# ATOMIC AMBITIONS: A ROLE-THEORETIC ANALYSIS OF BRAZILIAN AND INDIAN QUESTS FOR NUCLEAR CAPABILITY


A Master's Thesis


by

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September 2014

To my Parents

ATOMIC AMBITIONS: A ROLE-THEORETIC ANALYSIS OF BRAZILIAN
AND INDIAN QUESTS FOR NUCLEAR CAPABILITY


Graduate School of Economics and Social Sciences

of

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by


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I certify that I have read this thesis and have found that it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Arts in International Relations.

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# ABSTRACT


## ATOMIC AMBITIONS: A ROLE-THEORETIC ANALYSIS OF BRAZILIAN AND INDIAN QUESTS FOR NUCLEAR CAPABILITY

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This thesis uses role theory to investigate the motivations of national leaders considering the acquisition of nuclear weapons. The correlation between expressed roles and proliferation decisionmaking is examined in the cases of Brazil and India within the framework of a most similar systems design. The material and ideational sources of Brazilian and Indian national role conceptions are traced using a model developed by Marijke Breuning (2011). In the Brazilian case, the expressed national role conceptions are found to be inconsistent with acquisition of nuclear weaponry, whereas in the Indian case, nuclear explosives were seen as powerful symbols consistent with the role conceptions of national

leaders. The insights yielded by role theory in these cases provide a valuable addition to the existing nonproliferation literature.

ÖZET

ATOMİK DÜŞLER: BREZİLYA'NIN VE HİNDİSTAN'IN NÜKLEER SİLAH

ARAYIŞINI ROL TEORİSİYLE ANLAMAK

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Bu çalışma, Rol Teorisi aracılığıyla ülkelerin liderlerinin nükeer silahlanma konusundaki motivasyonlarını araştırmaktadır. Çalısmanın vakası olarak seçilen Brezilya ve Hindistan örnekleri üzerinden, bu ülke liderlerinin benimsediği roller ve bu rollerden kaynaklanan nükleer silahlanma kararları arasındaki bağları incelemıştır. Bu analizde seçilen iki vaka birbiriyle en cok benzeyen sistemleri arastırma metoduyla karşılaştırılmıştır. Marjike Breuning (2011) tarafından geliştirilen modele göre liderlerin rol kavrayışlarının hem maddi hem de düşünsel katmanları değerlendirilmiştir. Bu çalışmayla, Brezilya vakasında liderler tarafından ifade edilen milli rol kavrayışlarının, nükleer silahlanma politikası ile uyusmadigi bulunmustur. Aksine, Hindistan vakasında, nükleer patlayıcıların bir statü sembolü olarak algılandığı ve liderlerin benimsediği milli

rol kavrayışlarıyla tutarlı olduğu saptanmıştır. Bu çalışmayla Rol Teorisi'nin bu vakalardaki gözlemlerinin nükleer silahların yayılması literatürene katkı sağladığı savunulmuştur.

**Anahtar Kelimeler:** Nükleer Sılahların Yayılması, Rol Teorisi,  Nükleer Silah, Brezilya, Hindistan

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CHAPTER 1:


INTRODUCTION



The role of nuclear weapons in world politics has been a popular topic ever since the possibility of a super weapon harnessing the power of the atom was first introduced. In today's international relations (IR) literature, the topic of nuclear proliferation has fluctuated in importance, with many scholars warning of "cascades" of states acquiring nuclear weapons and of the dangers of acquiring civilian nuclear capabilities. Why do some states seek nuclear weapons? While there are many diverse answers to this question, the current state of understanding nuclear proliferation has been hindered by a limited understanding of the symbolism of nuclear weapons and a state-centric approach to nuclear decisionmaking that obscures the complex processes behind the choice to go nuclear.

At first glance, there does not seem to be much of a puzzle when it comes to nuclear proliferation—most scholars conclude that states that feel threatened or isolated may turn to nuclear weapons as a means to balance external threats or solve their security dilemmas. Most of the literature addresses the issue from

this framework. Yet the vast majority of threatened states do not turn to nuclear weapons for their security. Still more puzzling, the number of states that possess the technical capabilities to produce nuclear weaponry is large and growing, yet the number of nuclear-armed states has remained low. Argentina and Brazil renounced their nuclear ambitions and imbedded their nuclear industries in both regional and international safeguards regimes. In fact, a greater number of states have given up nuclear weapons in the past 25 years (South Africa, Kazakhstan, Ukraine, and Belarus) than have acquired them (North Korea, Pakistan). Surely there must be a deeper and more detailed explanation for why some states decide that the long and expensive road to nuclear armament is worth the hardship.

Additionally, there are significant obstacles to studying nuclear decisionmaking from a practical point of view as well. First, there are a limited number of cases—only nine states (the US, Russian Federation, China, UK, France, Israel, India, Pakistan, and North Korea) have acquired a nuclear weapons capability. Second, the unique characteristics and situation of each state make comparative study difficult. Scott Sagan (2011) points out that the reasons for some states' decisions to pursue nuclear weapons programs are still unclear, even though each case is very high-profile. He highlights the difficulty of even establishing when each state started exploring the possibility of a nuclear weapons program and in what year these plans were abandoned (Sagan, 2011, p. 227). The secrecy surrounding nuclear weapons programs hinders scholars' efforts to gather even these very basic facts for comparative study.

Realist perspectives appear to be well-suited to approach the proliferation puzzle, since they all focus on how states seek to help themselves through acquiring power and advantage vis-à-vis other states through material capabilities. Classical realist perspectives focus on external pressures that states interpret as threats to their survival. Acquiring nuclear weapons, therefore, is a rational means to maximize power in an uncertain world (Morgenthau, 1948). Lewis Dunn and Herman Kahn, for example, lists deterrence of nuclear-armed rivals as key reasons for many states' interest in nuclear weapons programs (1976, p. vii). Quests for regional status are also listed as contributing factors, but the origins of these desires are usually not examined in detail. According to realists, states see nuclear weapons as "playing-field levelers"—acquiring atomic weaponry allows states to compensate for weaknesses in their conventional capabilities (Pakistan, North Korea).

In contrast, neorealists' emphasis on structural factors seems more apt at explaining why certain states choose to "go nuclear" while others seem to seek other means of securing themselves. Structural realist scholars trace nuclear decisions to world system dynamics, namely the balance of power (polarity), great power politics, and security dilemmas (Mearsheimer, 1990; Waltz, 1981). Structural realists differ in their understandings of the implications of these dynamics, but all base their analysis on their basic understanding of the state as a comparable unit. Neorealism's parsimonious approach regards domestic politics, individual leaders, and regime types as irrelevant for the behavior of states in the anarchic world system. States' behavior boils down to ensuring their survival in response to the constant defining force of anarchy. This focus on the security dilemma and the "individualistic pursuit of security" (Jervis, 1982)

leads structural realists to view states as seekers of self-help in a zero-sum environment. From this perspective, states are seen as jostling for position with respect to each other; seeking relative advantages vis-à-vis other states and threatening to use force if necessary. One state's development of nuclear weapons will cause other states to feel threatened and trigger them developing their own weapons programs in a chain-like response. Thus realist accounts of proliferation focus on assessment of states' technical capabilities since it is assumed that in the absence of security guarantees, states will seek to convert their technical capacity into nuclear weapons.

Challenging these assumptions, Etel Solingen points out many "dogs that didn't bark"—states that didn't turn to nuclear weapons even while facing security vulnerabilities according to the realist criteria (2007, p. 25). Egypt, Japan, South Korea, and Taiwan all were threatened by nuclear armed neighbors and regional rivals, yet refrained from establishing nuclear weapons programs. The realist response is that states that have powerful alliances or nuclear guarantees may not feel a need to develop nuclear weapons, yet North Korea, Iraq, Israel, and Pakistan all pursued nuclear weapons programs while having security guarantees with the US and USSR. On the flipside, when Libya, South Africa, Argentina, and Brazil each decided to formally renounce nuclear weapons, security guarantees from nuclear powers did not play a role in any of those nations' decisions (Solingen, 2007, p. 25). This has occurred at the same time as a developing norm of non-use of nuclear weapons has been observed by an emerging group of scholars, led by Nina Tannenwald (1999). Tannenwald's concept of "nuclear taboo" traces the formation of this norm through

investigating the decisions of US policymakers through the end of the Cold War (1999).

This more complex picture of the proliferation issue leads to the research question of this thesis—why do some states pursue nuclear weaponry, while other states do not, even if they possess the technical capability to acquire them? This thesis investigates the underlying motivations behind the choice to "go nuclear". In framing the issue of proliferation in terms of a choice, this thesis answers this question through interrogating the mindsets of national leaders and the domestic processes surrounding them. In doing so, any investigation of nuclear proliferation must enter the "black box" of the state to interrogate the dynamics unseen by the approaches described above (Hudson, 2005, p. 2). Domestic dynamics have a profound impact on a country's foreign policy behavior, and policymakers play an integral role in the international trajectories of their nations. The perspectives offered by the Foreign Policy Analysis (FPA) subfield address these motivations and domestic processes through methodologically rigorous approaches. This thesis utilizes role theory to shed light on these dynamics and seeks to explain proliferation using a broader perspective.

First developed in the disciplines of sociology, social psychology, and anthropology (Neiman & Hughes, 1951; Sarbin & Allen, 1968; Turner, 1956), role theory was introduced to international relations and FPA by Kal Holsti in his seminal work on national role conceptions (NRC) (1970). Holsti postulated that national leaders understand their country's foreign policy in terms of fulfilling a role within a social environment with other states. This role conception is

formed in the minds of policymakers as they draw on both domestic sources and external prescriptions from other states. As such, role theory models the links between the domestic processes and mindsets of leaders on the one hand, and the prescriptions of the international system on the other. This ability to place domestic dynamics in the context of the tensions between structure and agency makes role theory a promising framework of analysis for investigating the puzzle of nuclear proliferation.

This thesis investigates the relationship between national role conception and proliferation policy. In defining national role conception as the independent variable of analysis, the sources of this NRC are also explored in depth. This is accomplished through the use of an model developed by Marijke Breuning (2011). The links between the independent variable and proliferation policy, the dependent variable in this analysis, are investigated through tracing what decisions related to nuclear weaponry are made by national policymakers in the study.

This plan is applied to two cases in a comparative most similar systems design (MSSD) format. Brazil and India were chosen for this analysis based on their merits as comparable cases. As will be shown in the pages to follow, Brazil and India can be considered comparable cases based on their similar capabilities, history of non-alignment, desire for great power status/permanent membership on the United Nations Security Council (UNSC), and the level of development of their nuclear industries. In the case of Brazil, the military government of 1965-1985 considered acquiring nuclear weaponry, yet in the end, Brazil formalized its rejection of nuclear weapons and entered the Nuclear Nonproliferation Treaty

(NPT) as a non-nuclear weapons state (NNWS). India, on the other hand, first detonated a nuclear test device in 1974, but did not move to weaponize the technology until after a second series of tests in 1998. India and its rival Pakistan both remain outside the NPT regime. The different policy outcomes in these cases allow the dynamics which led to this divergence to be investigated.

The structure of the thesis is as follows: first, the existing role theory literature is reviewed and this thesis' contribution placed in the context of that literature. Next, the research design, variables and hypothesis, theoretic model, and methodology are established in detail. The model is applied to two cases, Brazil and India, identifying the sources of national role conceptions in each case and tracing the relationship between these NRCs and the actual policy pursued by the national leaders. In the final section the model is applied to the unfolding case of Iran's nuclear program and the broader implications and significance of the findings are discussed.

# CHAPTER 2:

# LITERATURE REVIEW

## 2.1.  Introduction

Role theory has received little attention in the discipline of IR as a whole, but it has been experiencing a resurgence recently as Constructivist-influenced perspectives become more common-place in IR.  As more scholars focus on the importance of identity and non-material factors in international politics, role theory has recaptured the attention of many outside of its traditional realm of FPA.  This literature review will begin with an overview of the historical development of role theory and an outline of its basic concepts, and then proceed to a discussion of some of the major divisions and differences within role theory scholarship.  Finally, the current study's contribution and placement in this literature will be discussed.

## 2.2  Historical Development

Before its introduction to the study of international relations, role theory experienced a long development in other social science disciplines, namely

sociology, social psychology, and anthropology (Neiman & Hughes, 1951; Sarbin & Allen, 1968; Turner, 1956).  The idea of using the concept of 'role' to capture the relationship individuals have with a larger social group gained traction within international relations scholarship after K. J. Holsti's seminal work adapted the role-based approach to the problem of describing the foreign policies of states (1970).  Holsti's study identified 17 roles through analyzing statements made by foreign policy decision makers from 71 nations.  According to Holsti, the sources of these roles are mainly geopolitical and material factors, rather than ideational or cultural.  When ideational sources of role conceptions do appear in Holsti's analysis, they appear almost exclusively in the context of the bipolar Cold War climate.  Overall, Holsti's work paved the way for role theory to be picked up by others as a theoretical tool in FPA.

Prompted by this initial effort, the first decades of role theory works in international relations focused mainly on adapting the theoretical terminology and frameworks present in sociological role theory to the study of international relations.  Although this process resulted in a rich theoretical vocabulary able to characterize a wide variety of non-material sources of foreign policy, role theory as a framework for analysis never caught the attention of the greater international relations scholarship.  Role theory's theoretic framework was solidified through the publication of *Role Theory and Foreign Policy Analysis,* edited by Stephen G. Walker (1987).  Walker (1987) sets four key questions that a "robust" theory of roles should ask:

5. What is a role?

6. What are its sources?

7. Under what conditions do various roles emerge?

8. Why are these conditions relevant?

Borrowed from the language of the theatre, the concept of *role* has proved to be a rich cornerstone on which to build the theoretical vocabulary of role theory. Generally, role theory scholars define role as behavior stemming from a normative understanding of a certain pattern. Holsti defined the term role as behavior (both decisions and actions), informed by the "norms and expectations cultures, societies, institutions, or groups attach to particular positions" (1970, p. 239). Phillipe G. Le Prestre defines role as "expected behavior based on certain rules" (1997, p. 4). Bruce Biddle takes a slightly different definition, stating that roles are shared, normative, expectations that prescribe behavior (1986).

Holsti draws a line of distinction between role and *role behavior* or *performance*, where the former is the actor's ideal conceptualization, while the latter is the actual enaction of that conception. Generally in the context of international politics, role performance refers to foreign policy decisions and behavior. According to role theory, the source of positions which form the basis for role performance is twofold: *role prescriptions*, or normative projections on the position from culture and social institutions, and *role conceptions*, the actor's own understanding of the position and appropriate behavior. Holsti states that the resulting social behavior is a "combination of self-defined goals and norms of conduct, a variety of situational variables, and social norms and expectations" (1970, p. 239). In making this observation, Holsti gave importance to norms and social interaction in international politics before the constructivist turn in IR decades later. In role theory, the actor's own agency to create role conceptions is

dubbed the "*ego*", while the normative role of external factors is summarized as the "*alter*", both terms stemming from social psychology.

In the real world, actors often find themselves having the opportunity to perform more than one role in a given situation. When these positions contradict each other, the result is *interrole conflict* (Barnett, 1993; Cronin, 2001; Tewes, 1998). Barnett (1993) looks at the role conflict that arises when states are members of institutions with conflicting or inconsistent role requirements. He uses the example of the 'Arab states system' with its conflict over respect for sovereignty on the one hand and Pan-Arabic attempts at unification on the other.

Cronin (2001) argues that superpowers face tension between the role of hegemon and that of great power, between the demands of leadership of the international system and of exercising superior material capability. He looks at the example of the US-UN relationship with respect to the handling of Iraq between 1991-1999 and finds that the United States sometimes chooses to submit itself to UN procedure, while in other cases choosing for more unilateral action, behavior he attributes to role conflict inherent in the position of being a superpower.

