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Nuclear Logics in Latin America: Going Beyond the Usual

Suspects

FIRST DRAFT

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Abstract

Although little studied as a laboratory for nuclear management, Latin America is a particularly appropriate place on which to focus issues of nuclear proliferation. Numerous Latin American states have historically followed different nuclear paths and logics, ranging from covert (Argentina) to overt nuclear strategies (Brazil), as well as non-proliferation strategies (Mexico). In spite of these variations, little is known as to why so many similar states in Latin America have followed such diverse and dissimilar nuclear patterns. This project attempts to explain divergent nuclear logics by examining how the evolution of civil-military relations has shaped regional nuclear policy preferences. Since most nuclear weapon projects in Latin America were once handled by military institutions, we need to know how the armed forces and their civilian counterparts have grappled for control over nuclear policy during different historical periods. In particular, we need to know how civilian control of the armed forces affects (or not) nuclear strategies.

New cutting edge research on nuclear proliferation has finally turned its attention to explaining variation; that is why a handful of states choose to acquire nuclear weapons programs, while a majority of states either abandon this pursuit or just never initiate the so-called nuclear quest. Indeed, until the publication of Jacques Hymans' *The Psychology of Nuclear Proliferation* and Etel Solingen's *Nuclear Logics*, the conventional wisdom on nuclear proliferation tended to focus on explaining where, how and why states built nuclear weapons, but neglected a large number of negative cases where nuclear proliferation just never took place.¹ (Hymans 2006, Solingen 2007) This selection bias in the conventional literature about proliferation led to the overrepresentation of positive cases, often relying on the "same usual nuclear suspects" in Asia (China, India, North Korea and Pakistan), Africa (South Africa), Europe (France, the Soviet Union and the United Kingdom), and the Middle East (Israel, Iran and Iraq). From all these positive cases both theorists and policy makers drew wrong assumptions and analogies, often translating in poor forecasting, bad policies and weak theories.²

Unlike the conventional wisdom, the new research on nuclear proliferation not only provides an explanation for negative cases, but takes a much more rigorous look at how parochial domestic and bureaucratic interests shape nuclear policy preferences, leading to variations in nuclear paths and logics among and between cases. The two books mentioned above make a significant contribution to our understanding of nuclear paths by identifying the domestic conditions that in fact make nuclear proliferation more tempting to some countries and regions than others. In particular, they provide

¹ On determinants of nuclear weapons proliferation see Sagan (1996-97), Jo and Gatzke (2007), Lavoy (1993), and T.V Paul (2000).

² For a critical review of the literature see Ogilvie-White (1996) and Davis and Frankel (1993)

theoretical insights to understand the numerous cases in which external and normative variables appear to be insufficient and unsatisfactory. Furthermore, by identifying clear causal mechanisms and domestic variables, Hymans and Solingen go far beyond the simplistic domestic politics model that codifies states merely as democratic or non-democratic.³

However, it is important to recognize the limits of this literature. Therefore, this paper attempts to identify some of these limitations by analyzing the Latin America region, which has been traditionally neglected by conventional proliferation studies.⁴ Within Latin America, there appears to be a large number of negative cases –Mexico, Chile, Colombia, Peru, and Venezuela- whose non-nuclear paths are inconsistent with the explanation provided by both Hymans and Solingen. The anomalies include the existence of domestic inward-looking coalitions and oppositional nationalist leaders who, against Hymans' and Solingen's expectations, often advocated against nuclear proliferation. While these shortcomings are not absolute, they can be remedied through a set of auxiliary domestic hypotheses.

Consequently, I propose to analyze Latin America's divergent nuclear paths by examining different types of civil-military interactions, which ultimately shaped different nuclear paths. Since most nuclear weapon projects in Latin America were once handled

³ Indeed, most studies that attempt to look into domestic variables often focus exclusively on regime typologies (democracy/non-democracy), neglecting other domestic variables, such as domestic coalitions, bureaucratic politics or decision-making processes. This common mistake in the conventional literature led authors such as Jo and Gartzke to erroneously conclude that the claims made by the literature on domestic political factors "are much exaggerated." Since, as they argue, "democracies with nuclear weapons programs appear slightly more likely to develop weapons, perhaps because partial democratic states use nuclear weapons proliferation as a diversion for domestic political reasons." Jo and Gartzke (2007)

⁴ This is puzzling in itself, given that the most dramatic instance of nuclear confrontation took place precisely in Latin America, as a result of the Cuban missile crisis of 1962. While the nuclear crisis involved mostly the U.S. and the Soviet Union, Cuban intentions and misperceptions also played a key role in the development of the crisis. See Brenner (1990).

by military institutions, we need to understand how the armed forces and their civilian counterparts have grappled for control over nuclear policy during different historical periods. For instance, how civilian control over the armed forces shapes nuclear policy? Does the absence of civilian control increase the incentives to go nuclear? Does the management of nuclear programs by civilians make a difference?

I argue that nuclear weapons production programs or nuclearization strategies were developed in countries with inward-looking domestic coalitions in which the military assumed national security doctrines and had institutional autonomy. By contrast, nuclear disarmament strategies or denuclearization (joining the non-proliferation regime) were followed by countries that were able to exercise some level of political control over the armed forces. Thus, I follow the theoretical insights of Etel Solingen's analysis of domestic coalitions, but focus on a different set of domestic actors, which includes the armed forces and its various services (Solingen 1998, 2006). In so doing, this project attempts to: a) identify different patterns of nuclear policy in Latin America; b) pinpoint lessons learned from Latin America's experience, which in turn may contribute to provide policy prescriptions for other regions; and c) determine the relevancy of a new avenue in proliferation research that focuses on civil-military relations. Not only are there few studies of Latin America's foreign policy in comparative perspective, but we know quite little about the way they behave on issues regarding security and nuclear proliferation. By focusing on Latin America we can learn how states –other than the great powers or the “usual suspects”- design their nuclear policies.

In order to develop my argument, this article will be divided into three sections. . The first section will discuss the empirical puzzles raised by Latin American cases. The

second part reviews existing domestic explanations on nuclear proliferation. Finally, the third section will discuss how the three different nuclear paths, including nuclearization strategies in South America, denuclearizing strategies in Argentina and Brazil, and denuclearization strategies in Mexico.

I. Why Nuclear Paths in Latin America?

Latin America is a particularly appropriate place on which to focus issues of nuclear proliferation, since the region is a microcosm of international relations. Numerous Latin American states have historically followed different nuclear paths and logics. Countries as diverse as Argentina, Brazil and Cuba once competed against each other to acquire the so-called “ultimate weapon.” At the same time, states like Mexico promoted regional non-proliferation treaties and nuclear disarmament in an attempt to halt a regional nuclear arms race. To date, the region appears to be free of nuclear weapons, but Venezuela's plan to develop a nuclear energy capability with Russian assistance and with strong links to Iran raises concerns about Hugo Chavez’ nuclear ambitions. Likewise, Brazil’s efforts to prevent the International Atomic Energy Agency (IAEA) from inspecting its uranium enrichment plant at Resende in 2004 cast some doubt on the strength of a regional norm that arguably dissuades states from considering a nuclear option. Hence, regional commitment to the non-proliferation regime has varied substantially throughout time, with countries following overt, covert and denial nuclear strategies; yet little is known as to why these states have followed such diverse nuclear patterns.

The region also poses a set of empirical puzzles to conventional international relations explanations on nuclear proliferation. For example, realist insights face challenges in accounting for such diverse nuclear strategies in the region. Compared to other hemispheres, Latin America has been relatively peaceful, with a large number of militarized territorial disputes that, surprisingly, have rarely escalated into inter-state war.⁵ Instead, when crises appear to escalate, Latin American states have shown a tendency to rely on a diplomatic culture that is normative and principled in its approach. The overall effect of this approach is a collective understanding that favors legal obligations among regional neighbors, based on the expectation and practice that countries from the Americas almost always engage in pacific settlement whenever a conflict emerges. Inter-state conflicts are thus de-escalated by appealing to specific regional principles, such as non-intervention, sovereignty, good offices, mediation, and arbitration (Domínguez et.al. 2002, 23, Kacowicz 2005, Shaw 2004, Mares 2001). Given this relatively peaceful regional environment, balance of threats explanations would expect proliferation to be a non-issue in Latin America. As one observer of regional politics points out, the negotiation of a Nuclear Weapon Free Zone in Latin America was relatively easy because it was a region that was already de-nuclearized (S.E. de Garcia Robles 1995, 195). In other words, Latin America appears to be an “easy case” for non-proliferation, given its non-nuclear status and the absence of malign external threats.

