuclear threat may strike respondents as implausible, putting them off the questionnaire and thereby weakening treatment effects, we built our scenario around a conventional threat. We therefore expect the following relationship:

H1: *Public support for nuclear proliferation will be higher in environments where nonnuclear external security threats are acute compared to security environments where external threats are less intense or nonexistent.*

Our second adaptation refers to the nature of the US security guarantee. Whereas previous studies explore the role of *nuclear* security assurances and guarantees on demand for proliferation, our hypothetical scenarios feature *conventional* guarantees.[1] We do this to be consistent with the historical evolution of US–Brazil security relations, a bilateral dynamic in which the offering by the United States of *nuclear* security assurances is exceedingly unlikely. Sticking to conventional security assurances has the additional advantage of allowing us to intervene in an important scholarly debate on the effects of security guarantees: can nonnuclear assurances ever work as an effective nonproliferation tool? The bulk of the extant literature either implies or posits that conventional security guarantees are incapable of convincing a nuclear aspirant to forgo nuclear weapons because conventional protection is too expensive and too inefficient a tool to cope with threats in a world where weapons of mass destruction exist (Bailey 1993). A recent quantitative study finds no evidence that conventional protection curbs proliferation motives (Reiter 2014). According to this line of reasoning, for security guarantees to be effective nonproliferation tools, they need to extend a nuclear umbrella (Tertrais 2012). Yet, some scholars have questioned this view. For example, Bleek and Lorber (2014, 434) argue that the extension of a conventional military and diplomatic umbrella over Japan should be at least partially credited with inducing nuclear forbearance. Knopf (2012) in turn suggests that policymakers sometimes act as if conventional assurances can indeed reassure, as in the case of the George W. Bush administration in the wake of the terrorist attacks of September 11, 2001, which laid down the foundations for nonnuclear assurances in its Quadrennial Review and its National Security Strategy. Our findings help adjudicate this debate. To be sure, the downside of our choice to test the role of conventional rather than nuclear protection is that we lose comparability. After all, other experimental research in the field has focused specifically on the effects on public sentiment of protection provided through nuclear umbrellas (Ko 2019; Sukin 2020a).[2] We acknowledge this limitation, but hope to contribute to experimentally illuminating new phenomena (the effect of conventional protection) in the field of global nuclear politics. We therefore hypothesize:

H2: *Given an acute nonnuclear external security threat, public support for proliferation will decrease in the presence of conventional security guarantees from a powerful ally compared to the absence of such guarantees.*

Finally, we experimentally test whether conventional security guarantees provided by the United States need to be credible if they are to shape individual-level preferences over nuclear proliferation. By exploring whether the level of credibility of conventional patron protection is a deal breaker for nuclear forbearance, we expand the experimental literature beyond its current focus on the credibility of nuclear security guarantees.

H3: *Given an acute nonnuclear external security threat, public support for proliferation will decrease in the presence of high credibility conventional security guarantees from a powerful ally.*

H4: *Given an acute nonnuclear external security threat, public support for proliferation will increase in the presence of low credibility conventional security guarantees from a powerful ally.*

Experimental Design

We ran our survey experiment on a national sample of 2001 Brazilians in December 2019. Respondents were

1 In the analysis that follows, we use the terms guarantee and assurance interchangeably. Unless otherwise noted, the expressions refer to the promise of protection from a security patron to a client state.

2 Existing literatures on the relationship between conventional security assurances and public attitudes do not normally tackle nuclear proliferation dynamics. We thank an anonymous reviewer for bringing up this point.