Finally, Tewes (1998) examines Germany's attitude towards EU enlargement in Central and Eastern Europe (CEE) in the post-Cold War period. He describes how Germany's role within the EU of pushing for deeper integration was challenged by the prospect of eastern expansion. Tewes chronicles how Germany under Helmut Khol's leadership attempted to resolve this role conflict through first denial, then through oscillating between the

conflicting roles, then finally by attempting to link the two contradictory roles into a *role merger* (Tewes, 1998, p. 127).

Another key aspect of role theory is the *audience.* The audience observes the process of role formation and enaction and may passively or actively interact with the performance, as long as the actor's behavior is public and observable (Thies, 2013, p. 35). The response of the audience, either negative or positive, serves as feedback that helps to shape future role behavior. According to Sarbin and Allen (1968, p. 534) , the audience validates the appropriateness of the role while giving *cues* on expected patterns of behavior. This is reinforced through positive and negative feedback in response to the actor's role enaction, with the audience tending to reward stable role behavior over time.

The process of settling into a 'proper' role is known as *role location.* Based on what it infers from the audience, as well as its own perceptions of the prescriptions and expectations associated with the position, the actor locates the role and deems it appropriate for the situation. Thies (2012, 2013) equates role location with state socialization and views determination of roles as a bargaining process involving the actor's perceptions of the positions of both self and other. In contrast, Walker (1981, 1987) views this process through the lens of exchange theory. According to Walker, the distance between role conceptions and structural cues is directly related to the level of stability and ambiguity of the role location process. When the actor's role conception and the cues from the audience are consistent with one another, the role location process is relatively smooth and the structure tends to reward actors with conceptions consistent with its cues. When significant inconsistencies exist between the two, however,

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the role location process becomes one of conflict as the audience seeks to force the actor into an appropriate role through punishment or aggression.

With a few notable exceptions (e.g. Walker, 1987), most studies that used role theory during this period were located strictly within FPA and did not attempt to dialogue with wider theoretical debates in IR. Those that did engage, did so almost exclusively within a narrow structural realist framework (Walker, 1979, 1987, 1992; Wish, 1980). These studies were produced overwhelmingly by American scholars grounded in the use of cognitive approaches to foreign policy analysis. This group received company with the advent of Constructivism.

With Wendt's oft-cited article on the social construction of anarchy (1992), role theory was adopted by a new series of scholars attempting to account for ideas, identity, and other social factors in the foreign policy of states. Responding to Wendt's challenge to develop an empirical framework which incorporated social constitution of actors at its core, academics began using role theory to discuss questions of identity in foreign policy. Whereas American scholars tended to focus on cognitive (and therefore more unit-level) approaches, these mainly European scholars tended to have a more structural or systemic focus. In the next section, the major divisions between these two camps will be explored with respect to their definition of role, relationship with the structure-agency debate, and methodology. After this, a third group of works motivated by integrating role theory into IR theory will be presented.

**2.3      Structure and agency: diversity of perspectives in role theory**

In the years since Holsti first introduced the language of roles to the discipline of foreign policy analysis, scholars have developed a wide variety of perspectives on how roles explain different aspects of international politics. Although an initial group of scholars began to both expound Holsti's theoretical framework and apply it  to specific cases in international politics (e.g. Shih, 1988), the impact of role theory was not really felt outside of the scope of FPA. Constructivism brought a renewed interest in the role of identity, culture, and social interaction to a wider audience in IR (Checkel, 1998; Weldes, 1996; Wendt, 1992, 1999), and provided an impetus for a new wave of norms-based role theory scholarship (Thies & Breuning, 2012). The current state of role theory in IR can be divided into two rough camps based on their relationship to IR theory: one group of role theory scholars have studied foreign policy at the state-level while remaining within the traditional bounds of FPA, while the other has been more open to incorporating constructivist insights on national identity and the importance of ideology and norms in foreign policy decision making. This trend follows wider trends within the FPA discipline as a whole (Kaarbo, 2003). In the following sections, these groupings will be explored further.

*Structuralist Perspectives*

In his seminal study, Holsi identified 17 distinct role conceptions through an analysis of statements uttered by the foreign policy makers of 71 different states. The sources of Holsti's role conceptions are mainly geographic and material factors, rather than ideational or cultural. The only exceptions are the ideational motives expressed by mainly Communist-bloc states, yet these

sources are assigned no meaning outside the bipolar framework of the Cold War. After introducing the concepts of role tension and role conflict, Holsti pairs roles he deems to be incompatible to look for the signs of the stress actors caught between contradictory role conceptions. Holsti focused on states' relationships with the Cold War conflict (satellite, non-aligned, faithful ally, etc.) as their main role in the international system. With the end of the climate of bipolarity, states began to express their identities in new ways outside of the old Cold War framework. Perhaps anticipating how his work might be misused, Holsti warned that "careless use of these terms may hide more than they explain about a government's foreign policies" (1970, p. 308). Overall, Holsti's contribution remains relevant today—he introduced the theoretical language still in use—but remains limited by the historical context of when it was written.

Wish (1980) followed Holsti in producing a large-n sample of NRCs, looking not just at relationships with superpowers, but at more regional relationships as well. Her study attempted to categorize a wide variety of national role conceptions, not just "the perceptions of the superpowers (Wish, 1980, p. 535). These conceptions were then compared with actual foreign policy behavior using the Comparative Research on the Events of Nations (CREON) data set. Wish came to many similar conclusions as Holsti using a wider sample of data while focusing more on role performance rather than the sources of role conceptions. Wish's major contribution to the role theory literature was the finding that leaders from the same state had more similarity in role conceptions with respect to each other when compared with those of other states.

Although Wish's key finding seemed to indicate the importance of domestic sources of national role conception, subsequent studies concentrated on other, more structural dimensions of role theory. Walker (1987) seeks to merge role theory with structural realism in connection with Waltz's *Theory of International Politics* (1979). Walker understands the self-help nature of the Waltzian international system to emphasize foreign policy behavior of states as the primary means for advancing domestic policy goals. Following Waltz's separation of levels of analysis, Walker proposes four mechanisms to describe the interaction between unit and structure. First, the previously mentioned exchange process incorporates the cues and response of the audience to the actor's role conceptions. Second, the role location process describes the actor's incorporation of cues and its own internal perceptions to arrive at a shared set of role expectations. Third, Walker proposes a process of role conflict to explain what happens when these shared expectations break down. Finally, Walker theorizes that an institution-building process formalizes the expectations formed through the previous processes, informing future role conceptions.

Walker then tests these propositions through a study of states seeking aid in the context of the Cold War. He observed that states that provided aid did so when it was beneficial for their own domestic contexts. When aid was denied, the would-be recipient would either turn to another source or continue to persist in asking for assistance. Walker saw at the heart of the patron-client relationship a drive for each state to pursue its own domestic policy goals. When these goals became unachievable due to negative pushback from other states in the system, he observed a type of negotiation, which he modeled using a modified version of exchange theory. Walker identifies five basic roles states can play in the

international system: consumer, producer, belligerent, facilitator, and provocateur.  In the end, Walker showed how a closer connection between role theory and other perspectives (most significantly IR theory) could result in important insights.  Yet the roles he identified remain chained to the Cold War context he was attempting to explain, and his focus on structure prevented his analysis from benefiting from a more detailed focus on domestic factors affecting the role location process.  Other studies would fill in the domestic gaps, providing additional insights.

For example, Chafetz, et al. examine the decisions of the Belorussian and Ukrainian governments to give their inherited Soviet nuclear weapons back to the newly-formed Russian Federation using a role theory-based framework.  The authors looked at statements by decision makers at the highest level concerning foreign and defense policy to determine their national role conceptions.  According to the authors, roles give actors "a stable sense of identity" (Chafetz, Abramson, & Grillot, 1996, p. 733).  Chafetz, et al. took the original list of roles identified by Holsti (1970) and categorized them as "roles that guide states toward, roles that guide states away from, and roles that are indeterminate with respect to compliance with the nuclear non-proliferation regime" (1996, p. 733).  They identify four roles which tend to lead towards seeking nuclear weapons: regional leader, global system leader, regional protector, and anti-imperialist.

Chafetz, et al. hypothesized that Belarus would be likely to return their nuclear weapons easily because the Belorussian NRCs they identified were not associated with nuclear proliferation.  In contrast, the Ukraine would consider retaining a nuclear deterrent in keeping with Ukrainian leaders' perception of their nation's role as a leader in the region and balancer against Russian

influence.  After concluding their analysis, Chafetz, et al. acknowledge that the roles they identified neither predict nor explain policy decisions regarding nuclear weapons—they conclude that there must be a "third factor" or variable which contributes to a desire for nuclear weapons (1996, p. 749).  Chafetz, et al. have been criticized for conflating role and identity, at times using both terms interchangeably (Kaarbo, 2003).  This conflation has the potential to obscure the subtle yet important differences between identity and other sources of role, and the role itself.  In addition, Kaarbo points out that this enables other scholars to reinvent the "role wheel" with a focus on identity, missing the potential contributions of a more rigorous role theory (2003).

Philippe G. Le Prestre's important edited volume, *Role Quests in the Post-Cold War Era* (1997), provides a comprehensive example of a role theory based analysis of post Cold War policy making.  Through individual chapters on the USA (Chotard, 1997; Le Prestre, 1997), Russian Federation/USSR (Thibault & Levesque, 1997), China (Beylerian & Canivet, 1997), Japan (MacLeod, 1997b), Canada (Donneur & Alain, 1997), Germany (LeTourneau & Rakel, 1997), France (Thumerelle & Le Prestre, 1997), and the UK (MacLeod, 1997a), the authors of *Role Quests* examine how these states experienced the dynamic conditions in international politics from 1989-1993.  All the authors used a unified methodolgy (rare for edited volumes), yet each author was given enough discrecion to develop their own interpretation—a strategy which contributes to the success of the authors' analysis.  In his introduction to the book Le Prestre describes the methodology and identifies the three central variables of the study: identity, status, and role.  Yet because each individual author defines these terms slightly differently based on the state they are studying, distinguishing the

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conceptual differences between status, identity, and role is difficult and the relationship between them is unclear.  This makes it difficult to compare cases to each other given discrepencies in the understanding of role used by the authors.

Rather than identifying a single formulaic pathway for the development of national roles, Le Prestre deems identity and status as two "poles of influence" which comprise internal and external determinants on the expressed roles. According to Le Prestre, the balance of contribution from identity and status may vary from state to state.  However, as Kuzma points out in her review article (1998), Le Prestre et al. fail to show role theory as capable of producing foreign policy insights that other existing FPA approaches are not already making with a higher level of detail.  While the scope of the work done by Le Prestre et al. is certainly impressive, their work falls short of taking advantage of the rich social aspect of role theory, opting instead for a more structural variant.

More recent work in this camp of role theory includes Walker, Malici, and Schafer's edited volume (2011).  Walker et al. advocate for the merging of cognitive approaches to FPA borrowed from behavioral psychology with Waltzian structural IR theory.  Walker proposes a "binary role theory" to explain the exercise of social power (foreign policy behavior) and cognitive power (bounded rationality).  He deems his conceptualization as "binary" because in realism all power is distributed as either symmetrical or asymmetrical, and interests either as vital or secondary.  According to Walker, role location is a process of both "navigation and construction.  The interactions of Ego and Alter communicate, define, construct, and alter a definition of the social self-in-situation" (Walker et al., 2011, p. 270).  According to the authors, the relationship

between Ego and Alter is a recursive (two-way) system seeking equilibrium. That is, the system tends towards stability as Ego and Alter resolve their diametrical oppositions through an adaptive, recursive relationship.

Walker et al.'s major contribution to the literature is their conceptualization of this process of role location as a recursive interaction of Ego and Alter. For Walker, Ego is the cognitive dimension of the decision maker's own viewpoint; Alter represents the material, geographic, and structural dictations of the system on the actor's available options. While significant for its attempt to incorporate behavioral and structural theories of foreign policy analysis, Walker et al. leave the sources of decision makers' own identity conceptions unexplored. Identity components such as culture, history, and nationalism are assumed to be incorporated in individual leaders' cognitive processes. This enables Walker, et al. to connect their structural role theory to a cognitive theory of leader's operational codes. Ultimately, Walker, et al. portray role theory as a flexible and relevant tool for viewing both micro and macroscopic processes in international politics.

Overall, without a proper treatment of the ideational sources of role conceptions, structurally-focused role theory approaches have limited insights for a world no longer defined by the Cold War conflict. From a more theoretical perspective, the continued focus on structural factors comes at the expense of incorporating social identities in the analysis. When compared with other FPA perspectives that are more grounded in models of domestic politics, these behavioral models seem to have much more predictive power. Yet for other scholars, role theory's value comes from its inclusion of socialization processes, norms, and ideational variables to the study of foreign policy and international

politics.  In the next section, this group of scholars will be introduced, as well as several recent attempts to use role theory to connect FPA with wider discourses in IR theory.

*Agent-Centered Perspectives*

More recent role theory research has moved away from limited structural perspectives and towards a more agent-centered approach.  Rather than focusing on how role conceptions are "handed down" by the rigidity of the international system, these scholars have focused more on the actors' own NRCs and their ideational and material sources.  However, this stream within role theory would benefit from lessons learned in FPA about the nature of the international-domestic foreign policy nexus and the cognitive processes of leaders.  Overall, constructivist scholars have been 'rediscovering' role theory as a methodologically rigorous tool for studying the interaction between agency and structure, a key focus of the constructivist paradigm.

In her chapter of Harnisch, Frank, and Maull's edited volume (2011), Marijke Breuning locates current role theory scholarship within the wider theoretical discussion about the relationship between agency and structure, while remaining committed to empirical efforts to identify generalities in international politics through hypothesis testing, falsification, and methodological consistency.  A focus on roles, according to Breuning, holds great promise because at a fundamental level constructivism understands foreign policy behavior as both being a product of a socialization process as well as having a socially-interpreted meaning.  Role theory in turn, offers the

constructivist paradigm an empirical toolkit capable of identifying patterns in complex cases without oversimplification. Breuning points out how constructivist work on identity and self-image largely ignores previous work on those topics within role theory. She observes that like most role theorists, constructivist scholars are attempting to view states' behavior not just as the consequence of their material capabilities, but rather understand the perspective of decision-makers and their interpretations of their social context.

Breuning pieces together a comprehensive framework for understanding the agency-structure problem centered around the national role conception. She views the national role conception as defined by policymakers and relevant to specific issues and geographic contexts. She classifies the sources of role conceptions as ideational and material. Ideational sources of role include the decision maker's perception of the state's identity, cultural heritage, and domestic audience. Material sources summarize the decision maker's assessment of capability and opportunity to act. These sources feed into a national role conception, which is then enacted through actual foreign policy behavior.

First and foremost, the phrase "decision maker's perception" is important because the actor in question has cognitive agency to determine the relative importance of these various inputs to the role conception. In addition, even seemingly-easily quantified concepts like material capability prove difficult for researchers to nail down objectively, let alone complex variables like culture, history, and national identity. This brings together a focus on the agency of the actor in question with a cognitive model present to describe the role conception process.

Bruening sees the inputs of an actor's national role conception as twofold: she breaks them down into the decision maker's own perceptions of the state's identity and of material capabilities. The decision maker's perception of their state's unique identity, cultural heritage, formative events in history, and domestic audience all contribute to the ideational sources of national role conceptions. Structural sources of role conception contain the decisionmaker's perception of the state's usable power resources, (i.e. material capabilities) as calculated relative to other relevant states and the opportunity to act given their perception of their circumstances (both in the long and short-term) (Breuning 2011, p. 26).