Yet, the fact that at least three Latin American states –including Argentina, Brazil, and Cuba- did openly or covertly pursue nuclear weapons programs in a relatively benign threat scenario requires an explanation, even if they ultimately failed to achieve their

⁵ For a review on the peaceful disposition of Latin American states see Hensel (2001), Mares (2001) and Domínguez et.al. (2002)

nuclear goals. For example, why would two Southern American countries want the “ultimate weapon”? The Southern Cone was not a contested region in contemporary international politics, like Cuba was in the 1960s. This is one of the few zones in the world where the Soviet Union actually accepted and recognized the American sphere of influence. Furthermore, while there were indeed sources of instability, these threats arose essentially from conflicts within state borders. In fact, the Cuban Revolution led American decision-makers to believe that the major Cold War threat in the Hemisphere came not from an extra-continental attack, but from forces located within the Latin American states (Russell 1990, 61-67). Hence, if the main sources of threat came from within those countries, why would some Latin American states develop weapons programs targeted specifically against external threats?

Most Latin American specialists agree that what prevailed in Argentina and Brazil was, in essence, an influence conflict. This type of conflict is characterized for being a “competition to increase and project power and prestige”, as opposed to balancing against threats (Child 1985, 14). In the Southern Cone, such competition had its legacy in the colonial period, when the Spanish and Portuguese contended for the control of the Americas. In contemporary South America, the problem resided on Brazil’s and Argentina’s long quest for the Southern Cone primacy and supremacy. The Argentine-Brazilian rivalry was for most part of the nineteenth and twentieth century a perennial feature of international relations in the Southern Hemisphere.

The nuclear rivalry between Buenos Aires and Brasilia was merely a sub-set of their larger competition for influence in the region. From a realist perspective, the nuclear competition between both countries was motivated by a desire to achieve military

and scientific prestige, which in turn would allow them to exert a major regional predominance. This fact led nuclear proliferation experts in the 1970s and 1980s to consider Argentina and Brazil as nuclear threshold countries, along with other states such as India, Israel, Iraq, North Korea, Pakistan and South Africa. For authors such as Mitchell Reiss, Argentina and Brazil were more likely to constrain their nuclear capabilities essentially because the two countries were “rivals, but not enemies” (Reiss 1995).

This position, however, overlooks the fact that the major security concern was not the enmity or actual use of force, *per se*, but, as Philippe C. Schmitter argues, “the plausibility of threatening to use force in order to gain some advantage in regional conflicts” (Schmitter 1991, 104). Argentina and Brazil have had, indeed, an enviable record of rarely going to war with each other (the last time Argentina fought against Brazil was in 1825-1828, during the “Banda Oriental” war in Uruguay), but this does not mean they had not frequently contemplated doing so. In the views of Argentine and Brazilian military strategists, war scenarios were never disregarded. The rivalry between Argentina and Brazil had a system of alliances, whereby Chile, Ecuador and Guayana would align themselves with Brazil to balance against Argentina. Similarly, Peru and Venezuela were considered to be Argentina’s most loyal allies in the South American power configuration (Child 1984).

Nevertheless, even if we accept balance of influence theories, we should have witnessed more South American states pursuing nuclear strategies designed to deter fellow regional rivals from exercising a larger influence. As the father of neorealism argues, in a world where nuclear weapons are the ultimate protection, many countries feel

an urgent need to acquire them, and some are bound to succeed (Sagan and Waltz 1995, 1-45). Balancing expects states to mobilize internally, spend more on defense, innovate militarily, and even emulate by copying each other's military strategies (Waltz 1979).⁶ And yet, only two South American states followed nuclearization strategies, while the rest did not. Neighboring, relatively prosperous rival and equally belligerent states, like Chile, did not emulate their Argentine or Brazilian counterparts, nor did they try to obtain nuclear guarantees from the U.S. to balance out Argentina's or Brazil's nuclear strategies.

Latin America's diverse nuclear paths also pose challenges to neo-liberal approaches. The region has been known for establishing the first nuclear free zone ever in a densely populated area. The creation of this area, known as the Tlatelolco Treaty, was accompanied by a set of institutions that served as the principal safeguard authority, collecting and analyzing data, which in turn facilitated nuclear transparency. According to advocates of neoliberalism in Latin America the process by which regional nuclear disarmament was negotiated allowed states to interact regularly, exchange positions and, eventually, identify common interests. This strategy is often referred to as the Latin American non-proliferation diplomacy. It is implied that in a nuclear agreement, states will identify common interests and will attempt to maximize their absolute gains. For instance, Mónica Serrano argues that the diplomatic objective of the Latin American non-proliferation regime was "the attempt to identify common interests with other states in the field of military policy and to devise means whereby these common interests may be advanced" (Serrano 1992, 9) Following Serrano's logic, John Redick argues that the

⁶⁶ In fact, many Southern Cone countries did emulate military strategies. According to Joao Resende-Santos Argentina's, Brazil's and Chile's lack of powerful allies drove them to undertake military reforms under German guidance, including universal and obligatory conscription, professionalization of the officer corps, the development of a powerful and autonomous general staff, and the adoption of new military technologies. Resende-Santos 2007.

Treaty of Tlatelolco helped set the political context for the Argentine-Brazilian nuclear *rapprochement* and accommodation with the nuclear non-proliferation regime. In his view “it was during the latter stages of the Tlatelolco negotiations (1964-1967) that, for the first time, these two nations began to discuss and develop common positions on sensitive issues... Eventually, over a period of two decades, these common positions took a positive turn towards reciprocal confidence-building measures” (Redick 1997, 43; Redick 1981).

This account, however, fails to distinguish between cooperation and harmony. Cooperation involves “that the actions of separate individuals or organizations be brought into conformity with one another through a process of policy coordination... This means that when cooperation takes place, each party changes his or her behavior contingent on changes in the other’s behavior.” By contrast, in harmony, neither of the actors involved have incentives to change their behavior through coordination.⁷ Because Argentina and Brazil had similar nuclear policies, their positions with regards to the Tlatelolco Treaty were, automatically, compatible and thus facilitated harmonization. This does not imply that there was an explicit attempt to adjust, coordinate and eventually change their behavior. In other words, in the 1960s and 1970s there was harmony of interests, but not nuclear cooperation. Likewise, there is no coincidence in timing between the entrance into force of the Tlatelolco Treaty and the Argentine-Brazilian nuclear *rapprochement*, given that the former was first implemented in 1967 while the latter initiated in the late 1980s. Hence, there are 13 years of nuclearization and denuclearization strategies that remain largely unexplained by conventional international relations theories.

⁷ Keohane defines cooperation as the actions of separate individuals or organizations are brought into conformity with one another through a process of policy coordination. See Keohane (1989, 159.)

Furthermore, the Tlatelolco regime was purposely created to prevent a second Cuban missile crisis from occurring by persuading want-to-be nuclear states from becoming nuclear; in other words, the implicit target of the regime were countries like Argentina, Brazil and Cuba. None of these countries joined the regime until the mid-1990s, when they formally ratified the Tlatelolco treaty. So the states that were “more likely” to be affected by the regime itself actually systematically defied it. Nor is it clear why Mexico, the “most likely” case for U.S. nuclear guarantees, became the leader of the regional non-proliferation movement. Mexico could have easily guaranteed its survival by simply accommodating with its northern neighbor and informally relying on the U.S. nuclear umbrella, following the Canadian path. Instead, it denounced the nuclear race and embarked on the impossible: nuclear disarmament. Interestingly enough, the first proposal for a regional non-nuclear proliferation regime was initiated by Chile, Costa Rica, Bolivia, Brazil and Mexico in the midst of the 1962 Cuban missile crisis. By 1968, when the Treaty of Tlatelolco was open for signature, Mexico was the only country that remained as a key supporter of the regime, the rest changed their nuclear positions – including Brazil- or opted for not ratifying the treaty at all –Chile.

Likewise, academic work available on Latin American politics has consistently demonstrated that democratic peace plays little or no role in explaining nuclearization and denuclearization strategies, since the region has experienced diverse forms of nuclear logics under democratic regimes, while many authoritarian states –including Mexico before 2000- followed a denuclearization strategy (Sotomayor 2004). That is, there is no correlation between democracy and compliance with non-proliferation rules and norms.

Constructivist insights face a similar fate as they cannot explain diverse normative understandings among seemingly similar countries, with equally similar cultural and historical paths. From a constructivist approach, Argentina's, Brazil's, and even Venezuela's current nuclear strategy cast some doubt on the strength of the regional non-proliferation norm. Conversely, Mexico's early nuclear disarmament strategy in the 1960s, when the non-proliferation norm was still under construction (not even on a cascade phase), tells us something about the causal process itself. That is, the non-proliferation norm was not responsible for constraining Mexico from following a different nuclear path. Mexico might have been a norm entrepreneur in Latin America, but we still need an explanation for why it followed such a strategy when everyone else did not.