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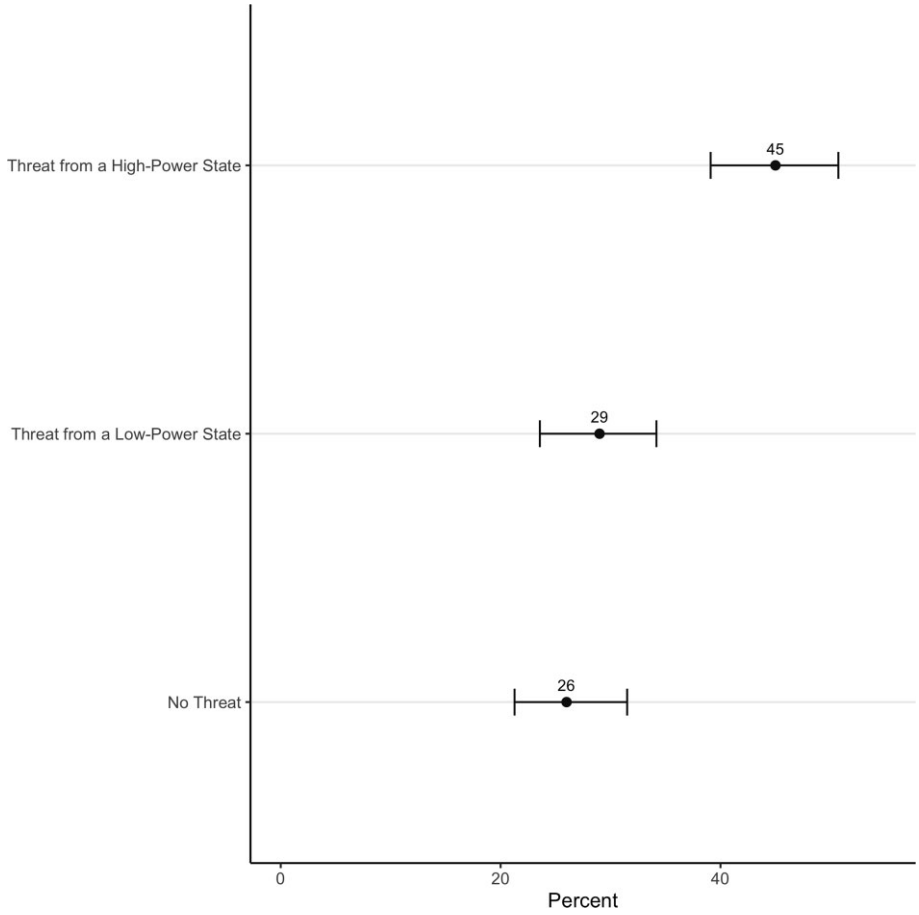

Figure 1. Support for proliferation under different types of external security environment.
Note: The points are estimates and the horizontal bars are 95 percent confidence intervals.

recruited by the Datafolha Institute, which used quotas (age, education, gender, income, and region) to reflect the demographics of the Brazilian population.[3] The experiment, shown in figure 1 (online supplement appendix item 7), proceeded as follows. After participants consented to participate in the survey, they were asked standard demographic questions. We then administered the experimental portion of the study by telling participants they would be asked to read a hypothetical situation about their country's acquisition of nuclear weapons. They were then randomly split into seven groups, before responding to the outcome measure, that is, whether they support a hypothetical government decision to acquire nuclear weapons.

In the first three groups, respondents were presented with scenarios that varied information about the nature of the external security environment. In the first group ($N = 288$), respondents heard that Brazil "does not have an enemy country strong enough to threaten its security" (*no threat*). They were then asked about their support for the acquisition of nuclear weapons. This group enabled us to determine the baseline public preference on nuclear proliferation. A second group ($N = 284$) heard that "a weak enemy country poses a major military threat to Brazil's security" (*threat from low-power state*), and a third group ($N = 285$) heard that "a powerful enemy country poses a major military threat to Brazil's security" (*threat from high-power state*), before being asked whether or not they support the acquisition of nuclear weapons. In so doing we emphasize the importance of considering a potential proliferator's regional security dynamics, and more specifically whether they face powerful regional adversaries.

This first set of treatments result in three different ways of measuring support for proliferation by

3 See items 1 and 2 in the online appendix for sample composition, sampling strategy, and balance tests.

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allowing comparisons between (1) the baseline and a scenario of "threat from low-power state," (2) the baseline and a scenario of "threat from high-power state," and (3) the "threat from high-power state" and "threat from low-power state" scenarios. In the comparison in item (3), the information about the level of power of the state posing the external threat is in practice working as a proxy for the significance of that threat. As a result, this piece of information is driving the treatment effect on support for proliferation.[4] Taken together, these treatment conditions capture how different external security environments—on a range from plentiful to scarce—yield differential effects on public support for proliferation (hypothesis 1).