Some role theory scholars concentrate their efforts on the interaction between structural and unit levels, while others place the decision maker at the heart of their analysis. Aggestam (2004) compares the role statements of three states, Britain, France, and Germany, with regards to both domestic and supranational levels of analysis. She defines role conception as a collection of norms that catalog expected behavior, a 'road map' used by policy makers to simplify the decisionmaking process. Aggestam breaks her analysis into two sections: a focus on the relationship between policymakers' understanding of national identity and foreign policy behavior, and a section on 'Europeanization', or the effects of state socialization on individual national foreign policies. She further develops a framework for analyzing these structural role prescriptions in the context of the prospect of a single European Union foreign policy in her chapter of Elgström and Smith's edited volume (Aggestam, 2003). Generally, the contributers to Elgström and Smith (2003) look at ideas, norms and their institutional acceptance. The authors remain well within realm of constructivist

high-level theorizing and rarely investigate individual decision makers or unit-level processes. Yet in this social environment, change clearly occurs through such unit-level processes. Overall, Elgström and Smith and their contributers would have benefited from devoting more attention to the unit-level sources of norm development in the European Union context.

In contrast, Bruening (1995) focuses directly on the unit level through her emphasis of the centrality of decison makers. Breuning uses a similar systems design to compare the Netherlands, Belgium and Great Britain with respect to their foreign aid policies. She organizes her research typologies according to two questions actors face: first, does the international environment generally constrain them or present opportunities for action, and second, is the international environment essentially orderly or anarchic in nature? This yields four different role conceptions for comparison: Good Neighbor (constraint and orderly environment), Merchant (constraint and anarchic environment), Power Broker (opportunity and anarchic environment), and Activist (opportunity and orderly environment). Breuning specifies that these roles are issue specific, in this case referring to each nation's foreign aid policy. Breuning looks for evidence of these role conceptions through content analysis of parliamentary debate on the issue. She then examined the relative size and type (bilateral vs. multilateral) of each states' foreign assistance budget. In her analysis, Breuning assumes that "individual differences between decision makers who represent the same state are bounded by parameters defined by their commonalities" (1995, p. 253) and finds that national decision makers consistently emphasize the same reasons for foreign assistance regardless of party. Overall, Bruening's analysis emphasizes the centrality of decision makers to a role theory-based research

program and the importance of the role concept for tracing the rhetoric of decision makers to the actual policy actions.

Within the camp of scholars influenced by Wendt's work on identity formation through interaction, two subgroups can be identified. Some scholars, including Catalinac (2007) and Walker, et al. (2011), incorporate elements of Wendt's identity theory while continuing to focus on the resulting foreign policy behavior in keeping with the FPA research program. Others, including Trondal (2001), Tewes (1998), Aggestam (2003, 2004), and Brittingham (2007) use role theory as a tool to explore the foreign policy implications of identity.

Trondal (2001) uses role theory in an attempt to bridge the constructivist-institutionalist divide. According to Trondal, organization theory is focused on the structural constraints of the behavior of individuals in an institutional setting. Constructivism, on the other hand, puts central features of the self as variables, such as identity, role conception, norms, etc. Trondal states that constructivism is mainly abstract and theoretical in nature, lending itself well to integrative efforts with other existing perspectives in IR She investigates the role conceptions of national government officials who participate in EU committees, asking whether they personally consider their role primarily issue-area expert, national representative, or supranational agent. Through these interviews with decision makers, Trondal observes a 'logic of appropriateness' in how policy makers display different roles based on their institutional contexts.

Like Trondal's study (2001), Catalinac (2007) turns to a form of role theory in order to substantiate the abstract constructivist framework she is using to explain why Japan reacted differently to international calls for its participation the 1991 and 2003 Iraq Wars. Catalinac examined decision

makers' rhetoric regarding the question of Japanese involvement in the conflict and summarized the statements into three roles expressed during this debate: Pacifist, Pragmatic Multilateralist, and Centrist. She only views role statements directly associated with the Iraq war decision, looking at both the content of the statements and the level of contestation of the referent identity in the context of the statement.

While Catalinac is concerned with a single decision point, Brittingham (2007) takes a broader look at identity and nationalism through a role-based perspective in his article on Chinese nationalism. Brittingham defines role as "identity mobilized in a specific situation" (2007, p. 16), and therefore treats Chinese nationalism as a role or specific manifestation of Chinese identity. This seems to contradict his claims that Chinese nationalism can be understood as a reactive response to international events rather than domestic political manipulation.

Overall, while constructivist perspectives in role theory have successfully shifted the focus from structural treatments of role to more identity-based accounts, this literature suffers from a lack of methodological consistency. There is very little agreement even on what constitutes a role—is role a grouping of associated norms (e.g. Catalinac 2007), is it a mobilization of self-identity (e.g. Brittingham 2007), or understood best in a social context (eg. Trondal 2001)? Without much methodological consistency, it is difficult to find common points of reference with the other strands in the role theory literature. Although there are quite a few constructivists who have used role theory as part of their own interest in identity, there are few constructivist scholars interested in engaging the whole of the role theory literature and advancing it as a valid methodology.

In response to these trends, a third group of role theory scholars has been advocating for more fundamental integration of role theory with IR theory.

*Integrationist Perspectives*

This group of role theorists seeks to integrate role theory and IR theory through developing methodological consistency and engaging concepts within the realm of IR theory instead of remaining confined to the more narrow scope of FPA. While remaining focused on foreign policy behavior of states, these scholars are interested in questions also being addressed by IR theory. The contributors to the recent (2012) special issue of *Foreign Policy Analysis* suggest several avenues regarding this integration. Thies (2012, 2013) has pursued a focus on the socialization of states, Harnisch (2012) explores interactionist perspectives on foreign policy learning, and Bengsson and Elgström (2012) focus on the mutually-constitutive tension between agency and structure in the role performance of actors and its change over time. Overall, Thies and Bruening (2012) call for a return to the methodological rigor of earlier role theory scholarship with an openness to the constructivist emphasis on identity. Similarly, they advocate a more nuanced understanding of role theory which would better incorporate the agency-structure paradigm, while retaining the sound empirical methodology which allows for scholars to give policy-relevant advice (2012, pp. 2–3).

## 2.4    Evaluation

This brief survey of the role theory literature has shown the diversity and richness of role-based perspectives in international relations.  In this section, trends previously identified in the literature and the present survey's contribution and placement will be explored.  Overall, the role theory literature has experienced trends towards a balanced understanding of the identity and systemic contributions to role conceptions while at the same time deepening connections with IR theory.

Culture and national identity are important sources of the role conceptions of policy makers.  Wish (1980) observed that leaders from the same state have more similar role conceptions than with the leaders of other states.  Hudson and Sampson postulate that leaders are successful when "they articulate a vision of the nation's role in world affairs that corresponds to deep, cultural beliefs about the nation" (1999, p. 669).  In effect, a nation's culture and history are crucial sources of its role conception set.  Shih's (1988) analysis of Chinese political and philosophical thought is an impressive example of how culture and history can be incorporated into a role-theoretical analysis.  Shih criticizes Holsti's "inductive" typology as being devoid of the "richness of human cultures" (1988, p. 600), and argues that national role conceptions are cultural and historical products.  Shih identifies a collection of contributions to Chinese identity, and postulates that which ones rise to the top at any particular time is more a result of leadership style and "domestic balance of power" than international structure (1988, p. 626).  Overall however, culture and national identity have been somewhat haphazardly incorporated into role theory

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analyses, and the literature would benefit from studies using a more robust methodology to investigate their contributions.

One problem with many works in the role theory literature is that they are too broad, either focusing on many states and many issue contexts (Holsti, 1970; Wish, 1980), or focusing on only a single state in many foreign policy contexts (Catalinac, 2007; Shih, 1988). Studies based around comparing multiple states with respect to a single issue tend to have much more significant insights (Breuning, 1995; Chafetz et al., 1996; Maull, 1990).

On a related note, Breuning identifies four broad areas of weakness for further empirical research in role theory. First, she suggests incorporating prospect theory's understanding of decision makers' perspectives and insights on decision framing by leaders. Leaders often use their experience and opinions surrounding prior events to frame their opinions about the current issue at hand. This may involve the use of analogies, a phenomenon explored by (Chafetz et al., 1996). Second, investigating the relationship between general ideas held by citizens and the role conceptions of leaders shows promise as another area of future research. Shih's work on the ideological and cultural sources of Chinese political thought (1988) is an important example but falls short of sketching out the connections specific leaders make with these ideas as they are held by the general population. Future role theory scholarship would benefit from investigating how widely role conceptions held by the decisionmaking elite are shared by their average citizens.

Bruening identifies adaptation and change of role conceptions over time as a third area for further research in role theory. What sort of factors lead to change in national role conceptions? How much agency do individual leaders

have to be *role innovators*, and what sort of pushback do they experience from their societies? A fourth area for further research is investigating how decision makers hold multiple roles simultaneously. Holsti tallies the number of roles expressed by different states in his study (1970) and Breuning (1995) finds that analyzing the role conceptions of a small group of states with respect to a single issue to be fruitful. Focusing on multiple role conceptions, whether they are acted upon or not, gives role theorists access to the process of decision-making and the how different streams of thought are reflected in the debate surrounding foreign policy. In addition, two states' foreign policy behavior may be identical, but they may be acting from completely different role conceptions—focusing on multiple role conceptions helps identify these and other subtleties.

## 2.5    Conclusion and Contributions

In conclusion, role theory has experienced a wide variety of different usages in the study of international politics. Beginning with Holsti's adaptation of the role-based perspective from social psychology, role theory has experienced several waves of scholarship focusing on both structural and ideational sources of roles. Many early works in role theory scholarship viewed roles through the lens of the Cold War dynamic, while subsequent studies took a less structural and more domestic approach. This shift was paralleled by a growing interest in identity in IR after the end of the Cold War and the advent of constructivism. While a few studies attempted to connect role-based work to broader trends in IR theory, generally the insights of role theory did not reach beyond a limited FPA-focused audience. The continued importance of culture,

cognitive processes of decision makers, and a renewed interest in the relationship between agency and structure will ensure that role theory remains a relevant option for scholars seeking to explain the dynamics of state behavior in the international system for many years to come.

In light of this evaluation, the contribution of this current study will be now be explored. On the one hand, the question of nuclear weapons has long been dominated by structurally-focused approaches, so external role prescriptions regarding nuclear weapons policy must be taken into account. On the other hand, the contribution of identity has been underexplored so far in the literature, with the most obvious example being the conflation of identity and role by Chafetz, et al. in their piece on nuclear weapons acquisition. The connection between nuclear weapons and identity has been explored in other disciplines (e. g. Abraham, 1998, 2009), but understudied in IR and FPA. This study attempts to contribute to both the fleshing-out of identity as a source of role conception while at the same time bridging a role theory-based analysis with wider trends in IR theory.

This thesis seeks to contribute to the role theory and nuclear proliferation literature through tracing the material and ideational sources of national role conceptions. Additionally, it will identify policymakers' dissatisfaction with the international hierarchical status quo, with a special focus on factors which contribute to policymakers expressing roles conceptions in confrontational or oppositional ways. The thesis employs the model proposed by Breuning in her 2011 book chapter on role theory, a model which follows the role formation process starting with material and ideational sources of national role

conceptions and connecting these conceptions to actual foreign policy behavior. This model is explained in more detail in the following section, which describes the methodology of this the thesis.

CHAPTER 3

METHODOLOGY

## 3.1.   Introduction

In this chapter, the thesis methodology is established.  This project will use a most similar systems design to compare two historical cases of nuclear proliferation using role theory.  After discussing various role-based typologies already present in the literature, I propose my own modified version of Holsti's identified roles through investigating the statements of policymakers where possible.  The application of this typology to the cases and the overall structure of the case study analysis will be outlined, with emphasis placed on locating decision makers' role conceptions in the wider context of their states' foreign policy, history, and societal norms.

## 3.2.    Model and Hypothesis

This section introduces the theoretical model and hypothesis of the thesis. This study uses a model based on a role theory framework developed by Marijke Breuning (2011). Her framework incorporates both material and ideational inputs of the national role conceptions held by policymakers. Breuning's model captures the essence of role theory's position between structural and agent-focused approaches by highlighting the mechanics of role conceptions in the minds of decision makers. This cognitive model is displayed in Figure 1 below:



**Ideational**
Decision maker's perception of state's
•National identity *(i.e. ego aspect of role conception)*
•Cultural heritage *(esp. ego aspects from the state's history that are, or have been, makers of identity)*
•Domestic audience

**National Role Conception**

•Defined by decision maker
•Relevant to *issue area* and *geographic domain*

(roles may be issue-issue specific and linked to geography)

**Role Enactment**

•Foreign policy behavior

**Material**
Decision maker's perception of state's
•Capability *(i.e. usable power resources, relative to relevant other states)*
•Opportunity to act *(possibility afforded by circumstances, whether temporary or enduring)*
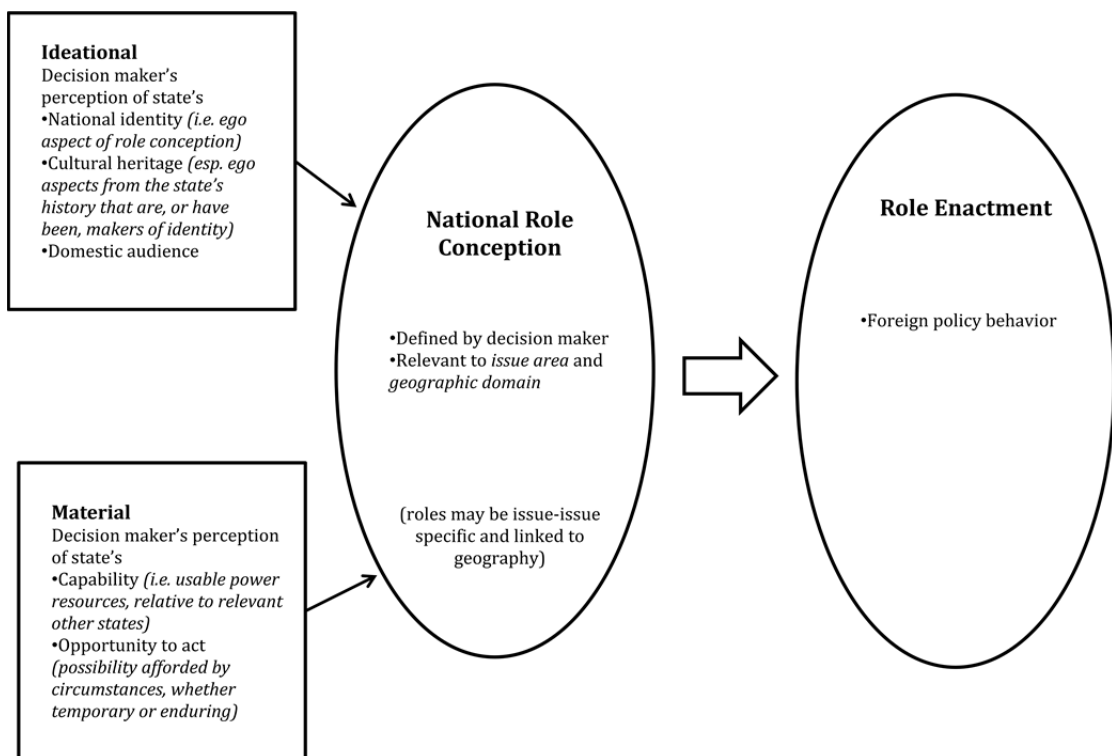
**Figure 1: Breuning model of national role conception process (Breuning, 2011)**

According to Breuning, the sources of policy makers' national role conceptions can be grouped into two categories: ideational and material (2011). Ideational sources consist of the decision maker's perception of their state's identity, cultural heritage, and public opinion (Breuning, 2011, p. 26). Of special

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interest is the decision maker's perception of key events and phenomena in their state's history which have contributed to an understanding of national identity for some segment of the population. The material sources of role conception, on the other hand, consist of the decision maker's perception of their state's relative power capabilities with respect to other states and their understanding of their state's "opportunity to act", or their perception of a particular environment surrounding a decision (both temporary and enduring) (Breuning, 2011, p. 26).

In her chapter, Breuning emphasizes that national role conceptions can be linked to particular foreign policy issues and or specific geographies (2011, p. 32). This point makes the model flexible and applicable to describe and yield explanatory power to a wide variety of foreign policy events. Nuclear proliferation as a foreign policy phenomenon is no exception. The next section will present a modified version of Breuning's model specific for nuclear proliferation.