All these empirical anomalies make Latin America a particular appropriate region to test alternative explanations based on domestic politics. Argentina, Brazil and Mexico provide us with an ideal laboratory to conduct a focused comparison based on a most-similar systems research design. This offers three methodological advantages for improving our understanding of why countries develop nuclear weapons programs while others do not. First, Argentina, Brazil, and Mexico are considered regional powers with relatively similar power capabilities, including access to economic resources, raw materials, technology and infrastructure. In fact, the three countries have a virtual monopoly over the production of nuclear energy in Latin America, as they are the only states in the region to have successfully developed nuclear energy plants. From a power based explanation, these are the "most likely" cases for nuclear proliferation; yet, in spite of their power similarities, the three countries differ in terms of nuclear weapons

strategies. Furthermore, some of these states –such as Argentina and Brazil- have adjusted, changed and modified their nuclear strategies, going from nuclearized to de-nuclearized paths, even as their power capabilities remained relatively constant. These diverse nuclear trajectories provide an invaluable opportunity to analyze variation in proliferation strategies. I can observe important variations in the dependent variable across the region and within states, each leading to multiple observations over time.

Second, looking at the same region over time, I can gauge variability in outcomes by holding important suspected systemic variables constant; such as the role of external threats or international crises. Given the fact that all countries are located within the same region, the Western Hemisphere, they face similar systemic constraints.

Third, the cases provide, in and of themselves, important tests for alternative domestic politics theories. For instance, Argentina, Brazil and Mexico are the “most-likely” cases for domestic politics explanations, precisely because the external security threat environment plays a secondary role in accounting for outcomes. At the same time, variations across and within countries provide stronger or weaker tests for competing domestic approaches, such as political economy, nationalism and civil-military relations.

II. Domestic Models of Nuclear Proliferation: Two Competing Explanations

Hyman and Solingen join a list of international relations scholars who have sought to answer the proliferation puzzle: why some states seek to develop nuclear weapons when they face minimal security threats, while other states fail to pursue the same nuclear path even as their external security environments appear to be overwhelmingly threatening. Instead of relying on national security considerations, these

authors focus their attention on the domestic politics model, which as Scott Sagan describes, envisions nuclear weapons as “political objects of considerable importance in domestic debates and internal bureaucratic struggles.” (Sagan 1996-97, 55) In their view, nuclear weapons programs are driven mainly by state leaders with nationalist aspirations or by inward-looking political and economic coalitions within states.

While both authors study the ways in which the domestic context affects nuclear decisions, they differ in terms of the level of analysis.⁸ According to Hyman, decisions on nuclear proliferation are made by leaders who possess a deep-seated “national identity conception” (NIC) that is exclusive, antagonistic, and oppositional. This is in opposition to leaders who are inclusive, open-minded and not driven by rivalry. Oppositional nationalism, Hyman argues, prospers in an explosive environment that combines fear for the outside world, national pride, and emotion; which ultimately affects foreign policy decisions, leading to a nuclear quest. From this perspective, nuclear policies (or at least its origins) are determined by individual level decisions, which are accentuated by personalism, emotion and national identity. Examples of national leaders who shaped national nuclear policy preferences include Charles de Gaulle in France, Atal Bihari Vajpayee in India and John Gorton in Australia. (Hymans 2006)

Hymans distinguishes between nationalism and what he calls “oppositional nationalism.” Nationalism involves a sense of pride, self-assertiveness and aspiration. Oppositional nationalism, on the other hand, is a type of identity that produces a sense of fear in interactions with the outside world and motivates enmity towards rivals and competitors. (Hymans 2001, 2006)

⁸ An interesting and elaborate review of both authors can be seen in Potter and Muhatzhanova (2008).

Consequently, the desire to develop nuclear weapons programs is entrenched in oppositional national identities, forcing the analyst to look much more thoroughly at individual actors involved in the decision-making process. Hymans thus provides an answer to understand variations by focusing on different types of individuals, who are also driven by a diverse set of emotions, fears and national feelings. As William C. Potter and Guakhar Mukhatzhanova argue in their review, ultimately, “the choice of nuclear weapons is a revolutionary decision that is beyond a reasonable cost-benefit calculation.” (Potter and Mukhatzhanova 2008, 147)

By contrast, Etel Solingen’s framework is based on a domestic politics model that draws its insights from politics and economics. From politics she develops the idea that nuclearization strategies are driven by concerns about regime survival more than external security. She then relies on economics to understand why certain political regimes would want to develop nuclear programs. In her view, nuclearization strategies suit the economic interests of ruling coalitions inside states. The less reliant a political regime is on foreign investment the more likely it will be tempted to develop nuclear weapons programs. This is so because, as Solingen argues, “nuclearization has entailed considerable domestic advantages for foes of internationalization models in inward-looking, import-substituting regimes that favor extreme nationalism, religious radicalism, and autarky.” (Solingen 2008, 276)

Conversely, outward-looking regimes depend on external markets, investment, capital and technology to survive. Under these circumstances, embracing nuclearization entails huge political risks and economic costs for the survival of domestic coalitions that support globalization and free trade. Outward-looking domestic coalitions will thus want

to reassure neighbors, attract capital and technology, and increase their international reputation. From this perspective, denuclearization makes sense as a political strategy for survival. Consequently, joining a non-proliferation regime, such as the Non-Proliferation Treaty (NPT) or a nuclear free zone, is a way of signaling intention to outside investors and preventing international isolation. As Potter and Mukhaltzhanova argue, Solingen's model "resembles that of neoliberal institutionalism, except that for her choice is for the benefit of the domestic regime rather than the state. It also is not dependent on the existence of an international nonproliferation regime" (Potter and Mukhaltzhanova 2008, 148).

Unlike Hymans' individual-level model, Solingen's approach focuses on a set of domestic actors or coalitions that push states either towards external or internal economic strategies. These domestic coalitions include a complex set of interests such as parties, labor unions, entrepreneurs, ethnic-religious groups, state bureaucrats and the military industrial complex, among others. In opposition to other conventional studies on regime types, her model is not based on the simplistic distinction between democratic and non-democratic states; she accepts that political processes are inherently complex, leading to different types of political governance that defy dichotomous typologies. From Solingen's model, it could be possible to envision a dictatorial country with outward-looking economic strategies, like South Korea in the early 1980s or Taiwan, or a democracy with inward-looking strategies, like Israel during Ben-Gurion's regime. *Nuclear Logics* thus combines insights from comparative politics and international relations, while relying on political economy to understand a strictly security issue, like nuclear weapons.

III. Nuclear Paths in Latin America

The study of nuclear proliferation in Latin America has historically received less academic attention compared to other regions. Yet there are, indeed, a handful of studies that have focused on the positive cases; that is countries where nuclear weapons programs were developed, such as in Argentina and Brazil.⁹ Hymans and Solingen have contributed to previous solid efforts by political scientists to understand the Argentine and Brazilian cases, as they have widely studied South America in their academic works (Hymans 2001, Solingen 1993, 1996, 1998). While there has been an overrepresentation of positive cases in the Latin American literature, these studies present us with an ideal opportunity to test competing domestic politics explanations. In particular, we need to explain three types of nuclear paths: 1) Why did Argentina and Brazil pursue nuclear weapon programs? 2) Why did Argentina and Brazil then renounce to such projects when they had previously competed for nuclear primacy? 3) Why did other states, like Mexico, never initiate the nuclear quest and instead embrace denuclearization?

Nuclearization Strategies in the Southern Cone of South America

Studies available on Latin America's nuclear strategies consistently demonstrate that self-sufficiency was a constant factor of the Argentine, Brazilian and even Mexican nuclear policies since the 1950s. The nuclear programs in Latin America were originally conceived as means to acquire energy resources from the atom. Both Argentina and Brazil received their initial stimulation through the Atoms for Peace Program during

⁹ The literature on Argentina's and Brazil's nuclear quest includes Adler (1987), Barletta (), Solingen (1994), Castro (1991), Redick (1972)

the 1950s; a program conceived by the Eisenhower administration to assist Third World countries in developing the potentials of nuclear energy. At that time, both countries had ambitious economic programs that were focused on developing and boosting their indigenous industries. As a result, the governments of both Latin American countries had increasing pressures from multinationals and local enterprises to supply enough energy resources to maintain a burgeoning industry. Cities like Buenos Aires, Rio de Janeiro and Sao Paulo were heavily industrialized areas in Latin America and had increasing levels of energy consumption. The need to develop nuclear energy was reinforced by the 1973 oil crisis. This was particularly more acute in the Brazilian case, where it became clear that the so called “Brazilian miracle” of the 1960s and early 1970s relied on favorable external conditions and on cheap energy consumption (Serrano 1994, 237). Hence, the original impetus behind the Argentine and Brazilian nuclear programs was essentially economic.