To increase experimental control over respondents' assumptions about the scenario of acute external insecurity, we informed a fourth group of respondents ($N = 283$) that Brazil faces a threat from a high-power state but lacks US conventional protection ("Consider that a powerful enemy country poses a major military threat to Brazil's security. The United States says it will not protect Brazil"). We create this treatment because, without an explicit cue of the absence of an ally's security guarantee, respondents might inadvertently assume that the United States would protect Brazil in the face of an external threat from a high-power enemy, potentially biasing our results. This strategy is in line with recent experimental research that highlights the importance of controlling for contextual factors that can affect beliefs about features of the scenario through "information leakage" (Dafoe, Zhang, and Caughey 2018).

To determine whether support for proliferation is affected by the presence of conventional security guarantees by a powerful ally (hypothesis 2), we told a fifth group of respondents ($N = 287$), "Consider that a powerful enemy country poses a major military threat to Brazil's security. The United States says it will protect Brazil" (*US conventional security guarantee*). We then asked respondents to indicate their level of support for the decision to proliferate. We primed the United States as the powerful ally in the vignette to increase its external validity: the United States is the obvious choice of protector because it has for several decades been the sole hegemon in the region Brazil inhabits. In the event of a significant military threat to Brazil, it is plausible to expect the United States (rather than any other country) to boost its conventional security commitment to Brazil, thereby mitigating Brazil's potential disposition to nuclearize. Indeed, observational research has shown that a clear majority of Brazilians spontaneously identify the United States (51.29 percent) as a source of protection, with China trailing in the second position far behind (5.5 percent) (Spektor and Fasolin 2021). These figures attenuate potential concerns that respondents might perceive the choice of actor inconsistent with the treatment being manipulated, which could affect treatment effects (Brutger et al. 2022).[5]

Finally, the remaining respondents were assigned to treatments that sought to determine whether in a scenario of acute external threat posed by a powerful state, high-credibility conventional security guarantees by the United States affect support for proliferation compared to low-credibility guarantees (hypotheses 3 and 4). To create propitious experimental conditions, we picked Brazilian government official expressions of trust in the US security guarantee as a proxy for their level of credibility. National elites are in an advantageous position to shape public perceptions in national security matters in general (Myrick 2021), and in nuclear politics in particular (Herzog, Baron, and Gibbons 2022). Respondents assigned to the high credibility treatment ($N = 284$) heard, "Consider that a powerful enemy country poses a major military threat to Brazil's security. The U.S says it will protect Brazil, and the Brazilian government says it trusts this promise." Those assigned to the low credibility condition ($N = 290$) heard, "Consider that a powerful enemy country poses a major military threat to Brazil's security. The U.S. says it will protect Brazil, and the Brazilian government says it does not trust this promise." After administering these vignettes, we asked participants whether or not they support a government policy to proliferate.

Experimental Results

External Security Environments and Support for Proliferation

Figure 1 shows how individuals respond to three different types of external security environment: no threat, threat from low-power state, and threat from a high-power state. Overall, we find that when the external

4 It should be noted that the comparisons in items (1) and (2) differ in more than one respect by bundling together the level of threat and the type of country posing the threat, making it impossible for us to precisely identify which of these two factors is driving support for proliferation.

5 One limitation of this treatment is that choosing the United States as the source of protection excludes the possibility that the United States might be the source of threat itself, complicating our ability to compare the "US conventional security guarantee" scenario to the "threat from a high-power state" scenario.

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security environment deteriorates, moving from plentiful to scarcer security, public support for proliferation increases. More specifically, support for proliferation in the "no threat" scenario is limited to a low minority of 26.4 percent. Low minority support is maintained in the "threat from low-power state" scenario, albeit with a minor, statistically insignificant increase of 2.5 percentage points when compared to the "no threat" scenario. In contrast, in the "threat from a high-power state" scenario, support for proliferation is 18.7 percentage points higher than the baseline ("no threat" scenario), reaching a high minority of 45.1 percent. This result is statistically significant at p-value < 0.01 and it is robust to a number of control variables (online supplement appendix item 3.2). Results are stable when we change the baseline scenario of comparison: support for proliferation increases 16.2 percentage points ($p < 0.05$) when the source of threat changes from "low-power state" to "high-power state."[6] We therefore conclude in line with hypothesis 1 that a deterioration in the external security environment markedly increases public support for nuclear proliferation.[7]