*Proliferation-Specific Model*

In the proliferation-specific model, decision makers are faced with two crucial questions: *What should be our country's role in this policy area,* and *Are we a country that should possess nuclear weapons?* In answering these questions, leaders turn to two sources of input: their perception of their state's material capabilities, and their perception of the ideational factors of national identity, culture, history, and domestic audience. This is displayed visually in Figure 2 below:
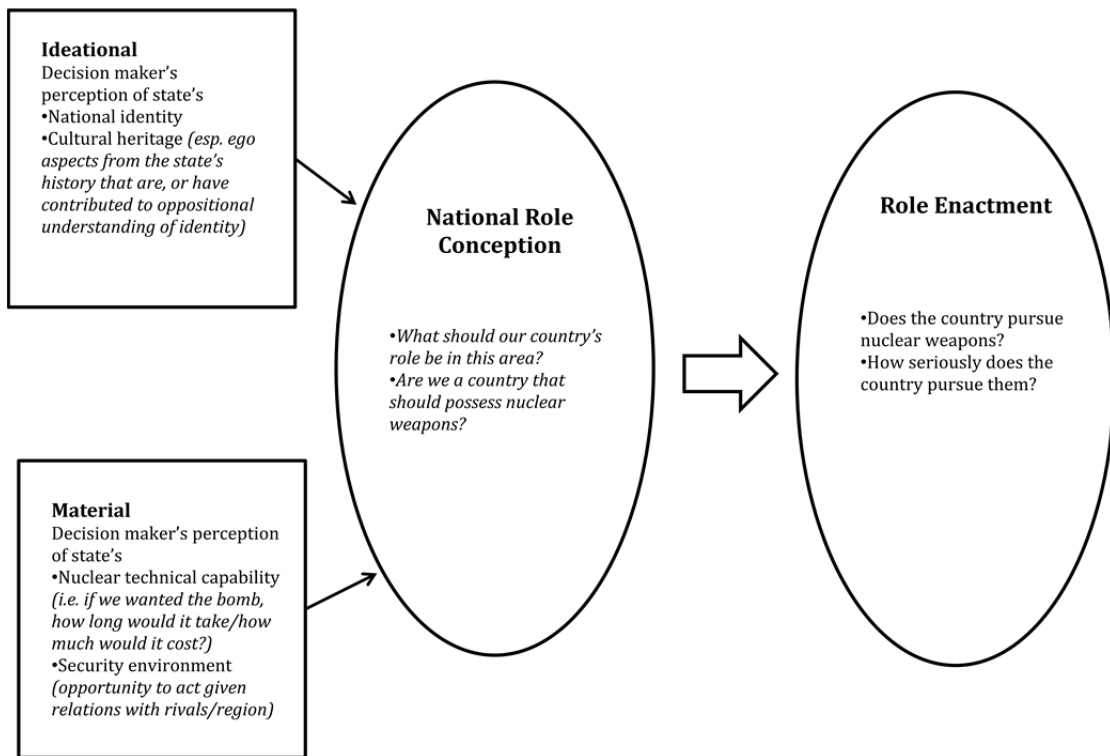
**Figure 2: Role-based framework for nuclear decisionmaking process showing ideational and material inputs, based on (Breuning, 2011)**

The ideational inputs consist of the leader(s)' perceptions of their state's national identity, culture and history. Specifically, the model characterizes how key decision makers view the identity of their state in two key areas: the trajectory of their state's history and content of their state's cultural heritage. Furthermore, the model investigates the extent to which these perceptions are colored by an oppositional attitude towards other states and ethno-religious identities. The model asks questions such as: How do elites make reference to past periods of grandeur in their state's history? What type of language do elites use to refer to the state's traditional enemies? How do elites desire for their state's culture and history to be perceived by the world? The model answers these questions through investigating policy makers' references to culture and history in significant speeches and memoirs (when available).

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On the other hand, the model defines the material inputs of nuclear policymaking as policymakers' perceptions of their nation's relevant technical capabilities and their nation's security environment. Many studies in the so-called "supply-side" literature (as characterized by (Sagan, 2011)) have worked to define which factors indicate that a country's technical capabilities has reached a sufficient level. Jo and Gartzke measure the presence of uranium deposits, metallurgists, chemical engineers, nuclear engineers/physicists, chemists, electronics and explosive specialists, nitric acid production capacity, and electricity production capacity as an indicator of the production capabilities of a particular state (2007, p. 173). These indicators provide an important base for any nuclear program, but paint with too wide of a brush to be useful for this analysis.

In order to avoid the valid criticism of a broad focus on national technical capabilities, this analysis focuses on the process of acquisition of key fuel cycle facilities and (where available) indicators of weaponization. Rather than focusing on the presence or absence of industrial capabilities needed for a nuclear weapons program, the model attempts to capture the perceptions and intentions of policy makers of nuclear technology and the prospect of acquiring nuclear explosives. The model focuses therefore on the key components of the nuclear fuel cycle and how closely involved the state's leaders were involved in the decisions leading to their acquisition and construction. These indicators are summarized in Table 1 below:

## Table 1: Summary of key fuel cycle facilities

| Technical Capability | Facility Description |
|---|---|
| Source of Fissile Material | Domestic source of uranium or thorium ore |
| Research Reactor | Operational domestic research reactor capable of a sustained nuclear chain reaction |
| Conversion Facility | Converts uranium ore into uranium hexafluoride gas (necessary for enrichment) |
| Enrichment Capability | Increases the percentage of uranium-235 in the fuel, enabling a sustainable chain reaction |
| Reprocessing Capability | Recovers fissile material from spent fuel—may be used to acquire plutonium for use in weapons or future fuel |

The nuclear fuel cycle consists of a series of steps by which natural uranium or thorium is taken from its natural state and prepared for use as fuel in nuclear reactors. Uranium or thorium is mined from the ground, converted from a natural ore into a chemical state which can be enriched to a suitable level, enriched in order to be able to sustain a continuous chain reaction. This enriched material is then chemically converted to metal and fabricated into fuel which can be used in a nuclear reactor. After being used in a reactor, the fuel may be reprocessed, extracting both unused uranium and plutonium produced through the absorption of neutrons by uranium atoms over the course of normal reactor operations[1].

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[1] Two excellent and accessible texts on the technical details of nuclear proliferation for curious readers are *Nuclear Nonproliferation: A Primer*, by Gary T. Gardner (1994), and *Nuclear Safeguards, Security and Nonproliferation: Achieving Security with Technology and Policy*, edited by James Doyle (2008).

These fuel cycle steps and their associated facilities are important because their acquisition on the one hand represents a series of significant decision thresholds for a state's policy makers, and on the other, the technology is controlled by the nuclear non-proliferation regime because of its potential for use in weapons production. By focusing on the timeline of acquisition of these facilities and the role of policy makers in their acquisition, the model gathers a more complete and accurate picture of a state's nuclear capabilities and decision makers' perceptions of those capabilities.

The other component of the modified model is the decision maker's perception of their state's security environment. Breuning refers to this as the policy makers' perception of the "opportunity to act", or their assessment of the circumstances at the time of the decision (2011, p. 26). After a survey of the literature on each case to determine the major security threats in each state's foreign policy, the development of key events in relations with rivals are traced with emphasis on their influence on nuclear decision making. The presence of a neighbor or rival with an existing or developing nuclear capability looms large in the minds of policy makers. A history of armed conflict with a regional rival also affects the security environment and the attitude of policy makers towards the prospect of acquiring nuclear explosives.

Taken together, the ideational and material inputs inform the leaders' NRCs and the subsequent role performance, i.e. what route the state takes with regards to the pursuit of nuclear weaponry. This role performance is evaluated in terms of two key components: first, what is the policy pursued (ex: signing the NPT, authorizing a clandestine nuclear program), and second, how seriously is

that policy pursued (e.g., acquisition of technology, allocation of resources). In the next section, the specific role typology used to evaluate this decision process will be explained in greater detail.

*Role Typologies*

As has already been seen in the survey of the role theory literature, there is a variety of perspectives on what exactly constitutes a national role conception in the study of foreign policy. In this section I will discuss the significant examples of successful role-based typologies from the literature and propose my own modified set of roles to look for in the case studies. As mentioned in the previous chapter, role theory studies have utilized a variety of typologies to describe the foreign policy behavior of states. With respect to methodology, the existing role theory literature generally consists of works either based directly on or derived from Holsti's original 1970 study. Before expounding on these perspectives, the findings of Holsti himself with regards to this thesis's cases will be investigated.

Holsti (1970) found evidence for 17 distinct role conceptions through his analysis of foreign policy references in the significant speeches of policymakers. In his analysis, Holsti identifies India as holding the following role conceptions: *regional leader, subsystem leader, active independent, liberation-supporter, mediator-integrator, independent,* and *internal developer* (pg. 276). Holsti mentions the difficulty of finding specific foreign policy objectives in the speeches of many South American leaders; he attributes just three roles to Brazil

during the time period: *internal developer, regional-subsystem collaborator,* and *independent* (pg 275).

Much has transpired in international politics since Holsti wrote his seminal study in 1970. As has been previously mentioned, the end of the Cold War brought new freedom and challenges for states formerly caught between the limited foreign policy options the conflict between the United States and the Soviet Union allowed. Brazil and India are no exception. While providing an invaluable starting point, the work started by Holsti must be continued and expanded by more recent scholarship.

This study builds on the work of Chafetz, Abramson, and Grillot (1996), who modified Holsti's (1970) original roles and looked for connections with proliferative foreign policy behavior. They classify Holsti's roles into three groups—roles which guide states towards, roles which guide states away from, and roles which have no effect on a state's nuclear proliferation policy. Within that first group, they specify four roles which seem to describe states which seek nuclear weapons: regional leader, global system leader, regional protector, and anti-imperialist (Chafetz et al., 1996, p. 733).

According to Chafetz et al., nuclear weapons can be viewed by states holding these conceptions in different ways. For regional and global system leaders, they contend, nuclear weapons symbolize strength and leadership, a belief which is reinforced by the existing nuclear powers and their position in the international system. For regional protectors, nuclear weapons can be an important part of their desires to protect their regions and allies, or carve out spheres of influence. Finally, for countries holding an anti-imperialist role

conception, nuclear weapons can be a "necessary tool for overturning the status quo" (Chafetz et al., 1996, p. 733).  A summary of the examples Chafetz et al. give for each of these four roles is provided in Table 2 below:

**Table 2: Summary of roles identified by Chafetz et al. (1996) as proliferation-prone**

| Role Type | Role Description | Examples of states articulating the role conception: |
|---|---|---|
| Regional Leader | Provide leadership in delimited geographic or functional area | **India**, Iran, **Brazil,** Iraq |
| Global System Leader | Lead other states in creating and maintaining an emerging world order | United States, Russia |
| Regional Protector | Provide protection for adjacent regions | United States , Russia, France |
| Anti-Imperialist | Act as agent of struggle against imperialist threats | **Brazil** (before 1990), **India**, Iran, North Korea, Iraq, India, Libya |

Chafetz et al. test this typology using the cases of Belarus and Ukraine during the period immediately following their independence from the USSR. During this period, despite their close similarity, Belarus and Ukraine follow different paths regarding the nuclear weapons they inherited from the USSR. Belarus immediately promised to send its weapons back and enter the nonproliferation regime as a non nuclear weapons state, while Ukraine hesitated, dragging its feet both on the NPT and returning the weapons for 2 years while the country's role was debated domestically.

Chafetz et al. hypothesize that Belarus gave up its nuclear weapons easily because its national role conceptions were not consistent with possession of nuclear weapons.  Ukraine, on the other hand, had some elements calling for the national role conception of a regional or great power, which caused its policy on

the future of its inherited nuclear weapons to be uncertain. However, Chafetz et al. hypothesize that the external role prescriptions from both the Russian Federation and the international community encouraged a different emphasis of national role which was prohibitive to the continued possession of nuclear weapons and which caused Ukraine to return the weapons and enter the NPT as a non nuclear weapons state, albeit later than Belarus.

As seen in Table 2 above, Chafetz et al. identify both India and Brazil as expressing regional leader and regional protector role conceptions, and indicate that this role conception led to both of them dabbling in behavior which ran contrary to the nonproliferation regime. Yet their study does not offer any insight into why India would pursue nuclear weapons while Brazil did not, if they share similar role conceptions. Why is the policy outcome different in these cases? The framework used by Chafetz et al. has limited answers for this question.

In addition, by strictly using Holsti's framework, which was heavily-influenced by the Cold War, Chafetz et al. miss out on more recent scholarship conducted in the area of identity and foreign policy. Their typology remains limited by the bipolar Cold War environment in which Holsti devised his original list of roles. In the post-Cold War world, leaders no longer feel constrained to refer to their state's relationship with the wider worldwide distribution of alliances. For some cases this allows more freedom in the expression of national roles, for others, the lack of clear role prescriptions from the bipolar system has resulted in uncertainty in the post-Cold War era.

Chafetz et al. (1996), Sagan (2011), and others have identified associations between states' dissatisfaction with the status quo and the pursuit of nuclear weapons, yet the vast majority of dissatisfied states do not seek such weaponry. Jo and Gartzke (2007) identify technical factors, yet many states possess the technical capability and "nuclear latency" necessary for a weapons program without expressing any desire for a nuclear explosive. Even some states classified as both "dissatisfied" and technically capable (i.e. Brazil) have refrained from pursuing nuclear weapons. Clearly this points to holes in the existing scholarship in nuclear proliferation and role theory. This thesis seeks to contribute to the role theory and nuclear proliferation literature through tracing the material and ideational sources of national role conceptions.

I argue that these regional leader and protector role conceptions as defined by Chafetz et al. (1996) are too vague to yield much insight into the cases of Brazil and India. While this study builds on the work of Chafetz et al. by exploring the relationship between nuclear weapons policy and national role conception, I argue that this regional power role conception needs more detail in order to be useful. In the next section, this study's hypothesis and main argument will be detailed.

*Hypothesis*

As has already been argued, only a small number of states have pursued nuclear weapons, and even fewer have actually produced nuclear explosives, even as many are classified as regional or "middle" powers. I argue that the key

dimension which differentiates these states holding regional leader conceptions is their relationship with their region on the one hand, and the larger international system on the other. I hypothesize that in situations where there is an oppositional conception of a state's regional role, both in relation to the region and to the international system, those states will be more likely to pursue nuclear explosives. Although other states holding a regional leader role conception may exhibit proliferative tendencies, in the long run the pursuit of nuclear weapons by these states becomes untenable because it is unsupported by the competitive, but not oppositional, national role conception held by those states' policymakers.

Hymans defines this distinction between oppositional and competitive as primarily emanating from the level of connection of national identity with the relationship with the rival (2006, p. 22). In cases where this identity is drawn in stark contrast and opposition to the 'other', this conception is labeled as "oppositional". In other cases, while this stark contrasting identity is absent, difference is still emphasized and national identity and objectives are defined in unique terms—these cases are labeled as "competitive" (Hymans, 2006, pp. 22-23).