From Etel Solingen’s framework, the nuclear projects of both countries were motivated by their inward-looking economic strategies, in the form of import-substitution industrialization (Solingen 1993, 1996). One of the most important economic goals was the need and aspiration to modernize their respective countries through the development of self-sufficient technology. As José Goldemberg argues, both states had a tendency to develop an indigenous technological capacity as a way of emulating the industrialized path of the most developed countries, particularly since “nuclear energy was presented as a *miraculous* source of energy in the United States, Britain, France and the Soviet Union (Goldenberg 1985, 83).”

The use of nuclear energy was essential in order to overcome underdevelopment; this was more evident in the Brazilian position regarding nuclear peaceful explosions in the 1970s. In the Brazilian thinking, peaceful nuclear explosives were conceived to have a great potential for the exploitation of the Amazons. According to Brazilian diplomats in the seventies, peaceful nuclear explosives provided “a solution to many of the serious problems which confront Latin American countries... such as the digging of canals, the connection of hydrographic basins, the recovery of oil fields, the release of natural gas, etc.”¹⁰ Therefore, the two countries were strong opponents of the non-proliferation regime, because it imposed restrictions on the development of a full nuclear capability, especially on the freedom to detonate peaceful nuclear devices, which was explicitly prohibited in the NPT text. In their reading, the NPT was perverse not because it left them unprotected from other nuclear powers that did not sign the nuclear treaty, but because it represented an impediment to the development of an independent nuclear program aimed at transforming these countries into industrialized and modernized societies (Espil 1985, 73-76).

By contrast, for Jacques Hymans the nuclearization path of Argentina is explained largely as a function of its national identity. In particular, he argues, the Argentine leadership had a “tremendous eagerness to develop the country’s nuclear capacities and to resist any externally imposed restrictions on those capacities.” (Hymans 2001, 154-155) From this perspective, Argentina’s nuclear capability was an evident source of national consensus and a symbol of pride. Argentina conceived itself as a nuclear leader among the developing countries. It should be indicated that the Argentine nuclear project started earlier in 1950 and at times was more advanced than the Brazilian program. This

¹⁰ Quote obtained from John Redick (1972): 26.

gave Buenos Aires the leading position in Latin America on nuclear matters. The progress achieved by the Argentines on the nuclear issue symbolized mastery of the most sophisticated technology and was often used as a proof to show that while being less in number when compared to Brazil, Argentina had the technological assets and quality to become a developed country. Consequently, Argentina had the aspiration of becoming the major regional supplier of nuclear material and technology.

Hymans' work traces the Argentine decision-making process backwards and provides ample evidence of how multiple policies were made based on what he calls a "non-oppositional nationalist identity", which produces a great sense of pride, "without also producing fear and loathing of an external 'other'" (Hymans 2001, 154). For example, decisions regarding the construction of nuclear plants were often based on an autonomist and autarkic line rather than a cost-benefit assessment (Hymans 2006, 141-170).

Nevertheless, Hymans makes an unorthodox and controversial claim in his analysis of Argentina. He argues that the country of the "Gaucho" was never engaged in building nuclear weapons. In other words, he turns the Argentine example into a negative case to test his hypotheses about national identities. In so doing, he is adamant to accept the "duck test" that classifies objects according to the way they look: "if it looks like a duck, swims like a duck and quacks like a duck, then it probably is a duck." Indeed, Hymans accepts most of the evidence that made Argentina suspicious and "duck-like", including a secretive ballistic missile project with Egypt and Iraq that could have carried nuclear bombs, a nuclear program under the control of the Navy, a nuclear rivalry with Brazil, opposition to the NPT and Tlatelolco, a secret fueling research project, and

skepticism towards the U.S. But unlike the conventional wisdom, Hymans insists that Argentina did not desire nuclear weapons and that most of its strategies were the result of a “non-oppositional national identity” that was autarkic, but did not have “a cognitive nor an emotional predisposition to” build nuclear weapons (Hymans 2001, 157).

Hymans analysis is original and innovative, but ultimately unconvincing for the Argentine case and insufficient to explain why countries in Latin America were so constraining in their nuclear strategies. His evidence is mostly based on the lack of documents and references to national security in Argentina’s nuclear project from 1974-1989, particularly its secretive uranium enrichment program. He insists that while the uranium enrichment plant was under the military’s control, there was no evidence its fissile material was suitable for nuclear weapons, since its official production was well below the 90% enriched uranium per year required for a weapons program.

However, claiming that Argentina was not developing a nuclear weapons program is difficult to demonstrate, especially when the time being analyzed is that of the *Proceso*, otherwise known as the dictatorship era from 1976-1983. A careful consideration of civil-military relations during this difficult political era tells a different story. The absence of national security documents regarding Argentina’s nuclear program is not surprising. Scholars of Latin American civil-military relations have consistently demonstrated that national security doctrines burgeoned during this period. Under these doctrines there was no separation or boundary between national security and economic or national interests. As Alfred Stepan argues, national security doctrines led to a belief in the military that there was a fundamental interrelationship between security and economics, with the “military playing a key role in interpreting and dealing with

domestic problems owing to its greater technical and professional skills.” (Stepan 1973, 51) In fact, Hymans faces the same dilemma that most human rights advocates encounter in Argentina; namely the absence of legal documents proving that the military committed homicides for national security reasons, except for the thousands of unrecorded disappearances. The difference, however, is that in the nuclear domain there is nothing comparable to “a body being found”, unless there is a nuclear detonation, which never took place in Argentina.

But the fact that a nuclear bomb was never built in Argentina does not prove that it was not engaged in a nuclear weapons program. To some extent, Hymans confuses opportunity with willingness. The former refers to the constraints to manufacture nuclear weapons, including international and domestic restraints, while the latter includes domestic and geopolitical conditions that influence the decision to seek nuclear weapons (Jo and Gartzke 2007, 168). Argentina probably did not have the opportunity to build a nuclear device because it had too many technical and environmental restraints. Yet, there was a willingness to develop such devices, evidenced not only by its militarized components, but by its secretive intentions. Hymans framework explains well the opportunities and restraints that Argentine scientists faced as they developed the nation’s nuclear project, but it is insufficient to understand the willingness of the military to develop a nuclear capability.

In fact, civil-military relations in Argentina, particularly service rivalry between the army and the navy, propelled and accelerated the desire for a nuclear weapons program. Here is where the issue of control comes into play. In the Argentine case, the nuclear program began in 1949 under the leadership of President Juan Doming Perón. It was

during his administration that nuclear activity was conferred to the National Atomic Energy Commission. Since then, a basic pattern was set, where a military officer, who would enjoy relative autonomy from shifting political winds, would run the commission. The relative autonomy that such an organization enjoyed was intended to allow the commission to choose technologies, methods and materials designed to give Argentina complete nuclear independence. Nuclear independence, as far as weapons capability is concerned, hinges primarily on access to material for the weapon's warhead. Bombs require either plutonium or highly enriched uranium. Argentina knew how to produce these substances, but not in necessary quantities and so it bought enriched uranium for its research program from the U.S. It was in 1951 that Peron, following the army's advice, falsely announced to the world that Argentina was capable of fusing nuclear material, which at the time translated into effective nuclear capability. This shows that there was willingness on the Argentine side. Ironically, the navy helped unveil the fraud and then convinced Peron to shift the program from the army to the navy itself. This then propelled Peron, a former army coronel, to shift authority from his own service to the Navy, fearing a coup attempt from senior generals who resented him. By 1976 the country's atomic energy commission was given to a naval officer, Carlos Castro Madero, who guided the Argentine nuclear program through its most dangerous phase. The navy had developed plans for the construction of a submarine reactor and had gas enrichment and heavy water facilities, all with a military potential. This fact led nuclear proliferation experts to believe that Argentina was bound and determined to become a nuclear power (Albright 1989, 16-20; Redick 1972, 11-18; Adler 1987, 280-326; Castro Madero and Takacs 1991). Soon, a bitter rivalry emerged, with the army being the most important

obstacle for the navy's nuclear project. This explains the covert or opaque and secretive nature of Argentina's nuclear program, but also the constraining environment the navy faced in achieving its ambitions, which included the construction of a submarine nuclear reactor.