Support for Proliferation and US Conventional Security Guarantees

Brazilians are sensitive to American promises of protection. When respondents confronting a threat from a high-power state hear that US conventional security guarantees are in place, support for proliferation is 13.1 percentage points less popular than in an equally threatening scenario that lacks explicit security guarantees from the United States (figure 2). More specifically, the introduction of conventional security guarantees shrinks support for proliferation from 45.2 to 32.1 percent among respondents in this group of comparison. The effect is statistically significant at the $p < 0.05$ level and robust to a number of control variables (online supplement appendix item 3.2). Importantly, the significance of this result is maintained after we apply an FDR correction ($p < 0.01$) (online supplement appendix item 4). Our experimental results therefore confirm hypothesis 2 on the effect of the presence of US conventional security guarantees on public support for nuclear-weapon acquisition.

Support for Proliferation and the Credibility of US Conventional Security Guarantees

Conventional security assurances from the United States dampen Brazilians' support for nuclear proliferation irrespective of how credible they are. As figure 3 shows, different levels of credibility do not moderate the critical effect of assurances on public demand for nuclear weapons. Average support for proliferation is only slightly higher (1.8 percentage points) in the low credibility scenario (34 percent) than in the high credibility one (32.2 percent), but these results are statistically insignificant at conventional levels ($p < 0.1$). These results therefore disconfirm hypotheses 3 and 4.[8]

Conclusion and Discussion

The widespread availability of dual technologies among nonnuclear-weapon states is a source of constant concern for those who fear that nuclear acquisition might have a destabilizing effect on world politics. As the international system becomes more competitive, scholars and policymakers alike will have to grapple with the renewed prospects of nuclear proliferation. We used a survey experiment to investigate the core security dynamics that could affect public support for nuclear proliferation in Brazil, a highly latent nuclear state. The experimental results we report broaden our understanding of the proliferation process among latent nuclear states, offer important messages for the nonproliferation community, and suggest potentially valuable openings for future research.

First, a marked decline in international security may dramatically expand public support for the acquisition of nuclear weapons. We find that a deterioration in the external security environment—even when the nature of the threat is nonnuclear—drives support for proliferation from a low minority to a high minority of the Brazilian population, splitting the sample into two roughly equal camps, one supporting proliferation, another one opposing it. These findings are in line with a long-standing tradition in the study of nuclear politics that posits the centrality of security considerations in processes of nuclear-weapon acquisition (e.g., Sagan 1996/1997). The fact that acute external threats profoundly polarize

6 These results remain statistically significant after we apply a false discovery rate (FDR) correction: scenario of "threat from high-power state" ($p < 0.01$) and scenario of "threat from a low-power state" ($p = 0.016$). For the full results of FDR correction tests, see online appendix item 4.

7 In online appendix item 5, we present additional iterations of "threat from high-power state" treatments with other specifications.

8 Simulations in the online appendix (item 3.1, table 12, model 4) dispel the possibility that these findings are driven by lack of power in the experiment.