In other words, in cases where policymakers have oppositional national role conceptions with regards to both their country's immediate region and the larger international system, policymakers will be more likely to turn their nuclear technical capabilities into a nuclear explosive, especially in the presence of a perceived threat. In cases where policymakers hold ambiguous, inconsistently oppositional, or non-oppositional competitive national role

conceptions with regards to the region and system, nuclear explosives become an undesirable and untenable policy position.  This is visually depicted in Figures 3-5 below:

**Figure 3: Relationship between oppositional regional role conception and nuclear weapons acquisition attempts**

-Oppositional conception of regional role *with respect to regional rival*
-Oppositional conception of regional role *with respect to international system*

→ Serious attempts to acquire weaponized nuclear explosives

Given:
•Sufficient technical capacity
•Presence of threatening regional rival
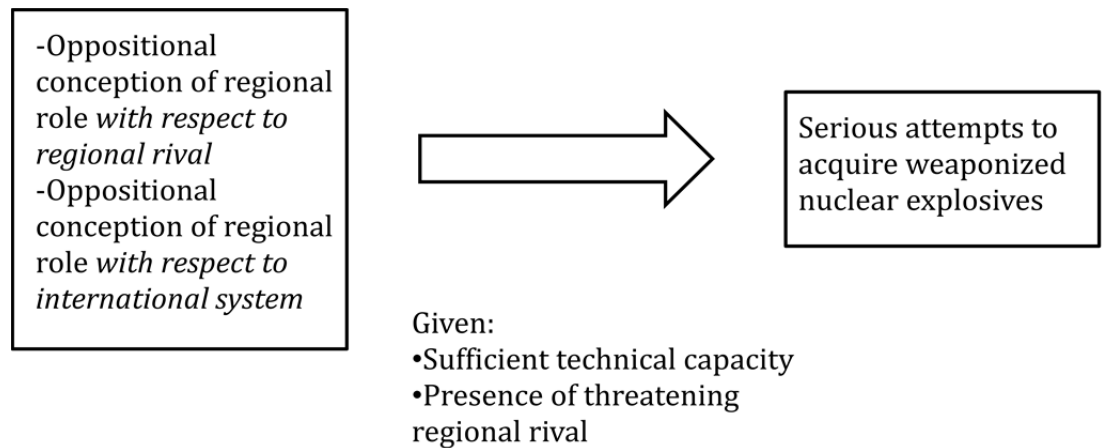
**Figure 4: Relationship between hybrid oppositional and competitive regional role conception and nuclear weapons acquisition attempts**

-Competitive conception of regional role *with respect to regional rival*
-Oppositional conception of regional role *with respect to international system*

→ Attempts to acquire nuclear explosives  for "peaceful purposes"

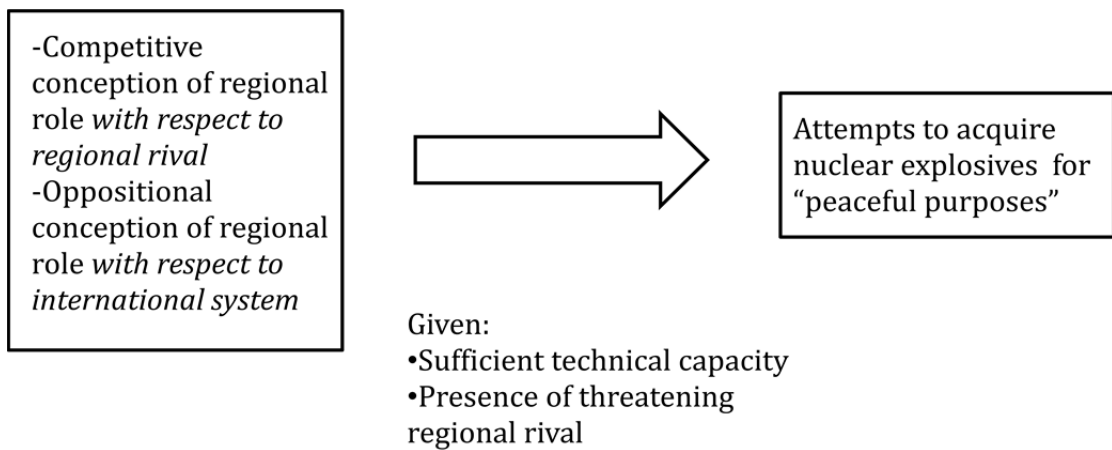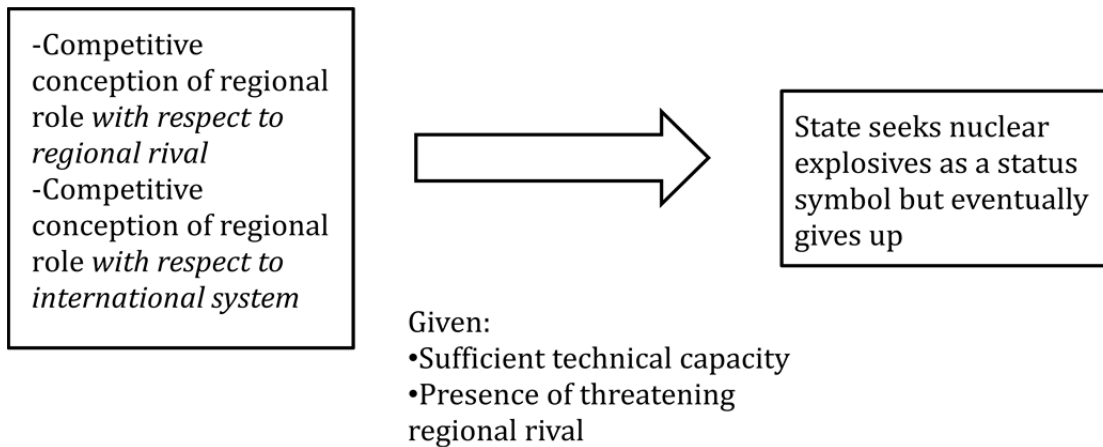Given:
•Sufficient technical capacity
•Presence of threatening regional rival

**Figure 5: Relationship between competitive regional role conception and nuclear weapons acquisition attempts**



-Competitive conception of regional role *with respect to regional rival*
-Competitive conception of regional role *with respect to international system*

State seeks nuclear explosives as a status symbol but eventually gives up

Given:
•Sufficient technical capacity
•Presence of threatening regional rival

In applying this hypothesis to the cases, I argue that Brazil's lack of a strong and consistent regional rival and a competitive attitude towards the international system informs Brazil's regional leader NRC. Although its military leaders seriously considered pursuing a nuclear explosive, ultimately this position was exposed as inconsistent with Brazil's understanding of itself as playing a role of regional unifier and South American standard-bearer, and Brazil formally renounced its nuclear ambitions and entered the NPT as a non nuclear weapons state. Indian policymakers, on the other hand, were faced with two key decisions—the first about the acquisition of a peaceful nuclear explosive (PNE), and the second about weaponizing that technology decades later. I argue that these decisions illustrate two different elements of India's regional role conception—the first decision can be understood as being consistent with India's expression of strong opposition to the existing international order and anti-imperialist sentiment, while the second decision is directly tied to Indian policymakers' understanding of their nation's regional role in direct opposition to Pakistan. The fact that in the Indian case these two decisions were made by leaders hailing from dramatically different ideological traditions further

emphasizes the importance of the influence of policymakers made by Breuning and others.

## 3.3.    Research Design

In this section the content and reasoning behind the thesis's overall research design will be explained.  This study employs a most similar systems design (MSSD) to compare two historical cases with regards to their nuclear decisionmaking.  In this section, the logic behind the case selection will be detailed and the comparability of the cases will be established.

*Comparability of Cases*

In this section the selection and comparability of the cases will be established with respect to national attributes, technical capabilities, security environments, and foreign policy themes.  These factors have been summarized in Table 3 below.

**Table 3: MSSD Comparison of Brazil and India**

| | Brazil | India | Source(s) |
|---|---|---|---|
| General Industry/Technology | Sufficient | Sufficient | (Jo & Gartzke 2007) |
| Latent Nuclear Capability | Sufficient | Sufficient | (Jo & Gartzke 2007) |
| Sensitive nuclear assistance | West Germany, United States | Canada, United States | (Solingen 1993) |
| NPT Status | Late ratification (waited until 1998) | Unratified | (UNODA, 2014) |
| Nuclear allies/security guarantees | None | None | (Solingen, 2007) |
| Desire for great power status/UNSC permanent membership | Yes | Yes | (Alden & Vieira, 2005) (Stuenkel, 2010, 2013) |
| Regime type | Military dictatorship (until 1985); Democracy | Democracy | (Barletta, 1997) (Cohen, 2001) |
| Threat from nuclear-armed neighbor | No | China (1970s) Pakistan (1990s) | (Hymans 2006) (Perkovich, 1999) |
| Neighbor with threatening nuclear power program | Yes (Argentina) | Yes (Pakistan) | (Doyle, 2008b) |
| History of colonialism (date of independence) | Portugal (1822) | Great Britain, Portugal (1947, 1961) | (Levine, 1999) (Cohen, 2001) |
| Demographics: Multi-ethnic, multi-cultural populations, unequal income distribution | Yes | Yes | (Levine, 1999) (Cohen, 2001) |
| Contemporary BRICS designation[2] | Yes | Yes | (Tett, 2010) |
| Nuclear Test(s) | None | 1974, 1998 | (Perkovich, 1999) |

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[2] BRICS, which stands for Brazil-Russia-India-China-South Africa, is an acronym coined by Goldman Sachs chief economist Jim O'Neill in 2001 to describe the next generation of emerging powerhouses in the global economy. More at: http://www.ft.com/cms/s/0/112ca932-00ab-11df-ae8d-00144feabdc0.html

Brazil and India are comparable cases by virtue of similar national attributes: international standing, socio-economic background, and material capabilities. Both states have a history of colonialism, multi-cultural populations, and have been designated as members of the contemporary "BRICS" (Brazil-Russia-India-China,-South Africa) grouping. Both states have also expressed their desires to be included as permanent members of the United Nations Security Council (UNSC). As a sign of their standing in the world, Brazil and India are some of the states most frequently elected to serve on the UNSC. Since the founding of the UNSC 68 years ago, either India (seven terms) or Brazil (nine terms) have been elected as non-permanent members for 32 of those years (United Nations, 2014).

Brazil and India also both clearly have the technical capabilities to pursue nuclear weapons. Jo and Gartzke measure the presence of uranium deposits, metallurgists, chemical engineers, nuclear engineers/physicists/chemists, electronic/explosive specialists, nitric acid production capacity, and electricity production capacity as an indicator of the production capabilities of a particular state (2007, p. 173). According to their dataset, both India and Brazil receive a perfect score for the presence of all seven of these indicators. India and Brazil received sensitive nuclear assistance with their civilian power programs—India from Canada and Brazil from West Germany (Solingen, 1993), acquiring significant components of the nuclear fuel cycle necessary to produce fissionable material. India and Brazil both have decades of experience operating nuclear power plants and possess significant facilities for fundamental research in physics.

Finally, it can be argued that Brazil and India have similar proliferation-related security factors. India and Brazil have had tense relationships with their neighbors—India and China fought a brief border war in 1962 and Brazil and Argentina have experienced many years of strained relations, including a long dispute over water rights and the Itaipu Dam. India has been in various stages of conflict with Pakistan since their formation as a result of the Partition of India in 1947. Of course, Argentina and Pakistan do not represent the same level of rivalry—Pakistan and India have fought many bitter wars and skirmishes over the years, whereas the rivalry between Argentina and Brazil was more rooted in a historic competition for dominance in South America. Still, one significant security indicator in the model is the presence of regional rivals pursuing potentially proliferative nuclear power programs, and both Argentina and Pakistan pursued such programs.

If Brazil and India were both in situations found to be consistent with nuclear proliferation, why did India pursue a nuclear explosive while Brazil did not? In this thesis, I argue that this question is answered by conceptual differences in the minds of policymakers regarding their state's national identity. Specifically, investigating the differences between the national role conceptions held by Brazilian and Indian policy makers will yield important insights into why Brazil renounced its nuclear ambitions, while India pursued first a "peaceful nuclear explosive" (PNE) in the 1970s, and then weaponized the technology almost two decades later. The study's case study structure is outlined in the next section.

## 3.4    Case Study Structure

The methodology of this thesis seeks to place the role statements of policy makers in their proper domestic, historic, and issue-specific contexts. The evaluations of the cases selected follows a comparative historical case study based on analysis of both secondary sources and original speech acts of policy makers. Each case study is investigated from a number of important angles, after which the findings are discussed.

First, for each case I evaluate the general foreign policy position of the state in detail and extrapolate general trends from the existing literature available. Foreign policy behavior and philosophy will be viewed in terms of the larger historical and cultural picture of each state. Second, the material and security inputs of nuclear decisionmaking will be discussed in detail, specifically focusing on the leader's perception of their state's latent nuclear capabilities and opportunity to act. Third, the ideational inputs will be investigated; this will consist of the leader's perception of national identity, references to culture and history, and addresses to his/her domestic audience.

With this background in place, the role conceptions of each leader will be determined based on their perception of both the ideational and material factors, expressed through public statements and memoirs. Key indicators are policymakers' references to their state vis-à-vis other states, allusions to nuclear weapons as a symbol of power and status, and references to technological progress as a national achievement. Ultimately this provides the leader's answer to the question, *are we a country that should possess nuclear weapons or not?* The final stage of analysis will assess the application of this nuclear role conception

to actual policy. Does the leader steer his/her country towards the pursuit of nuclear weapons? If so, how seriously do they pursue them?

To summarize, this section discussed the methodological underpinnings of the thesis. First, the most similar systems design comparison between Brazil and India was established. I examined the role typologies used in the literature in finer detail and developed my own derivative typology for the sake of this thesis. Finally, the case study structure was outlined, emphasizing how the identification of policymaker's national role conceptions will be placed within the wider context of the policymakers' perceptions of material and ideational factors. In the next chapter, the cases of Brazil and India will be evaluated according to this framework.

# CHAPTER 4

# BRAZIL: A BRIDGE FROM THE "WEST" TO THE "REST?"

In this chapter, the historical case of Brazil's nuclear program will be explored. First, the general foreign policy positions of Brazil will be reviewed in order to establish the context for the material and ideational analysis. Then the material and ideational inputs of Brazilian national role conceptions in the minds of policymakers will be discussed in detail. In the final section, the role conceptions and their linkages to this role formation process will be explored.

## 4.1.    Case Study Structure

As has already been discussed at length in the previous section, the case study structure is founded on the Breuning model of national role formation (Breuning, 2011). This model has been adapted to the policy area of nuclear proliferation, and reproduced again below in Figure 6:
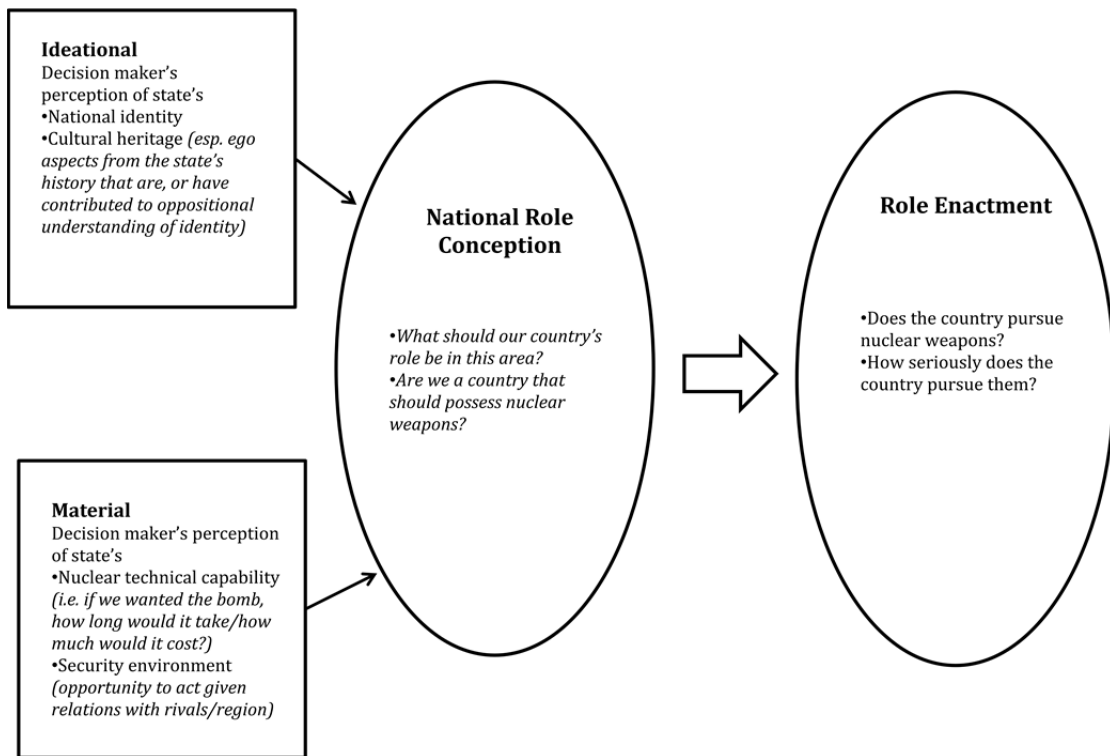
**Ideational**
Decision maker's perception of state's
•National identity
•Cultural heritage *(esp. ego aspects from the state's history that are, or have contributed to oppositional understanding of identity)*

**National Role Conception**

•*What should our country's role be in this area?*
•*Are we a country that should possess nuclear weapons?*

**Role Enactment**

•Does the country pursue nuclear weapons?
•How seriously does the country pursue them?