Indeed, the program had to be kept out of the purview of the president in order to conceal it from its rival service. This explains the lack of public debates and legal documents about nuclear issues, while it shows that narrow and bureaucratic interests were rarely challenged in Argentina. As Solingen argues, the navy and the army had very different identities, with the former favoring a strategy that engaged private entrepreneurs, since it favors the "navy's classical liberal support for business and for state subsidiarity. The navy was influenced by the British and American political, economic, and military models, while the army embraced a Prussian and statist tradition (Solingen 1993, 290)."

The Argentine case thus reveals that the main source of problem did not lie in U.S. misperception of Argentina's intentions or its poor international signaling, but in its militarized nuclear program, driven by service competition and political autonomy. As Scott Sagan argues, when nuclear programs are militarized, they create strong incentives and temptations for nuclearization, not only for national identity reasons, but for selfish organizational interests (Sagan and Waltz 1995, 47-91). The nuclear program in Argentina was part of the navy's survival strategy and as such it became a political object and a source of bureaucratic struggle. The navy defended its project not only for national pride reasons, but because like any other organization it was interested in having more resources and more pieces of the budget pie. In the end, Argentina was not able to

become nuclear in part because there were conflicting objectives inside the armed forces, as the army became the navy's fiercest nuclear rival. From this perspective, it was the armed forces that created the conditions for nuclearization by encouraging extreme positions, secrecy, and actively lobbying for defense spending and against the NPT.

One way in which we can assess alternative explanations about nuclear proliferation is by performing a rigorous or tough test on similar cases. Brazil is the country that most resembles Argentina, not only because of its nuclear rivalry and geopolitical setting, but because it favored inward-looking economic strategies similar to Argentina and its nuclear project was also under the military leadership. Brazil is also the "most likely" case for explanations based on non-oppositional identities. It too had a very nationalist constituency behind its nuclear project; but unlike Argentina, which was ready to fight a war against neighboring Chile in 1978 and fought a war against Great Britain in 1982, it had a less belligerent position in world affairs. In other words, Brazil had strong economic and national incentives to establish a nuclear program for development reasons, but because of its relatively stable foreign policy it should not have developed a predisposition to pursue the bomb.

Etel Solingen's early work on nuclear industrial policy in Brazil shows that foreign investment and foreign firms (especially U.S. investment) played a key role in shaping Brazilian nuclear policy. (Solingen 1993) Similarly, like Mexico, Brazil had shown an early enthusiasm for regional denuclearization. In fact, in 1963 President Joao Goulart signed a joint declaration for an agreement among five Latin American states –Bolivia, Brazil, Chile, Ecuador and Mexico- to carry on multilateral negotiations to commit

themselves not to acquire nuclear weapons (Serrano 1991). Hence, Brazil was less autarkic and chauvinistic in its nuclear ambitions than its neighboring Argentina.

Nevertheless, the 1964 coup that ousted Goulart modified Brazil's support for the emerging regional non-proliferation regime as the military assumed a direct role in politics and development. Again, the changing nature of civil-military relations affected nuclear incentives. The so-called Castello Branco government or dictatorship assumed a technical approach to Brazilian problems, favoring a new coalition of apolitical technocrats that favored industrialization and modernization. It is this new political coalition (not economic coalition) led by the military that reassessed nuclear issues, emphasizing the use of nuclear development "to meet Brazilian energy needs and its potential to fulfill national security requirements (Serrano 1991, 30).

A nationalist drive did not emerge in Brazil's nuclear policy until the 1970s, when the U.S. eventually reviewed its nuclear policy regarding the transfer of sensitive nuclear material to developing countries. Washington's attempt to prevent other countries from developing an indigenous mastery of nuclear technology via a policy of denial was a response to India's 1974 peaceful nuclear explosion, which stroked American decision-makers by surprise. The so-called denial policy imposed a virtual embargo on suppliers for the Brazilian nuclear industries. This strategy irritated Brazil and eventually eroded U.S. bilateral relations. Brazil then tried futilely to approach Western Germany to compensate for the loss of a nuclear ally, but the Brazil-West German nuclear agreement was never implemented due to strong pressures from Washington. It was then that Brazil realized that belonging to the Western bloc did not implied integration with the developed world (Goldemberg 1985). This triggered the move towards nationalism, in

which the military tended to view their economic aspirations as being greatly imperiled by the outside world. However, throughout the dictatorship both scientists and the military systematically denied any nuclear bomb aspirations.

Nevertheless, there was another nuclear program that was run in secrecy; that is, the so-called “parallel project”. Nuclear safeguards did not cover this program, which involved the building of centrifuges to enrich uranium in an experimental center near Sao Paulo. Brazil secretly acquired enriched uranium from China and by 1979 the army began digging a 1,000-foot-deep shaft in the Amazon jungle to carry out atomic testing (Albright 1989, Redick 1972, Adler 1987, Krasno 1994, Silverstein 1991). The program was not known to civilian authorities until Congress summoned Brazil’s intelligence chief to explain the spending of millions of dollars in secret atomic research. Like in Argentina, there were no legal documents proving the link between nuclear energy and national security, which shows that finding formal evidence of nuclear programs under military institutions is difficult precisely because the armed forces have strong temptations to act covertly. The report by the Congress, made public in December of 1990, a few weeks after Collor de Mello took office, revealed that the nation’s former military rulers intended to build an atomic bomb. The Congressional committee inquiry revealed that: “At a historic moment there was a decision, taken within the Planalto Palace --the seat of government—to build a nuclear weapon” (Los Angeles Times 1990, 2). According to José Goldemberg, Collor de Mello’s Science Minister, “Some of these groups were out of control... The idea was floated that they would explode a device just before the end of Figueiredo’s term, which was to mark the return of civilian rule. They thought this might spark a wave of national pride and restore public support for the

military” (Robinson 1992, A24). Immediately after taking office and without warning, Collor de Mello flew to the nuclear site, located in Cachimbo, and announced that the place would be closed. Press cameras recorded him dumping the first shovel full of dirt into the abyss (Robinson 1992).

The Brazilian case thus shows that nuclearization drives appear even in the most “non-oppositional nationalist” environments, especially when the military itself is out of control and has authority over nuclear programs. There was no evidence the military was motivated by fear of the other or intense suspicion for the outside world. True, the armed forces were resentful against Washington, but they did not show the oppositional features described by Hymans, yet they push for the bomb for organizational, bureaucratic and political reasons against their civilian counterparts.

Denuclearization Strategies in the Southern Cone of South America

By the early 1990s the regional scenario underwent a radical change as the two former nuclear arch-rivals in South America expressed their intention to voluntarily bury the hatchet. They not only reconciled their mutual positions, but signed an international agreement whereby they renounced the development of nuclear weapons and set forth a number of institutional mechanisms to assure one another that their nuclear establishments would live up to their international commitment. This laid the basis for the creation of the first bilateral institution; namely, the Argentine-Brazilian Agency for Accounting and Control of Nuclear Materials (ABACC). Under ABACC, Argentina and Brazil report a complete inventory of their nuclear materials, as well as thorough description of their nuclear facilities. ABACC’s main task is to verify, via *in situ*

inspections, that the information provided by both governments is accurate (Redick, Carasales, and Wrobel 1995, 114; Carasales, 1997). At the same time, the two countries officially became members of the regional and global non-proliferation regimes, as they finally ratified the Tlatelolco Treaty and the NPT. All this took place while both countries were experiencing transitions towards democracy at relatively the same time. Democratic elections brought Carlos Menem and Fernando Collor de Mello to the Argentine and Brazilian presidencies in 1989 and 1990, respectively (Barletta 1998).

How can we then explain this sudden change in regional nuclear patterns? One form of explanation argues that the arrival of Carlos Menem introduced a different spirit into Argentine foreign policy, one which was less tempered by nationalism and friction with the outside world. As Hymans argues, “internally driven changes in Argentina’s national identity rather than external diplomatic pressures best explain the Argentine shift in nuclear diplomacy and technology policy (Hymans 2001, 183). By contrast, Etel Solingen argues that Presidents Collor de Mello and Carlos Menem supported shock economic programs and unambiguously committed themselves to economic liberalization and structural adjustment, which ultimately forced them to adjust their nuclear policies to international regimes, including the NPT (Solinigen 1994 159-162, Solingen 1998 142-154).

Both domestic politics explanations raise a number of puzzles. First, national identities can change, but they take time and require critical junctures to mute. Hymans admits this when he argues that “in spite of numerous regime changes, at least until 1989 Argentina’s national geopolitical identity remained quite constant; as a result so did the fundamental principles guiding its foreign policy (Hymans 2001, 156).” From a national

identity perspective it is not clear what critical juncture might have caused such radical change in identity in both Argentina and Brazil in 1990. The obvious answer might have been the Falklands/Malvinas war, but this event took place seven years before the arrival of Menem and Collor de Mello to power. The other critical event might have been hyperinflation, which shocked society and the national economy; but then the prime driving force behind the denuclearization of South America is not national identity, but the political economic setting described by Etel Solingen.