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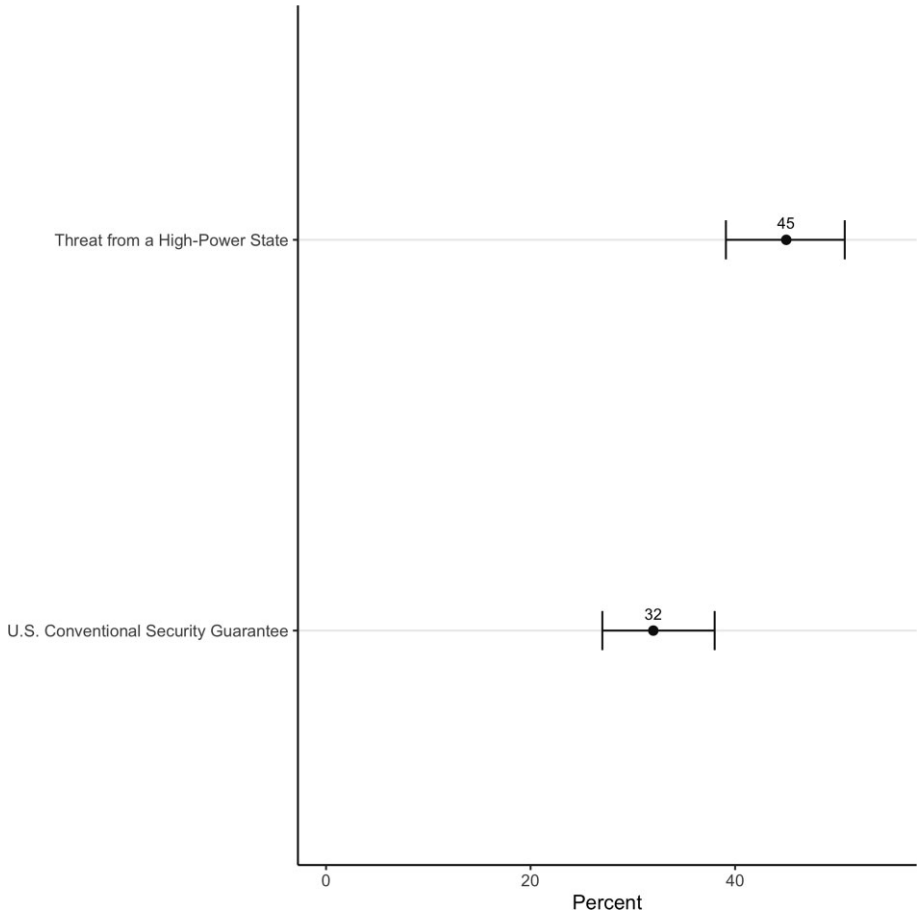

Figure 2. Support for proliferation with and without US conventional security guarantees.
Note: The points are estimates and the horizontal bars are 95 percent confidence intervals.

domestic society over the development of a nuclear deterrent is worrisome because political leaders bent on proliferating might be emboldened to pursue nuclear weapons in the knowledge that a large minority of the public is likely to have their back. If hawkish minorities can be highly consequential for the decision to use nuclear weapons (Haworth, Sagan, and Valentino 2019), our findings suggest that they too can play a role in shaping up public sentiment around proliferation.

Second, it is time for policymakers, scholars, and activists the world over to seriously explore the potential contribution of conventional security guarantees as a nonproliferation instrument. We find that conventional security guarantees provided by the United States in scenarios of acute insecurity can be valuable tools to help large pro-proliferation minorities dissipate. This is not to suggest that the conventional wisdom in the scholarly and policy communities according to which conventional security guarantees are ill-equipped to reassure nonnuclear-weapon states is wrong. Rather, our findings suggest that it might be incomplete. Security commitments from the United States may have different effects on public demand for nuclear weapons under different external security conditions. That American conventional security guarantees reassure citizens in a protégé confronting an acute but nonnuclear threat should give us pause and prompt us to find out whether these dynamics from Brazil travel elsewhere.

Third, the level of credibility of US security guarantees does not shape demand for proliferation in a context marked by conventional threats and conventional protection. We show that low credibility guarantees by the United States do not in themselves drive support for proliferation, while high credibility guarantees are not in themselves reassuring. What the explanation for our findings might be remains unclear. It might be the case that