**Material**
Decision maker's perception of state's
•Nuclear technical capability *(i.e. if we wanted the bomb, how long would it take/how much would it cost?)*
•Security environment *(opportunity to act given relations with rivals/region)*

**Figure 6: Role-based framework for nuclear decisionmaking process showing ideational and material inputs, based on (Breuning, 2011)**

After a general review of Brazilian foreign policy and history, the material and ideational inputs of Brazilian national role conceptions are explored in detail. Then the national role conceptions of Brazilian foreign policy are detailed with reference to these material and ideational inputs. Finally, the role enactment of Brazilian policymakers is evaluated according to the hypotheses presented in the previous chapter.

Before embarking on the case study, the timeframe of analysis must be established. The aim of this case analysis is to capture key moments in Brazilian nuclear decision making, and as such, the existing scholarship has been consulted to determine an appropriate analysis timeframe. Barletta (1997) begins his analysis of the Brazilian military's parallel nuclear program with the technology transfer deal inked in 1975 between Brazil and West Germany.

Kassenova's (2014)  analysis has a much broader scope, and begins with Brazilian President Artur da Costa e Silva's decision in 1967 to push to acquire the full nuclear fuel cycle.  Doyle (2008a) takes a similar view, beginning his analysis of Argentina and Brazil in the late 1960s, with special attention on the 1975 West Germany-Brazil deal.  After a brief summary of Brazilian progress in the nuclear industry before 1975 to set the proper context, my analysis will focus on Brazilian nuclear decision making during the period of 1975-1991.

The endpoint of 1991 was selected for a number of reasons.  Barletta also concludes his analysis in 1991, citing Brazilian commitment to full ratification of the Treaty of Tlatelolco, establishing a Nuclear Weapons Free Zone in Latin America and the Caribbean (1997, p. 2).  Brazil also signed a bilateral safeguards agreement with rival Argentina in 1991, and agreed to allow IAEA inspectors access to previously-undeclared facilities associated with the military's parallel program (Doyle, 2008a, p. 317).  In the next section, a general overview of Brazilian foreign policy is presented to establish context for the rest of the analysis.

## 4.2.    General Foreign Policy Outlook

In this section, I extrapolate general trends from the available literature to establish a basic understanding of the foreign policy positions of Brazil.  Overall, Brazil's foreign policy has been influenced greatly by its geographic location in South America and proximity to the United States.  The content of Brazilian foreign policy often has been found to be shaped extensively by the trending

domestic economic development strategy. After a discussion of the determinants of Brazilian foreign policy, I will elaborate on trends in the content of Brazilian foreign policy in the 20th Century. Finally, both the determinants and the content of Brazilian foreign policy will be placed in their historical context as deduced from the literature.

*A Brief History of Brazil*

The nation of Brazil has captured the imaginations of scholars and politicians alike ever since earning its independence from Portugal in 1822. The world's largest Lusophone (Portuguese-speaking) nation, Brazil occupies almost half (47.3 percent) of the South American landmass (Permanent Mission of Brazil to the United Nations, 2013). Governed first as an Empire from 1822-1889, then as the Old Republic from 1889-1930, Brazil's early trajectory was closely linked with its status as an exporter of agricultural and mineral raw materials (Gordon, 2001, p. 142).

In the 20th Century, Brazilian leaders realized the need to industrialize as their society followed worldwide trends of urbanization and pursued policies aimed at development. The only South American nation which entered World War II, Brazil played a very active role in the establishment of the United Nations after the end of the war. Despite extensive lobbying efforts, Brazil was denied a permanent seat on the Security Council, and instead was offered the poor consolation prize of giving the opening address to the General Assembly every year (Burges, 2009, p. 21). After the military staged a coup in 1964, Brazil was

governed by a military dictatorship until democratic rule returned in 1985. After

the end of the Cold War, Brazil's economy has seen a resurgence and the nation

has been tagged as a member of the BRICS group of developing economies (Tett,

2010).


*Borders and Relations with Neighbors*

Brazil's foreign policy has been shaped by its location in the western

hemisphere. Brazil ranks 5th in the world in terms of both population and

landmass (Permanent Mission of Brazil to the United Nations, 2013), making it

one of the few truly "continental countries" of the world (Lafer, 2000). Brazil

also is one of the states with the highest number of neighbors: it shares a border

with 10 different countries. In addition, Brazil has not experienced drawn out

territorial disputes with its neighbors, and the disputes that it did have were

solved through diplomatic negotiation rather than military engagement (Lafer,

2000). Brazil has the additional advantage of the fact that these negotiations

occurred early in Brazil's history, largely thanks to José Maria da Silva Paranhos,

Jr., the Baron of Rio Branco. Rio Branco, as he preferred to be called, successfully

led diplomatic negotiations to resolve all of Brazil's outstanding territorial

disputes with its neighbors between 1902 and 1912 while he was the Brazilian

Minister of External Affairs (Lafer, 2000, p. 214). The considerable impact of Rio

Branco on Brazilian foreign policy will be revisited in later sections.

*Development Policy in Brazil's Foreign Relations*

The stability provided by the absence of serious conflicts with its neighbors has meant that Brazilian perceptions of their own insecurity are largely framed in economic, rather than strategic terms. One implication of this is that Brazilian foreign policy receives its cues largely from national economic and development strategies. Historically, this theme has been present in Brazilian foreign policy since the first presidency of Getulio Vargas (1930-1945), during which Brazil experienced a crippling economic contraction as the worldwide coffee market utterly collapsed due to the Great Depression (Burges, 2009, p. 20). This experience led to the rise of a *desenvolvimentista* (developmentalist) foreign policy as the Vargas administration sought international investment to build up Brazil's nascent industrial capabilities, specifically in the area of steel production (Burges, 2009, p. 20). It was not until World War II, however, that international investment began to flow after Brazil joined the Allies in 1942 (Hirst, 2005).

As the vision for the development of the economy changed, so did the nation's foreign policy. For Brazilian policy makers, foreign policy is seen as the means to achieve development goals, rather than projecting power to achieve geopolitical objectives. Some scholars (Burges, 2012; Daudelin, 2013; Soares de Lima & Hirst, 2006) trace shifts in foreign policy to corresponding changes in the development strategy adopted by the administration in power. Specifically, Brazil engages with the world largely to fuel its development at home and fight its woefully high levels of income inequality (Daudelin, 2013).

For example, Lima and Hirst (2006) identify two critical junctures in Brazilian foreign policy and trace their origins to shifts in domestic economic policy.  The first juncture occurred in the 1930s, as Brazil under Vargas' leadership shifted from a commodities-export based economy to an import substitution development strategy.  The second juncture occurred in the 1990s, as the decline of "protected industrialization" made way for greater integration into the global economy (Soares de Lima & Hirst, 2006).  This second foreign policy shift occurred under the leadership of President Fernando Henrique Cardoso (1995-2002), who attempted to redefine the sense of Brazilian independence from autonomy through distance to a logic of autonomy through integration in the world economy (Vigevani, Oliveira, & Thompson, 2007, p. 58).

This developmentalist perspective is particularly relevant during the military regime's stint in power from 1964 to 1985.  The military government evaluated Brazilian foreign policy primarily by how it served domestic development goals and provided economic benefits (Solingen, 1990).  Itamaraty's efforts became focused on the dual goal of opening new markets for Brazilian goods and attracting foreign investment to Brazil in a policy known as "the diplomacy of prosperity" (Solingen, 1990, p. 132).  This was reinforced by the 1973 oil crisis, where energy-starved Brazil fundamentally reassessed its foreign policy, specifically towards OPEC countries and the developing world.  Brazil sought to coordinate its diplomatic efforts in the developing world to foster the sale of technology and services to developing countries and OPEC nations, hoping to shift the balance of trade with Middle Eastern countries by

selling weapons in exchange for oil (Solingen, 1990). In the next section, Brazilian foreign policy will be discussed with relation to its thematic content.

## 4.3. Brazilian Foreign Policy: Thematic Content

Because of its limited ability to project economic and military power, Brazil is largely unable to act unilaterally on the global or even regional stage (Burges, 2012). Instead, Brazil uses a series of multilateral tactics to achieve its goals of influencing and shaping the system of global governance, which it deems as unjust to the global South (Daudelin & Burges, 2011). Brazilian policymakers speak of their nation's foreign policy in terms of two "axes:" one symmetric, one asymmetric (Alden & Vieira, 2005).

*Asymmetric Axis: Relations with "Core" Countries*

Brazil's relationships with the asymmetric axis of industrialized "core" nations largely consists of activity in international organizations (IOs). Since World War I, Brazil has been an eager—if often sidelined—participant in the organs of global governance. Brazilian policymakers have long attempted to be present at the negotiation table in order to compose the statutes of new organs and rewrite the rules of existing IOs. Brazil pushes for a voice in global decision-making and advocates for a more equal "distribution of decision-making" between the global North and South (Burges, 2012, p. 352). In general, Brazil has consistently worked hard to be one of the founding and active members of institutions of global governance.

Policymakers identify Brazil's relationship with the industrialized "core" nations of the world as asymmetric in nature. In order to improve its standing with these core nations, Brazil pursues a partnership with the United States, while at the same time working multilaterally to improve its standing internationally. This multilateral dialogue occurs on the symmetric axis, where Brazil places its relationships with states it views as peers or equals. Specifically, Brazil seeks to identify with states under similar pressure from the asymmetric axis and become a rallying point for these states to improve their bargaining position. This activity primarily occurs in the context of important international organizations such as the UN or GATT/WTO. In addition, Brazil has been responsible for the foundation of a plethora of new multilateral partnerships and for a as well as strengthening integration across the South American continent (Mercosur/Mercosul, UNASUL/UNASOL, Rio Group, etc.). In both types of organizations, Brazil attempts to rewrite the rules that govern the structure of international governance and be in a position to shape the writing of new rules as the occasion presents itself (Alden & Vieira, 2005).

*Symmetric Axis: Relations with "Peripheral" Countries*

In relations with states on the symmetric axis, Brazil pursues a series of strategies to magnify its own effectiveness in the international arena. One of these is "collectivizing" Brazilian objectives, bringing other states on board with the Brazilian position during the course of multilateral negotiations (Burges, 2012). The flipside of this tactic is the Brazilian effort to create consensus along the symmetric axis in such a way that benefits the Brazilian position with respect

to asymmetrical relations.  This is supported by Brazilian technical competence and technical capabilities which allow policy makers to follow the trajectory of complex multilateral economic negotiations.

*Relations with the United States*

Another key component of Brazilian foreign policy is its relationship with the United States.  The partnership has ebbed and flowed over the years given the different governments in power in Brasilia and Washington.  In general, cultivating deeper relations with Brazil has not been high on the list of American priorities, even in times of cordiality (Sweig, 2010, p. 2).  This is in spite of the fact that the two nations share strikingly similar histories of European discovery and colonization, dealing with the sociological implications of slavery, and of welcoming immigrant communities from Europe and around the world.  The United States' historical perspective on the Western hemisphere, flowing from the Monroe Doctrine, has kept the two countries intertwined for most of their histories.

The United States was the first country to recognize Brazil's independence from Portugal in 1822 and the US embassy in Rio de Janeiro was the first American embassy in South America (Hirst, 2005, p. 2).  Influential Brazilian foreign minister Rio Branco (1902-12) prioritized his country's relationship with the United States both as a buffer against European incursion and as a reinforcement of entente between Brazil and its South American neighbors (Hirst, 2005).  Burges names Rio Branco's strategy as a "Policy of

Approximation"—Rio Branco saw Brazil's role as being a lesser power under the sphere of US influence, supporting US leadership in dialogues with European powers (Burges, 2009, p. 19). Fitting his country's policies inside the context of the Monroe Doctrine allowed Rio Branco to position Brazil to become the interlocutor between the United States and South America, a position which was to dominate Brazilian foreign policy for many years to come (Smith, 2010).

World War II marked changes in the Brazil-US partnership, as Brazilian populist president Getúlio Vargas first pledged "nonaligned" assistance to the Allies before eventually joining the war on their side in 1942 (Burges, 2009, p. 21). This assistance consisted of allowing the US to build air bases along the northeastern coast to conduct anti-submarine missions in the South Atlantic and fly supply missions to Africa. These bases were also used to logistically support the Allied invasion of North Africa in 1942 (Smith, 2010, p. 121). Brazil sent a contingent of soldiers and airmen to the Italian front in 1944, the only South American nation to do so. However, this participation reinforced just how dependent Brazilian military remained on the United States—the Brazilian troops not only carried American weapons, but also wore US-supplied uniforms and ate American rations (Perruci, 1995, p. 377).

After the end of the war, Brazil was a very vocal advocate in the formation of the United Nations, expecting to be rewarded for its wartime support. American priorities were focused on the rebuilding of Europe however, and the much-hoped-for industrialization aid never materialized (Smith, 2010). Despite the objections of nationalist voices in Brazil, an agreement to supply the Brazilian armed forces with American military hardware and training was signed

in 1952 (Perruci, 1995).  Until the beginning of the 1960s, a vast majority of the equipment used by the Brazilian military was supplied by the United States, giving the US access to steer the institution of the military to support American policy positions (Perruci, 1995).

By the 1960s, the American foreign policy establishment was firmly focused on containing the spread of communism around the world, and Brazil was no exception.  American fears about Brazil stemmed from Brazil's increasingly assertive "independent foreign policy" and protectionist economic policies in the domestic arena (Smith, 2010).  Guided by the administrations of Janio Quadros (1961) and Joao Goulart (1961-64), Brazil sought to increase its autonomy and seek its own national interests independent of the bipolar world order, with implications for its relationship with the United States (Hirst, 2005, p. 7).  One such consequence of the independent foreign policy was the nationalization and restriction of American firms operating in Brazil.  This led US authorities to expand their dialogue with Brazilian institutions separate from the Goulart administration, specifically the military, which was growing increasingly troubled by and hostile to the policies of Goulart (Smith, 2010).  In 1964, responding to an increased worry over the direction of the country, the Brazilian military stepped in and overthrew Goulart in a coup.

The coup against President João Goulart was quietly support by a US government worried about the spread of communism around the world (Skidmore, 1988).  Throughout the 1960s, Brazil's military leaders viewed their country's progress as inseparable from its relationship with the US.  Brazil's economy was highly dependent on US investment—in the 1960s the US was

Brazil's leading source of civilian capital and military hardware, as well as the most popular destination for Brazilian products (Skidmore, 1988, p. 192). Yet by the mid 1970s, the regime's authoritarian policies—especially human rights abuses by the regime's secret police—caused many in the US foreign policy establishment to lose their already-tepid enthusiasm for Brazil (Smith, 2010).

The underlying strains in this relationship were exposed during the presidency of Ernesto Geisel (1974-78). Geisel's foreign policy mantra of "responsible pragmatism" involved Brazil distancing itself from the US and expanding Brazil's bilateral trade with other nations (Pinheiro, 2013, p. 119). The goal of this new "ecumenical" foreign policy outlook was the removal of external hindrances of Brazil's progress in economic and technical sectors (Pinheiro, 2013, p. 122). This particularly manifested itself in the Geisel government's pursuit of nuclear technology. Seeking the independence of the full nuclear fuel cycle, Brazil first approached the US, then West Germany to acquire the technical know-how. The staunchly proliferation-wary Carter administration put considerable pressure on West Germany not to go ahead with the deal, while also putting pressure on Geisel's government based on its human rights violations. In the end, although the deal was signed, the US was able to effectively cripple the fledgling Brazilian nuclear program by slowing its momentum and preventing the transfer of key technologies (Skidmore, 1988).