Second, the causal mechanisms and tracing process linking economic pressures to denuclearization are imprecise. Bilateral nuclear cooperation between Argentina and Brazil and its eventual denuclearization took place way before the implementation of structural adjustment and liberalization policies.¹¹ In fact, ABAAC (signed in 1990) was the driving force that stimulated the creation of the South American Common Market in 1991, also known as Mercosur. Hence nuclearization came before the liberalization and integration of the South American economy. This does not deny that further liberalization requires full denuclearization, but the causal process needs to be clarified: what came first and why?

The literature on civil-military relations provides insights to understand why denuclearization took place and why it was bilateral. Andrew Hurrell argues that the

¹¹ The process of nuclear *rapprochement* began in 1979 when the military regimes in Argentina and Brazil closed ranks in the face of shared pressures from the U.S. on Brazil and Argentina. In 1980, the military governments of generals (and presidents) Jorge Videla and João Figueiredo signed an agreement on the peaceful uses of nuclear energy, which marks the beginning of the Argentine-Brazilian nuclear *entente*. This process of nuclear understanding was greatly strengthened by Brazil's open support for Argentina during the Falklands/Malvinas war against Britain in 1982. For the Argentine generals, this conclusively demonstrated that Brazil was not their enemy. It should be noted, however, that the establishment of bilateral institutions did not take place during this period. The military autocracies of Argentina and Brazil cooperated mostly through informal means. The establishment of formal institutions took place only after the two countries democratized. For more information on the Argentine-Brazilian *rapprochement* see Leventhal and Tanzer 1992; Selcher, 1985 and Resende-Santos 2002.

formalization of nuclear cooperation in the Southern Cone was an attempt on the side of civilian authorities to gain power and control over the military in times when democracy was not sufficiently consolidated (Hurrell 1995, 250; Hurrell 1998a, 536; Hurrell 1998b, 243-245). Hence, civilian leaders founded institutions and sought international participation deliberately in order to achieve civilian control over their respective military establishments.

The need to counter the influence of the military institution motivated Menem and Collor de Mello to formalize a political alignment, given the fact that both presidents faced common imminent internal threats: constant military coup attempts in Argentina in 1989 and 1990 and an attempt to blast a nuclear bomb in Brazil. Both states attempted to reformulate the military's geopolitical thinking by formally recognizing each other as allies rather than rivals. In so doing, the civilian leaders could reduce the possibilities that the armed forces would use the external environment as a justification for their presence in the decision-making process. Hence, the civilian leadership embarked on the challenging task of redefining the external role of the military in a democracy. In this context, it would be very difficult for the armed forces to justify its role, size, and budget. In other words, the absence of external threats deprives the militaries "from causes around which to mobilize opinion... or press for militarization and rearmament" (Hurrell 1998b, 244).

Similarly, the formation of ABACC implied that conflicts with allied members would be solved by diplomatic rather than military means, which in turn would increase the role of the respective ministries of foreign affairs, under the control of the presidencies. Institution-building thus promised that decisions on nuclear policy would

now be discussed and implemented by the respective ministries of foreign affairs. In so doing, Menem and Collor de Mello sought to integrate military strategy with political imperatives by regaining control over nuclear policy. Denuclearization provided a policy handle for enforcing the presidents' decisions on nuclear policy. It granted the political leadership with an opportunity to remove some decision-making on nuclear policy out of the military's exclusive domain. In this case, the main strategy consisted of turning non-proliferation negotiations into an international issue, subject to diplomatic interests. This involved an increasing involvement of civilians, by presidential appointment, in areas previously dominated by the military (Sotomayor 2004). Therefore, the evidence on the Argentine-Brazilian case indicates the relevance of studying civil-military relations and their impact on nuclear logics and policies.

Denuclearization in Mexico: the negative case

Mexico poses a challenge to most competing paradigms of nuclear proliferation. It is the classic underdog that has received little or no analytical attention by the conventional wisdom. It fulfills all possible industrial, economic, security and national identity conditions for nuclear proliferation, yet it defies the logic of nuclearization. Mexico is among a handful of developing countries that has sufficient industrial infrastructure to support its own nuclear plant, Laguna Verde, with a power capacity of 20% enrichment, accounting to roughly 4.5% of the country's electrical generating capacity. It is also the state that is more likely to be affected by the U.S. nuclear umbrella, given its proximity to Washington. Furthermore, nationalism and import-substitution strategies have played a historical key role in Mexico's economic and

technology policies. And yet, Mexico has historically exhibited nuclear restraint, denouncing nuclear proliferation, rejecting nuclear guarantees, and promoting regional non-proliferation and nuclear disarmament. In other words, Mexico is the ideal negative case, the one country that closely resembles the other positive cases in Latin America except for the value in the dependent variable. Being a case that is similar as possible with respect to as many features as possible to other positive cases allows us to control for many background features and thereby facilitates causal inference.¹²

It has been widely acknowledged that the impact of the 1962 Cuban missile crisis made Mexico aware of the risks involved in a nuclear war. Not only did the crisis take place in Mexico's neighborhood and with a Mexican ally, the Revolutionary regime of Cuba, but it also attracted the East-West confrontation to the hemisphere. Historical records of that period show that Mexican decision-makers were shocked to find out that Fidel Castro had invited Soviet missiles into its territory, especially after the Mexican regime (led by the Revolutionary Institutional Party-PRI) had invested diplomatic energy and resources defending Cuba against its isolation at the Organization of American States (Pellicer 1972, Covarrubias 1997). Some might argue that the 1962 experience might have generated a widespread inhibition on using nuclear weapons, while providing strong incentives to avoid a nuclear war. This is what Nina Tannenwald and T.V. Paul have termed as the prohibitory norm of nuclear taboo, which is an underwritten understanding that nuclear weapons should not be used, especially against non-nuclear states (Paul 1995, Tannenwald 2008).

However, the counter-argument is equally valid; the fear of annihilation could

¹² In selecting Mexico as the negative case I follow the possibility principle, which holds that only cases where the outcome of interest is possible should be included in the set of negative cases. See Goertz and Mahoney (2006).

have well triggered a predisposition towards the bomb. As Richard K. Betts argues, fear and ambition provide strong incentives to develop nuclear deterrent capabilities (Betts 1993). Indeed, as a result of the Cuban missile crisis, Mexico bitterly discovered that it too was a direct target of Soviet deterrence. Soviet strategists were determined to block all economic and raw material assistance to the U.S. in case of a nuclear war, thus Mexican border cities and major urban metropolis (including Mexico City) were specifically targeted (Nadal 1989). From a security perspective, Mexico should have either developed its very own nuclear capability to deter a Soviet attack or negotiated a set of nuclear guarantees from its powerful neighbor. In fact, Canada had followed this path through the nuclear umbrella offered by the U.S. via NATO. Mexico took neither of these two steps.

If competing paradigms on domestic politics are right, Mexico should have pursued the nuclear bomb more than the nuclear guarantee path. First, Mexico had no deficit with regards to an oppositional national identity. There is a vast literature that considers Mexico as an inward-oriented country. Mexico's history has countless stories of attacks, invasions, and occupations that have come from external forces since its independence and which, to a certain extent, provide the sources for xenophobia. Alan Riding, for example, has argued that Mexican nationalism has served as a mask to hide the country's internal doubts. Instead of performing a self-confident and activist foreign policy, the Mexican government prefers to defend the twin pillars of nationalism; namely, "strengthening a sense of national identity at home and stressing the country's independence abroad (Riding 1984, 19)." For instance, the Mexican Revolution of 1910 was not only an extremely nationalist social movement that destroyed the old political

order, it also unified a nation through its anti-U.S. (or “anti-gringo”) identity. But Mexico did not follow the path undertaken by Brazil or Argentina, even if it had a political leadership with a strong “nationalist opposition identity”, especially after the Revolutionary era.

Second, inward-looking economic strategies in Mexico should have affected its nuclear choices. Like Argentina and Brazil in the 1930s and 1940s, postwar governments in Mexico embarked on import-substituting industrialization and considerable state involvement in the economy. In fact, it was the Mexican Revolution and its aftermath that created a political regime with a corporatist system and a strong nationalist, developmentalist, and populist orientations. The regime was authoritarian in nature and based on a single-party rule system, sustained by a coalition dominated by unions, peasants and national entrepreneurs. The regime survived through tariffs, quantitative restrictions to imports and foreign direct investment, as well as nationalization of key sectors (including the oil sector.) This ushered a period of stabilization growth lasting until late in the 1970s, when the Mexican economy reached an impasse (Frieden 1991, 180-182). However, in spite of the inward-looking regime that dominated Mexican politics for most of the twentieth century, there is virtually no evidence of a Mexican nuclear weapons program. In fact, Mexico took up the Latin American non-proliferation initiative right at the peak of the import-substituting industrialization of the 1960s. This suggests a weak relationship between the nuclear choice and the existence of inward-oriented economic coalitions.