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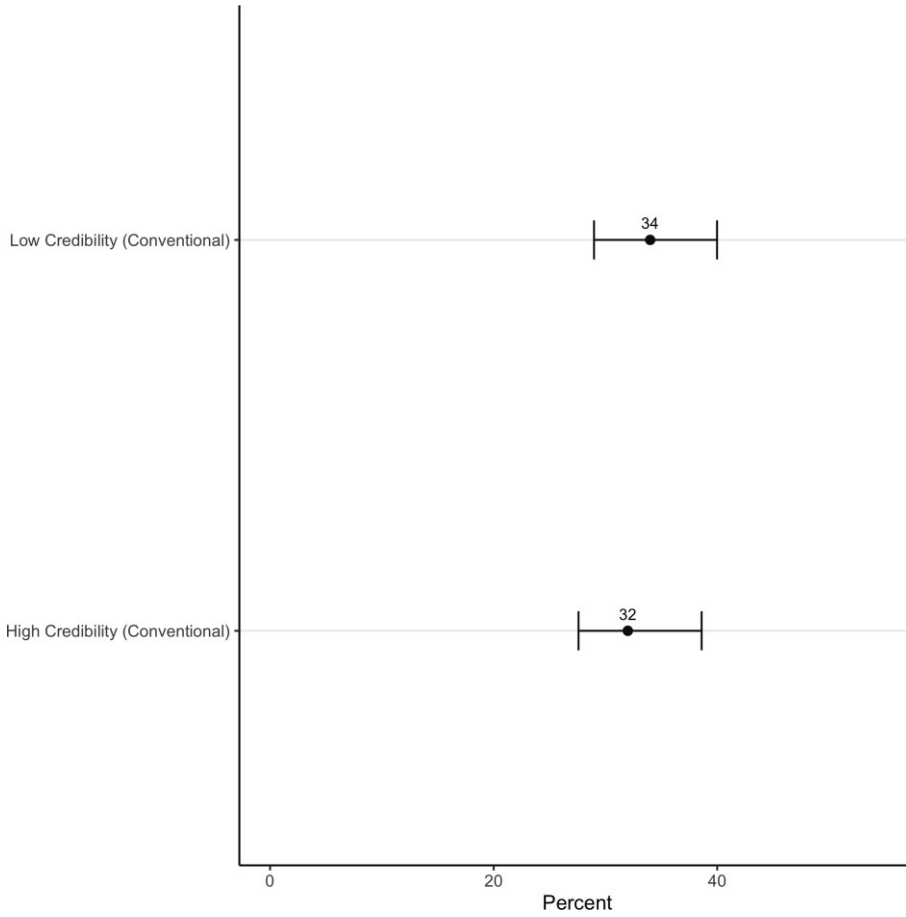

Figure 3. Support for proliferation under different levels of credibility of US conventional security guarantees.
Note: The points are estimates and the horizontal bars are 95 percent confidence intervals.

leaders in the United States and other major powers are able to communicate with mass publics in their protégés without the mediating endorsement of local authorities, echoing empirical research showing that leaders can be effective cue givers to public opinion in general (Hayes and Guardino 2010) and in issues pertaining to nuclear politics in particular (Herzog, Baron, and Gibbons 2022). Alternatively, it might be the case that our results are driven by low levels of public trust in Brazilian government authorities.[9] To test the robustness of our findings, future work could test endorsement by domestic players who are held in higher esteem by the public, such as the armed forces.

Moving forward, scholars should also strive to fill the voids our experimental design has left behind. Our contribution to the understanding of public support for proliferation in this research note is limited by the fact that we do not experimentally variate the behavior or the identity of the threat. For example, we could have created a scenario in which the source of external threat has the capacity to preemptively strike Brazil's existing nuclear facilities in anticipation of a decision to proliferate. We could have also introduced a scenario in which the source of external threat is a nuclear-weapons state. Furthermore, our design did not include an assessment of how publics might react to the information that any indigenous nuclear-weapon program might incur in sanctions, abandonment, or a preventive attack from the United States. Experimental work in the future should add these variations with a view to induce respondents to more clearly take into account the costs of proliferating.

Together, these results help advance our stock of knowledge on the political processes behind the acquisition of nuclear weapons. They provide empirical

9 Datafolha Institute. 2019. "Grau de confiança nas instituições." http://media.folha.uol.com.br/datafolha/2019/07/10/9b9d682bfe0f1c6f228717d59ce49fdfci.pdf.

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validation at the level of the individual to recent theoretical work positing that actors approach nuclear proliferation strategically, engaging in calculations typical of rational choice (Monteiro and Debs 2014; Debs and Monteiro 2017). Members of the public confronting the option to proliferate gauge whether their adversaries pose a dire threat or not, and they estimate whether a powerful ally can provide them with a modicum of protection. Whether a domestic public coalition forms in favor of nuclear-weapon acquisition or not depends on the dynamics of conflict and cooperation among a country's rivals and patrons. Crucially, neither threat nor protection has to be nuclear in order to trigger the dynamics we describe. Armed with the experimental insight that mass publics are capable of thinking strategically about nuclear acquisition, the evolving research program on the micro-foundations of support for nuclear proliferation has the potential to contribute to a future world where the spread of nuclear technologies may well be unavoidable, but the spread of nuclear weapons need not be.

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Supplementary Information

Supplementary information is available at the *Journal of Global Security Studies* data archive.

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