Overall, Brazil's relationship with the United States has been characterized by Daniel van Eeuwen as swinging between periods of "conflictual bipolarity" and "cordial rivalry" (as cited in Daudelin, 2013, p. 211). According to many scholars, Brazil seeks partnership in its relationship with the United States, yet resists

conformity to American demands. These challenges to the status quo are often perceived as rebellion or shielded hostility by US policymakers. Burges (2012) describes a desire of policymakers to be treated as equals by the US and a resentment when they are ignored by the superpower. Lafer (2000) provides a contemporary Brazilian perspective on the Monroe Doctrine: it should no longer be a unilateral declaration by the US, but rather imbedded in the International Law of the Americas and subject to more multilateral input from the region (Lafer, 2000, p. 219). These overtures have not received much serious attention from the US as a general rule. Overall, Brazil has always avoided direct confrontation in its relations with the United States, but relations have consistently been strained through crises of expectation from both parties.

*Shift from Bilateral to Multilateral Engagement*

Brazil's foreign policy, while retaining common threads throughout the 20th Century, has undergone several important changes over the years. One of these changes is the shift in focus from bilateral to multilateral engagement. For many years, Brazil emphasized its bilateral agreements with individual states, especially its relationship with the United States. This began to change during the military dictatorship era (1964-1985) once the regime's relationship with the US soured during the Geisel Administration. Specifically, President João Figueiredo (1979-1985) began to emphasize Brazil's Latin American identity through reaching out to other leaders in the region and starting initiatives aimed at achieving regional consensus over specific issues (Saraiva, 2010, p. 156).

Under Figueiredo's leadership, Brazil signed the Tripartite Agreement on Corpus and Itaipu with Paraguay and Argentina in 1979, ending a complicated (and at times hostile) debate over the impact of the Itaipu dam built on the border between Paraguay and Brazil (Selcher, 1985, p. 25). Tensions with Argentina were reduced further when the two nations' presidents visited each other's capitals in a show of openness in 1980. Saraiva (2010) attributes the steps taken by Brazil towards regional engagement at the end of the 1980s back to these early actions by Figueiredo. By the end of the 1980s, Brazil's relationship with Argentina was almost unrecognizable, with the two nations signing the agreement that served as the foundation for Mercosur in 1985. Assurances in the area of nuclear technology began the same year with a joint presidential statement on Brazilian-Argentine nuclear collaboration, and culminated with the foundation of the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) in 1991 (CNEA, 2014).

*Brazilian Nuclear Energy Timeline*

Although Brazil's interest in nuclear technology started early, with research in atomic physics taking place at the country's universities as early as the 1930s, the story of nuclear energy in Brazil really begins with the Manhattan Project during World War II. As nations around the world scrambled to survey and secure their uranium reserves, Brazil entered a secret agreement with the United States to provide the Manhattan Project with raw uranium ore procured from Brazilian mines (Patti, 2014). This arrangement continued until the mid-1950s, when it was replaced by a policy of "specific compensation," largely at the

insistence of Brazilian leaders (Flemes, 2006, p. 10).  A key turning point came in

1947, when Admiral Alvaro Alberto, the Brazilian envoy to international nuclear

negotiations, proposed a Brazilian atomic energy program to a meeting of the

National Security Council.  Admiral Alberto also demanded a seat for Brazil on

the proposed international governing body for nuclear energy (Patti, 2014).

The Brazilian efforts to acquire nuclear technology experienced a period

of wheel-spinning in the early 1950s.  Although Alberto was appointed director

of the newly-founded National Research Council in 1951, attempts to acquire

nuclear technology internationally all fell flat.  In 1953-54, Brazil approached

both France and West Germany about signing nuclear technology transfer deals,

but neither country was willing at the time (Patti, 2014).  Admiral Alberto was

able to purchase centrifuges for investigating uranium enrichment from the

University of Göttingen  in West Germany, but the equipment was not delivered

because the US ordered the confiscation of the sensitive technology (Nedal &

Coutto, 2014).  Finally in 1955, Brazil signed an Atoms for Peace agreement with

the United States, with the first research reactor completed in 1957.  In 1956, a

Parliamentary Commission of Inquiry on nuclear energy established the national

Nuclear Energy Commission, assigned to report directly to the Presidency of the

Republic.  The strategy developed by the commission was ambitious, but lacking

in strategic application, which led to propagation of inefficiencies in the Brazilian

efforts.

In 1962, Brazil proposed to the United Nations that a nuclear weapons

free zone be proclaimed in Latin America, and in 1967, the Treaty of Tlatelolco

was drafted in Mexico City (Solingen, 1990, p. 142).  Although Brazil ratified the

treaty in 1978, it did not waive the provision that the treaty had to be ratified by all parties before it could be recognized as binding, which effectively meant that Brazil had no obligations under the treaty until every state in the region also ratified. Argentina also did not waive this provision, resulting in a stalemate that continued for decades—Brazil did not fully ratify the Treaty of Tlatelolco until 1994 (Kassenova, 2014, p. 52).

In 1967, Army marshal-turned President Artur da Costa e Silva decided to acquire the full nuclear fuel cycle, putting forth a plan that stipulated the purchase of nuclear plants, fuel cycle facilities, and a national atomic industrial and research park (Patti, 2014). These plans finally began to take concrete shape in 1971 when the (Brazilian) National Nuclear Energy Commission signed a deal with American firm Westinghouse and the US Atomic Energy Commission to purchase a pressurized water reactor. The deal included a fuel guarantee— Westinghouse was to provide the reactor with fuel and retain possession of the spent fuel rods, effectively confining Brazil to the generation segment of the nuclear fuel cycle. For the next few years, Brazil continued to pressure Westinghouse to include enrichment and fuel fabrication technologies in the deal, while Westinghouse responded with offering to sell Brazil additional reactors. These efforts gained new urgency in the face of the 1973 OPEC oil crisis. In 12 months, Brazil's imports doubled in size from $6.2 billion to $12.4 billion, largely as a result of the skyrocketing oil prices (Skidmore, 1988, p. 180). That same year, motivated by the need to find alternative energy sources, the Brazilian state electricity company Eletrobrás issued "Plan 90," a proposal to build 12 nuclear power plants in the country by the year 1990, all to be

purchased from Westinghouse at the cost of $10 billion (Skidmore 1988, pg 194), although this extension did not gain traction.

In 1975, facing hardship from the 1973 oil embargo and the threat of the loss of the Westinghouse fuel guarantee (Doyle, 2008a, p. 313), Brazil announced a massive agreement with West German consortium Kraftwerk Union (KWU) for acquiring the entire nuclear fuel cycle.  Initially valued at around $10 billion, the agreement consisted of the construction of eight nuclear power plants, prospecting for uranium mining, enrichment technology transfer, and building up Brazilian heavy industry for domestic construction of nuclear plant components (Solingen, 1990, p. 138).  However, faced with delays, skyrocketing costs, and technical incompetency, implementation of the agreement slowly faded away by the mid-1980s, leaving Brazil with a smattering of unfinished projects, including two half-completed reactors.  The deal had raised suspicions regarding Brazil's intentions, especially since the transferred technologies were not required to be under international safeguards (Doyle, 2008a).

The unsafeguarded parallel research program was begun in the late 1970s by the military with the support of CNEN.  The Navy researched centrifuges for uranium enrichment and nuclear propulsion systems for submarines, while the Air Force pursued the laser enrichment method and embarked on feasibility studies on constructing a nuclear explosive.  The Army built an experimental graphite research reactor which could be used to produce plutonium (Doyle, 2008a).  Working under secrecy, civilian and military researchers made more progress than the declared program, although it is not

believed that Brazil ever produced significant amounts of weapons-grade fissile material (Doyle, 2008a, p. 314).

With the return to civilian rule in 1985, the Brazilian public increasingly associated the nuclear programs with the oppressive military regime. As more and more details about the secret parallel program were released to the public, policymakers increasingly were under pressure to expose and end the programs of the previous regime. At the same time, improving relations with Argentina led to increased cooperation in nuclear verification and safeguards. This was formalized in 1991 by the two states in a bilateral agreement promising to use nuclear technology for peaceful purposes only. Along with this agreement came the foundation of the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) tasked with enforcing the Common System of Accounting and Control of Nuclear Materials (SCCC) agreed on by the two states. As part of the negotiations for Argentine and Brazilian accession to the NPT as non nuclear weapons states, the Quadripartite Agreement was signed in 1993 between the IAEA, ABACC, Brazil, and Argentina and entered into force in March 1994 (Doyle, 2008a). This agreement stipulates that Brazil and Argentina's obligations to the IAEA will be applied by the ABACC in consultation with the IAEA with limited verification efforts conducted by the IAEA to assure the trustworthiness of the ABACC's conclusions (NTI, 2013b). The Quadripartite Agreement of 1993 paved the way for both Argentina and Brazil to accede to the NPT as non nuclear weapons states in 1995 and 1998 respectively. In the next section, the material inputs of Brazilian nuclear policy will be discussed.

## 4.4.    Brazilian Nuclear Policy: Material Inputs

In this section I summarize the material inputs of Brazilian nuclear policy. The modified Breuning model defines the material inputs of nuclear policymaking as policymakers' perceptions of their nation's relevant technical capabilities and their nation's security environment (Breuning, 2011). In the Brazilian case, these are the specifics of the nuclear procurement strategy, the economic dilemma created by the 1973 oil embargo, and Brazil's rivalry with Argentina. This section begins with an overview of the history of the Brazilian nuclear program, focusing on the acquisition of key fuel cycle facilities as detailed in the previous chapter. After this the period of 1975-1991 will be discussed in detail, beginning with the signing of the Brazil-West Germany nuclear cooperation deal, and ending with the Brazilian signing of a bilateral safeguards agreement with Argentina in 1991. During this period, the shock to the Brazilian economy caused by the 1973 oil embargo, separate developments in the relationship with Argentina, and the United States' opposition to the technical details of the nuclear deal with West Germany set the tone for Brazilian role conception in the policy area of nuclear technology.

*Acquisition of key fuel cycle facilities*

This section details the acquisition of key fuel cycle facilities by Brazil, which are summarized in Table 4 below:

**Table 4: Key Brazilian Fuel Cycle Facilities**

| Technical Capability | Facility Details | Year |
|---|---|---|
| Source of Fissile Material | Mines at Poços de Caldas and Caetité | 1952 (first survey) |
| Operating Research Reactor | IEA-R1 'swimming pool' type RR, São Paulo | 1957 |
| | *Argonauta*, first domestically-designed/built RR, Rio de Janeiro | 1965 |
| Conversion Facility | Laboratory facility: Aramar Experimental Center, Iperó | Early 1980s |
| Enrichment Capability | Industrial facility: Aramar Experimental Center, Iperó | 1987 |
| | Commercial production facility: Resende Nuclear Fuel Factory | 2002 |
| Reprocessing Capability | None | ---- |

*Domestic Source of Fissile Material:*

Brazil began organized surveying for uranium deposits in 1952, although industrial-scaled production of uranium ore did not begin until 1982 (IAEA, 2012). Uranium ore was mined primarily in Pocos de Caldas in Minas Gerais until that mine closed in 1997 and starting in 1999 at the Caetité mine in Bahia state(World Nuclear Association, 2014). Caetité is currently the only operating source of uranium in Brazil, although Santa Quitéria, a new mine in Ceará state, is being prepared for operation (World Nuclear Association, 2014). Uranium

mined in Brazil is currently shipped out of the country for conversion and enrichment, then brought back to be fabricated into fuel and used in the country's nuclear reactors (Kassenova, 2014).

*Operating Research Reactor*

Brazil's first research reactor, the IEA-R1, was built in São Paulo with American assistance through the Atoms for Peace program and first achieved criticality in 1957(Saxena, 2007). The IEA-R1 was followed by the IPR-R1, a Mk. 1 TRIGA-type reactor built at Minas Gerais in 1960 (Saxena, 2007). By 1962, a landmark was reached: the *Argonauta*, an indigenously-built (93%) research reactor was completed (IAEA, 2013). Despite this advancement, the turmoil caused by the political crisis of 1961-64, which ended in the military coup of 1964, limited the execution of nuclear projects—the *Argonauta* did not reach first criticality until 1965 (Saxena, 2007). Currently, Brazil operates four research reactors, located in the cities of Sao Paulo, Belo Horizonte, and Rio de Janeiro. These facilities are used to train staff and power plant operators, produce radioisotopes for medical, agricultural, and industrial applications, and conduct scientific experiments (Open Source Center, 2009).

*Conversion Facility*

Uranium conversion is defined as the process by which uranium ore is chemically converted into $UF_6$ gas in preparation for introduction to the enrichment plant (Lamarsh & Baratta, 1997). $UF_6$ gas is highly corrosive and

toxic, making it chemically very difficult to work with in industrial processes.  In the official declared program, Brazilian scientists gained expertise in working with UF$_6$ through the partnership on researching the Becker nozzle enrichment technology, while the military covertly acquired two hundred kilograms of the material from China in order to test their systems at IPEN (Barletta, 1997, p. 13). By the early 1980s, Brazilian scientists at IPEN had successfully mastered the conversion process and had developed a pilot conversion facility at the Aramar Experimental Facility in Sao Paulo (Patti, 2014).  Today, although there are plans for an industrial size conversion facility at Resende, all of Brazil's commercial uranium conversion is contracted to Areva in France (World Nuclear Association, 2014).

*Reprocessing Capability*

Reprocessing capability is defined in the model as the ability to recover fissile material from spent nuclear fuel (Duderstadt & Hamilton, 1976).  Uranium and plutonium found in spent fuel rods is extracted chemically and can be recycled for use in new fuel.  The main proliferation risk of an industrial-sized facility is the risk of diversion—some fissile material may be separated from the flows of material through the plant and used in an undeclared weapons program, undetectable by international safeguards.  "Hot cells," shielded work environments where researchers can perform small-scale operations with spent fuel using remote manipulators or lead-loaded gloves, are also of proliferation concern since they may be used to break apart the spent fuel and separate enough plutonium for use in a weapon.  Although Brazil eagerly sought industrial

reprocessing technology from West Germany in the 1970s, the country still lacks a reprocessing capability or even the hot cells needed to work with spent fuel (Perrotta, 2008; World Nuclear Association, 2014).

*Enrichment Capability*

Essential to the production of nuclear fuel, enrichment capability is defined as any facility which increases the isotopic percentage of uranium-235, allowing the fuel to be used in a sustainable chain reaction (Duderstadt & Hamilton, 1976). The production of nuclear fuel for a power reactor requires an enrichment of 3-5% U-235, but enrichment levels above 20% U-235 are considered to be highly enriched uranium (HEU) by the IAEA and considered to be a proliferation risk (IAEA, 2001). Brazil first sought to acquire centrifuges for enrichment from West Germany in the 1950s, but was blocked by the United States. The 1975 Brazil-West Germany nuclear accord contained the transfer of experimental Becker nozzle enrichment technology, which turned out to be a failure (Solingen, 1990). The military's parallel program, however, achieved success with developing high-speed ultracentrifuge technology which has been funneled into the civilian efforts currently under safeguards (Barletta, 1997). Using this technology developed by the navy, an industrial-sized facility at Resende has begun operation in 2009. The Resende facility was targeted to produce 60% of the country's commercial fuel needs by 2012, with the goal of complete enrichment autonomy and export on the international market by 2018 (World Nuclear Association, 2014).

*1975 Brazil-West Germany Nuclear Accord*

In this section, the Brazil-West Germany nuclear accord of 1975 will be discussed. First the background of the deal will be explored in the context of the worldwide energy crisis of the 1970s, then the impact of the experience of the deal on policymakers will be explained.