What variables were present in Mexico, but absent in Argentina and Brazil to account for such an outcome? One thing seems to distinguish Mexican politics from the

rest of South America: its relatively stable civil-military relations. Mexico has been often cited in the literature as a key example of military subordination to civilian rule (Huntington 1968). But the presence of civilian supremacy in Mexico goes back to a pact in 1929, when the PRI was established, whereby the military accepted the demilitarization of politics and the civilians conceded institutional autonomy. This facilitated a division of labor between soldiers and politicians, and made possible the emergence of a consensus, placing special emphasis on civilian supremacy, since there was nothing above the party. By 1946, when Miguel Aleman was elected as the first civilian president, the military institution had not only been unified and disciplined, but had also been successfully subordinated to the civilian power. To ensure that the armed forces would remain loyal to the PRI, politicians limited budgets, reorganized military zones, and imposed education programs designed to reinforce loyalty to the party and instill discipline. Military-party links thus regulated, managed and co-opted the military's political behavior, in exchange for which the armed forces had autonomy to decide promotions, doctrine, strategy, and military operations (Camp 1992, Serrano 1995).

Consequently, when the Cuban missile crisis erupted, less than 20 years after the civil-military pact was implemented, Mexican politicians faced a serious domestic dilemma. They could have responded to the crisis by relying on national security policies, but only at the expense of inviting the military into the decision-making process by implicitly violating the pact that effectively kept the armed forces away from politics, including foreign policy. The evidence available today suggests that the survival of the regime had a greater weight in the final decision. In 1963 civilian president Adolfo Lopez Mateos instructed its foreign affairs minister, Manuel Tello, and his representative to

Brazil, Alfonso Garica Robles (who would later win the Nobel Peace Prize for the Tlatelolco treaty), to immediately embark on multilateral negotiations to ban nuclear weapons in Latin American territories (Serrano 1992, Marin Bosch 1984).

The decision to rely on diplomacy instead of traditional security policies was clearly strategic. Denuclearization provided an opportunity to de-securitize nuclear issues by making them the subject matter of diplomatic and multilateral negotiations. Hence, for Mexico nuclear proliferation became a legal issue instead of a military topic, whereby treaties, norms and rules were to become the political tools to constraint proliferation imperatives. In so doing, Mexican presidents delegated a security sensitive issue to its diplomatic corps, enabling civilians to insulate the military establishment from the temptations of nuclearization, while maintaining civilian supremacy. Similarly, this allowed Mexico to maintain full civilian control of its own nuclear program, while averting any suspicion of its intentions and ambitions.

The decision to follow a denuclearization path had a number of unintended and perhaps positive consequences. First, participation in arms control offered a forum free of conflict with the U.S. Washington had expressed interest and support in regional denuclearization efforts because they explicitly prohibited Soviet missiles in Latin American territory, averting a future nuclear crisis in the region. In other words, the creation of a nuclear free zone froze the nuclear status by implicitly admitting the U.S. as the only nuclear power in the hemisphere (Serrano 1992, 27-29). Second, the position benefited a specific political domestic coalition in Mexico: the diplomatic establishment, which had a strong legal tradition. Nuclear disarmament benefited Mexico in the international arena as it increased the prestige of its international diplomacy, while

allowing the country to promote a relatively independent and unique foreign policy. As John Redick argues: “Denuclearization was (and is) viewed as a defensive measure, helping to insure Mexico’s continued independence and freedom of action by (in Mexico’s view) removing the region from the sphere of great power competition (Redick 1975, 426).” In other words, denuclearization gave Mexico what Argentina and Brazil so desperately sought: international recognition and status.

Conclusions: Theory, Policy and Implications

Argentina, Brazil, and Mexico share international, regional, and even domestic similarities; however, they have historically followed different nuclear paths. Clearly, the three countries have enough military, economic, and technological capabilities to develop nuclear weapons programs; but power aspirations alone cannot explain their diverse nuclear trajectories. Likewise, these Latin American states share similar domestic features, including national identities and economic policies; yet, these domestic variables are insufficient to account for nuclear variation in Latin America. Instead, differences in civil-military relations have largely determined their diverse and at times opposite nuclear paths.

The findings in this article matter at a theoretical level because they emphasize a different set of domestic variables that have often been neglected by the conventional wisdom. In so doing, this paper has aimed to identify the underlying domestic conditions that make proliferation strategies more tempting to some countries than others. The argument developed here does not disprove alternative domestic hypotheses on proliferation; instead it shows that the role of national identity and economic political

coalitions are conditioned by civil-military relations and bureaucratic considerations. Hence, the evidence from this research project demonstrates that the arguments developed by Hymans and Solingen are falsifiable and subject to empirical refutation. This is a healthy scientific attribute; theoretical problems arise not when the theory is falsifiable but when it is not. At the same time, it is important to note that these findings are limited to the Latin American context and might not explain other nuclear paths studied by both Hymans and Solingen. In other words, the findings presented here provide, at best, contingent generalizations.

This research also stresses the importance of including proper negative cases to test causal claims about proliferation. In fact, causal inference is facilitated by studying cases that are not exclusively based on positive observations, but that include variation in the dependent and independent variables.

Finally, the framework proposed here matches the reality of most of Latin America and provides a number of policy prescriptions. As stated at the beginning of this article, the nonproliferation community has recently raised concerns about Venezuela's nuclear ambitions. The cases developed here demonstrate the need to pay careful consideration to trends in civil-military relations. The consolidation of an autarkic regime influenced by a Bolivarian-nationalist ideology does not necessarily forecast a nuclear revolution in Venezuela. At the same time, the increasing role of the military in Mexican politics and its larger role in national security might indicate a relative erosion of Mexico's support towards the non-proliferation regime. Clearly, Mexico has lost both diplomatic leverage and leeway on disarmament issues, while Brazil has emerged as the

new region Adler, Emmanuel. 1987. *The Power of Ideology: The Quest for Technical Autonomy in Argentina and Brazil*. Berkeley, California: University of California Press.

References

- Albright, David. 1989. Bomb Potential for South America. *Bulletin of the Atomic Scientists*. (May): 16-20.
- Barletta, Michael. 1998. "Democratic Security and Diversionary Peace: Nuclear Confidence-Building in Argentina and Brazil." Paper for deliver at the 1998 meeting of the Latin American Studies Association, The Palmer House Hilton Hotel, Chicago, Illinois, September 24-26.
- Betts, Richard K. 1993. "Paranoids, Pygmies, Pariahs and Nonproliferation Revisited." In *Security Studies*. Vol. 2, No. 3-4(Spring/Summer): 100-124.
- Brenner, Philip. 1990. "Cuba and the Missile Crisis." In *Journal of Latin American Studies*. Vol. XXII, No. 1(February): 114-142.
- Camp, Roderic Ai. 1992. *Generals in the Palacio: The Military in Modern Mexico*. New York: Oxford University Press.
- Castro, Carlos Madero and Esteban A. Takacs. 1991. *Política Nuclear Argentina: ¿Avance o retroceso?* Buenos Aires, Argentina: Librería El Ateneo Editorial.
- Child, Jack. 1985. *Geopolitics and Conflict in South America, Geopolitics and Conflict in South America: Quarrels among Neighbors*. New York, New York: Praeger.
- Covarrubias, Ana. 1997. "Cuba and Mexico: A Case for Mutual Nonintervention." In *Cuban Studies*, No. 26(January):
- Domínguez, Jorge I, David Mares, Manuel Orozco, David Scott Palmer, Francisco Rojas Aravena, and Adrés Serbin. 2002. *Boundary Disputes in Latin America*. Peaceworks. Washington, D.C.: US Institute of Peace.
- Espil, Jorge A. Aja, 1985. "Argentina." In Jozef Goldblat (ed.) *Non-proliferation: The Why and the Wherefore*. London: Taylor & Francis, p. 73-76.
- Frieden, Jeffrey A. 1991. *Debt, Development, and Democracy: Modern Political Economy and Latin America, 1965-1985*. Princeton, New Jersey: Princeton University Press.
- Goertz, Gary and James Mahoney. 2006. "Negative Case Selection: The Possibility Principle." In Gary Goertz. *Social Science Concepts: A User's Guide*. Princeton. New Jersey: Princeton University Press.
- Goldemberg, José. 1985. "Brazil." In Jozef Goldblat (ed.), *Non-proliferation: The Why and the Wherefore*. London: Taylor & Francis; pp. 81-87.
- Hensel, Paul R. 2001. "Contentious Issues in World Politics: The Management of Territorial Claims in the Americas, 1816-1992." *International Studies Quarterly*, Vol. 45, 1(March): 81-109.
- Huntington, Samuel P. 1968. *Political Order in Changing Societies*. New Haven, Yale University Press.
- Hymans, Jacques E. 2001. "Of Gauchos and Gringos: Why Argentina Never Wanted the Bomb, and Why the United States Thought It Did." In *Security Studies*. Vol. 10, No. 3(Spring): 153-185.
- _____. 2006. *The Psychology of Nuclear Proliferation: Identity, Emotions, and Foreign Policy*. New York: Cambridge University Press.
- Jo, Dong-Joon and Erik Gartzke. 2007. "Determinants of Nuclear Weapons Proliferation." In *Journal of Conflict Resolution*. Vol. 51. 1(February): 167-194.

- Kacowicz, Arie M. 2005. *The Impact of Norms in International Society: The Latin American Experience, 1881-2001*. Notre Dame, Indiana: Notre Dame University Press.
- Keohane, Robert O. 1989. "International Institutions: Two Approaches." In Robert O. Keohane (eds.) *International Institutions and State Power: Essays in International Relations Theory*. (Boulder, Colorado: Westview Press.
- Krasno, Jean. 1994. Non-proliferation: Brazil's Secret Nuclear Program. *Orbis: A Journal of World Affairs* 38, 3(Summer): 425-436.
- Leventhal, Paul L. and Sharon Tanzer, eds. 1992. *Averting a Latin American Nuclear Arms Race: New Prospects and Challenges for Argentine-Brazilian Nuclear Cooperation*. New York: St. Martin's Press.
- Los Angeles Times. 1990. Brazil Probe Finds a Bomb-Plan. *The Los Angeles Times*. (7 Dec.): 2.
- Mares, David R. 2001. *Violent Peace: Militarized Interstate Bargaining in Latin America*. New York: Columbia University Press.
- Marin Bosch, Miguel. *Alfonso Garcia Robles: Mexico, Nobel de la Paz*. Mexico City: SEP-SRE.
- Nadal, Alejandro. 1989. "Trayectorias de misiles balísticos internacionales: implicaciones para los vecinos de las superpotencias." In Foro Internacional. Vol. 30, No. 1(July-September): 93-114.
- Paul, T.V. Pellicer de Brody, Olga. 1972. *México y la Revolución Cubana*. Mexico City: El Colegio de México.
- Potter, William and Gaukhar Mukhatzhaova. 2008. "Divining Nuclear Intentions." In *International Security*. Vol. 33. No. 1(Summer): 139-169.
- Redick, John. 1972. *Military Potential of Latin American Nuclear Energy Programs*. Beverly Hills, California: Sage Publications, Inc.
- _____. 1975. "Regional Nuclear Arms Control in Latin America." In International Organization. Vol. 29, No. 2(Spring): 415-445.
- _____. 1981. "The Tlatelolco Regime and Nonproliferation in Latin America." In *International Organization*. Vol. 35, No. 1(Winter): 103-134.
- _____. 1997 "Precedent and Legacies: Tlatelolco's Contribution to the 21st Century." In Péricles Gasparin Alves and Daiana Belinda Cipollone (eds.) *Nuclear Weapon-Free Zones in the 21st Century*. New York and Geneva: United Nations Institute for Disarmament Research, pp. 39-47.
- Redick, John R., Julio C. Carasales, and Paulo S. Wrobel. 1995. "Nuclear *Rapprochement*: Argentina, Brazil, and the Nonproliferation Regime." In *The Washington Quarterly*. Vol. 18, No. 1(Winter): 107-122.
- Reiss, Mitchell. 1995. "Argentina and Brazil: Rivals, Not Enemies." In *Bridled Ambition: Why Countries Constrain their Nuclear Capabilities* (Washington, D.C.: The Woodrow Wilson Center for Special Studies, pp. 45-88.
- Resende-Santos, Joao. 2002. "The Origins of the Security Cooperation in the Southern Cone." In *Latin American Politics and Society*. Vol. 44, No. 4(Winter): 89-126.
- _____.2007. *Neorealism, States, and the Modern Mass Army*. New York: Cambridge University Press.
- Riding, Alan. 1989. *Distant Neighbors: A Portrait of the Mexicans*. New York, New York: Vintage.

- Robinson, Eugene. 1992. South America Steps Back from Atomic Brink: Brazil, Argentina Stand Down After Decades of Racing to Obtain Nuclear Arms. *The Washington Post* .(26 January): A24.
- Russell, Roberto. (1990). "Conflicto y armamentismo en América Latina." In Mónica Hirst (ed.), *Desarme y Desarrollo en América Latina*. Buenos Aires, Argentina: Fundación para la Democracia y la Paz: 61-67.
- Sagan, Scott. 1996-1997. "Why Do States Build Nuclear Weapons?: Three Models in Search of a Bomb." In *International Security*. Vol. 21, No. 3(Winter): 54-86.
- Sagan, Scott and Kenneth Waltz. 1995. *The Spread of Nuclear Weapons: A Debate*. New York: W.W. Norton.
- S.E. de Garcia Robles, Kenza. 1995. "Une alternative en matiere de non-proliferation: les zones libre d'armes nucleaires." In *Relations Internationales et Strategiques*. No. 17(Spring): pp. 192-199.
- Selcher, Wayne A, ed. 1981. *Brazil in the International System: The Rise of a Middle Power*. Boulder, Colorado: Westview Press, 1981.
- _____. 1985. Brazilian-Argentine Relations in the 1980s: From Wary Rivalry to Friendly Competition. *Journal of Interamerican Studies and World Affairs*. Vol 27, No.2:25-53.
- Serrano, Monica. 1991. "Brazil and Argentina." In Mitchell Reiss and Robert S. Litwak (eds.) *Nuclear Proliferation after the Cold War*. Baltimore, Maryland: Johns Hopkins University Press, 1994, pp. 237.
- _____. 1992. *Common Security in Latin America: The 1967 Treaty of Tlatelolco*. London, England: The Institute of Latin America Studies.
- _____. 1995. "The Armed Branch of the State: Civil-Military Relations in Mexico." In *Journal of Latin American Studies*. Vol. 27, No.2 (May): 423-448.
- Schmitter ,Philippe C. 1991. "Change in Regime Type and Progress in International Relations.", In Emanuel Adler and Beverly Crawford (eds.) *Progress in Postwar International Relations*. New York, New York: Columbia University Press, pp. 104.
- Shaw, Carolyn M. 2004. *Cooperation, Conflict, and Consensus in the Organization of American States*. New York: Palgrave-McMillan.
- Silverstein, Ken. 1991. Brazil's Intelligence Chief Asked to Explain Secret Nuclear Project. *The Associated Press*. (14 August).
- Solingen, Etel. 1993. "Macropolitical Consensus and Lateral Autonomy in Industrial Policy: The Nuclear Sector in Brazil and Argentina." In *International Organization*. Vol. 47, No. 2(Spring): 263-298.
- _____. 1996. *Industrial Policy, Technology, and International Bargaining: Designing Nuclear Industries in Argentina and Brazil*. Palo Alto: Stanford University Press.
- _____.1998. *Regional Orders at Century's Dawn: Global and Domestic Influences on Grand Strategy*. Princeton, N.J.: Princeton University Press.
- _____.2007. *Nuclear Logics: Contrasting Paths in East Asia and the Middle East*. Princeton: Princeton University Press.
- Sotomayor, Arturo. 2004. "Civil-Military Relations and Security Institutions in the Southern Cone: The Sources of Argentine-Brazilian Nuclear Cooperation." In *Latin American Politics and Society*, Vol. 46, 4(Winter): 29-60.

- Tannenwald, Nina. 2005. *The Nuclear Taboo: The United States and the Non-Use of Nuclear Weapons since 1945*. New York: Cambridge University Press.
- Stepan, Alfred. 1973. "The New Professionalism of Internal Warfare and Military Role Expansion." In Alfred Stepan (ed.) *Authoritarian Brazil: Origins, Policies, and Future*. New Haven, Connecticut: Yale University Press.
- Waltz, Kenneth. 1979. *Theory of International Politics*. New York: McGraw Hill.
- al leader; thus perhaps reflecting different levels of civilian control.