By the 1970s, Brazil had risen to the dubious distinction of being the developing world's leading importer of oil—80% of Brazil's oil came from foreign sources in 1973 (Skidmore, 1988, p. 178). This situation, combined with the world recession of 1973-74, forced Brazil to fall further and further into debt on the international market as it attempted to fuel growth at home with increasingly expensive imports. By 1976 Brazil had eclipsed all others as the largest debtor nation; Brazil was the largest single country indebted to the World Bank (Roett, 1976). The sudden rise in oil prices from the OPEC embargo proved to be a significant contributor to Brazil's balance-of-payments woes during the 1970s. Brazil desperately needed alternative sources of energy.

The reliance on both foreign investment and energy sources increasingly became perceived by policymakers as an issue of Brazil's autonomous international identity and foreign policy direction (Soares de Lima & Hirst, 2006, pp. 23–24). Lima and Hirst observe how the Brazilian foreign policy outlook has been "very heavily shaped by the prevailing economic model" (2006, p. 22),

confirming that for Brazilian policymakers, the economic realities of their country's position in the 1970s directly led to an intensification of their pursuit of nuclear technology. At the same time, the oil embargo and subsequent worldwide economic downturn emphasized Brazil's overreliance on foreign sources of energy and capital. The effects of this 'institutional memory' (Soares de Lima & Hirst, 2006) has can be seen in the progression of nuclear cooperation and technology transfer agreements pursued by Brazil during this period.

The 1975 accord consisted of a transfer of the entire nuclear fuel cycle: uranium surveying and mining, uranium enrichment using the experimental Becker jet nozzle technology, an industrial size fuel fabrication facility, a pilot facility for spent fuel reprocessing, and nuclear reactors (Skidmore, 1988). The deal was negotiated by Itamaraty without seeking input of the Brazilian scientific community and submitted Brazilian state enterprise Nuclebras to the close control of KWU (Barletta, 1997, p. 5). The alienation of the scientific community was complete when the experimental nozzle-based enrichment technology turned out to be a failure, and the entire project was wracked with cost overruns consolidating their support behind the secret military parallel project.

In fact, according to Dr. Marco A. Marzo, former director of the safeguards division of the Brazilian Nuclear Energy Commission, there was an extensive debate between political authorities and the scientific community regarding the natural/LEU pathway decision for the civilian industry in Brazil (ISIS, 1996). Skidmore (1988) fleshes out this debate as the effect of the involvement of Itamaraty, the Brazilian foreign ministry, in the nuclear negotiations. In the end Itamaraty's political officials won out and first the Westinghouse turnkey plant,

then the 1975 West Germany deal were pursued as components of a LEU-based civilian power strategy. This outcome had important implications for the Brazilian government's reaction to the sea-change in American nuclear policy at the end of the 1970s—the LEU power generation strategy was heavily reliant on the fuel guarantees provided by the United States and the virtual monopoly that the US enjoyed in the LEU enrichment sector.

Barletta concludes that the Nuclebras-KWU deal was based on a "narrow bureaucratic and policy coalition" and galvanized civilian and military elements to join in opposing the official effort in favor of a nuclear program which built up an autonomous domestic capability (Barletta, 1997, p. 5). This alliance led to the emergence of the so-called parallel program which will be discussed in the next section.

The impact of the 1975 accord on policymakers was substantial. Dr. Marzo relates how the difficulties experienced by the Brazilian program as a result of American opposition "contributed decisively to the motivation to implement a domestic nuclear program" (ISIS, 1996). Marzo singles out inconsistencies in fuel supply for Angra-I due to the US Nuclear Nonproliferation Act (1978) and the technical failures of the cooperation agreement with KWU as key factors in the decision-making calculus for starting the military's parallel program (ISIS, 1996). Frustrated that the goal of technological autonomy would not be achieved by the Nuclebras-KWU accord, a group of military leaders proposed an alternative free of the constraints of international sanctions, gaining the approval of both government officials and civilian scientists (Barletta, 1997). This parallel program will be discussed in detail in the next section.

*The Military's Parallel Program:*

The difficulties with the West German deal, especially the faulty jet-nozzle enrichment technology led Brazilian policymakers to turn elsewhere in their quest for domestic mastery of the nuclear fuel cycle.  The *Programa Autonomo de Techologia Nuclear* (PATN), or Autonomous Program of Nuclear Technology, also known as simply the parallel program, was a secret nuclear development project started by Brazil's military dictatorship during the late 1970s.  PATN was supported by elements of the civilian scientific research community unhappy about being excluded by Itamaraty in the 1975 West German deal.  That accord had been negotiated by a small group of bureaucrats from Itamaraty and the president's own office, so the actions of the military-civilian coalition in developing the parallel program signal dissatisfaction with the way the Geisel government had been handling the nuclear issue (Barletta, 1997).  When Joal Figueiredo (1979-1985) assumed the presidency, he gave official sanction to the fledgling effort on the advice of his military advisers.  In 1990, Figueiredo testified before the Parliamentary Commission of Inquiry and assumed full responsibility for starting the PATN (Barletta, 1997).

All three branches of Brazil's military pursued the acquisition of fissile material using different techniques.  The Navy worked on developing ultracentrifuges for uranium enrichment, while the Air Force pursued the laser method of enriching uranium.  The Army worked on a graphite-moderated reactor for the production of plutonium (Doyle, 2008a).  Of the three, the Navy's program was by far the most successful—the Navy was interested in nuclear technology as propulsion for submarines.

Known as "Operation Cyclone," the Navy's effort began in 1979 under the leadership of Othon Luiz Pinheiro da Silva. Pinheiro da Silva had been inspired during his time at MIT as a student by an encounter with a professor who mocked the jet nozzle enrichment technology and Brazil's purchase of it in 1975 (Guizzo, 2006). Pinheiro da Silva's team used the Institute of Technological Research (IPEN) in São Paulo because it was the only major research center not associated with Nuclebras. All the Nuclebras facilities were subjected to IAEA safeguards under the KWU-Nuclebras deal, whereas the IPEN was not subjected to any IAEA inspections.

Pinheiro da Silva's team saw swift progress with the difficult technology: in 1981 the first centrifuge was constructed (Barletta, 1997, p. 6), one year later the first enrichment experiments were conducted (Guizzo, 2006), and a mini cascade of nine centrifuge units had been built by 1984 (Barletta, 1997, p. 6). Mastery of the enrichment process probably occurred sometime in 1986 but it wasn't announced until 1987, in order to finish the import of sensitive machinery, including a specialty lathe needed to create fine parts for the ultracentrifuges before an international backlash occurred (Barletta, 1997, p. 13).

In contrast with the Navy's efforts, the Air Force and Army struggled to focus limited resources on a winning technology. The Air Force researched laser enrichment of uranium, nuclear power systems for satellites, fast breeder reactors, and was tasked with researching the production of a nuclear explosive (Barletta, 1997, p. 10). The Army built a graphite research reactor at its Institute of Special Projects (IPE) in Guaratiba (Barletta, 1997, p. 10). Both the Air Force

and Army had limited collaboration with civilian scientists, whereas the Navy aggressively recruited civilian contributors to its program. As the Navy experienced successes with its centrifuge program, more and more resources were allocated to its program and its projects were expanded in comparison with the other two services' efforts (Flemes, 2006, p. 14).

After the return to civilian rule in 1985, President Jose Sarney (1985-1989) was notified of the secret program and approved its continuation (Barletta, 1997, p. 10). It was Sarney who in 1987 announced the parallel program's successful enrichment of uranium. This accomplishment was announced the day before Brazilian Independence Day on prime-time television in a move which emphasized the significant step towards national nuclear autonomy (Barletta, 1997, p. 26). Sarney proclaimed that the accomplishment of enrichment was "a fact of great transcendence in the scientific history of Brazil" and a "symbol of the capacity of the Brazilian scientist, of his determination, his competence, a symbol of Brazil's unbeatable vocation for modernity" (Barletta, 1997, p. 26). At the same time, President Sarney underscored the peaceful nature of Brazil's efforts, misleadingly portraying it as the product of a civilian research program (Barletta, 1997). A year after President Sarney's announcement, construction on a full-scale pilot enrichment facility using the ultracentrifuge technology began at Iperó (Morrison, 2006).

The secret parallel programs were dismantled in 1989-90 and the gains achieved were folded into the declared civilian program. Sarney's successor in office, President Fernando Collor (1990-impeached in 1992) sought to rein in the power of the military in politics and assert civilian rule. Public opinion was

firmly against the armed forces as revelations of corruption and brutality from the military regime era continued to surface. As a public symbol of civilian control over the military, Collor oversaw the pouring of concrete to fill a series of boreholes drilled by the Air Force at a base Cachimbo in northern Brazil. These shafts were allegedly intended for a future nuclear explosive test. In front of a live television audience, Collor personally shoveled wet concrete into the shafts, showing he was serious about putting the military's legacy firmly in the past (Flemes, 2006). At the same time, Collor was also continuing a process of *rapprochement* begun by his predecessors with Argentina. In the next section, the Argentine-Brazilian rivalry will be described.

*Rivalry with Argentina*

Another key material input to the nuclear decisionmaking process in Brazil was the worrying developments across the border in Argentina. The Argentine-Brazilian rivalry has been characterized as the "oldest of South American conflicts" and has its roots in the rivalry between Spain and Portugal in their conquest of the continent (Child, 1985, p. 98). Throughout the nineteenth century, the rivals confronted each other over influence in Uruguay and Paraguay. In the twentieth century, the two nations differed considerably on their approach to World War II: Argentina, while remaining neutral, was vocal about its Axis sympathies, while Brazil entered the war on the side of the Allies as has been discussed earlier. In the post-war era, the promise Argentina had shown as an economic miracle faded, while Brazil's fortunes seemed only to rise in comparison (Child, 1985). With the balance shifting more and more towards

Brazil, some Argentine military policymakers were feeling the pressure by the 1980s, although they remained in the minority of voices in that state's military government (Barletta, 1997).

This rivalry took on a new flavor when German conglomerate Siemens AG signed an agreement with the Argentine government and started construction on a natural uranium-fueled power plant *Atucha I* in 1968. Argentina had made the decision[3] to pursue a nuclear fuel cycle based on natural uranium. Argentina's domestic sources of uranium were plentiful, making a natural uranium fuel cycle an attractive option (Doyle, 2008a, p. 311).

The natural uranium fuel cycle also had the benefit of limiting Argentina's dependence on external sources of enriched uranium, but necessitated the purchase of heavy water from the international market. Heavy water is an essential component of a nuclear reactor fueled with natural uranium as it lowers the energy of neutrons properly to cause fission in natural U-238 atoms (Duderstadt & Hamilton, 1976). Without heavy water for use as a moderator, a reactor fueled with natural uranium will not reach criticality, the self-sustaining state capable of producing power. Because spent fuel from natural uranium-fueled reactors contains plutonium in high quantities, natural uranium-fueled reactors (and subsequently heavy water) are perceived as a proliferation risk and technologies associated with them are controlled (Doyle, 2008b).

Argentina's Atucha I reactor was finished in 1974, making it the first operational nuclear power plant in Latin America. By the late 1980s, according

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[3] Argentine scientists played a crucial role in this decision for natural uranium, as described in detail by (Solingen, 1993) and (Hymans, 2006).

to some estimates, Atucha I had produced enough plutonium to potentially build a nuclear weapon, and Argentina had embarked on a secret project to develop a clandestine uranium enrichment facility (Hymans, 2006, p. 158). These efforts in Argentina picked up pace in response to the announcement of the massive Brazil-West Germany nuclear contract in 1975. The unsafeguarded Pilcaniyeu enrichment plant was opened in 1983 and began enriching uranium to 20% $U^{235}$ in 1988 (Doyle, 2008a, p. 312). More worrisome still was the Ezeiza reprocessing facility, as it was to be subject to international safeguards only when processing safeguarded fuel (Doyle, 2008a, p. 312). Construction at Ezeiza began in 1978 and was to have begun operations in the early 1980s, but technical difficulties prevented the plant from progressing beyond a laboratory-sized facility (Doyle, 2008a). Neither Brazil nor Argentina was constrained by the Nuclear Non-proliferation Treaty or by the Treaty of Tlatelolco, a fact which certainly contributed to rising tensions which some interpret as the beginning of a burgeoning security dilemma in the Southern Cone (Velázquez, 2004).

For Brazilian military policymakers, the Argentine acquisition of the heavy water reactor and clandestine work on uranium enrichment were worrisome for several reasons. Brazilian decision makers were concerned about nuclear developments across the border because the Argentine program was more technically advanced, clandestine in nature, and contained within the Argentine military's strategic calculus (Barletta, 1997, p. 15). According to the Brazilian analysts and policymakers interviewed by Barletta, their understanding of Argentina's strategy was one of matching the imbalances of power between their nation and Brazil through the acquisition of nuclear

technology (Barletta, 1997, p. 15). Still, consensus shows that there was no clear military threat perceived by Brazilian leaders from Argentina during the period of analysis (Barletta, 1997; Child, 1985; Doyle, 2008a). Instead, Barletta's sources point to the importance of the concept of "technological deterrence" in the minds of Brazilian policymakers (Barletta, 1997, p. 16). Brazilian leaders felt the pressure to seek enrichment as away to deter a future Argentine nuclear device by presenting the ability to match it, thereby negating the Argentine calculus of making up the capability gap between the two countries.

Yet through careful analysis, Hymans (2006) shows that Argentine opposition to the nonproliferation regime had less to do with its nuclear ambitions and more to do with its standoffish attitude to having its sovereignty constrained by international treaty obligations. In 1980, faced with US accusations of a developing arms race, Brazil and Argentina used diplomatic momentum from their recently signed accord over the Itaipu Dam to sign an agreement of formal dialogue between the two nations' nuclear development agencies (Hymans, 2006, p. 161). Neither side was eager to open their facilities up for international inspection, so a system of verbal security assurances and technical dialogue developed, which satisfied the needs of the military governments in Brasília and Buenos Aires.

The first concrete step in this process was taken by Joao Figueiredo in May 1980, when he became the first Brazilian president to visit Buenos Aires in 40 years (Doyle, 2008a). During his visit, a formal cooperation agreement between the atomic energy commissions of Brazil and Argentina was signed. The warming of relations was accelerated by the demise of the military

governments in Brasilia and Buenos Aires in the mid-1980s. In 1985, the Declaration of Iguazu was signed by the democratically-elected presidents of both countries, establishing a Joint Committee on Nuclear Policy as a platform for continued mutual exchange relating to the nuclear issue (Doyle, 2008a, p. 317).

In 1986, Argentine officials were allowed to visit the Brazilian Navy's research facility at IPEN, and in 1987, President Sarney sent his Argentine counterpart President Alfonsin a letter giving him advance notice that Brazil would soon be announcing its successful enrichment of uranium (Doyle, 2008a, p. 317). The process of opening continued with a second Argentine visit to IPEN and a reciprocal Brazilian visit to the Ezeiza reprocessing facility in 1988 (Doyle, 2008a). This led to the two country's leaders signing the Joint Declaration of Common Nuclear Policy at Foz de Iguazu in November 1990, pledging to use nuclear technology only for peaceful ends, including the rejection of peaceful nuclear explosives, and comply fully with the Treaty of Tlatelolco (Doyle, 2008a). The Joint Declaration was formalized in July 1991 with the signing of the Guadalajara Accord, which established the Joint System of Accounting and Control of Nuclear Materials (SCCC) to ensure that no fissile materials were diverted to covert military programs (Doyle, 2008a, p. 318). The Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) was formed to apply the SCCC in both countries (Leventhal & Tanzer, 1992). Finally in 1991, a framework for full-scope international safeguards was established with the Quadripartite Agreement between Brazil, Argentina, ABACC, and the IAEA, which outlined the responsibilities of each party with regards to

safeguards, inspection, and accounting and control of nuclear material (Leventhal & Tanzer, 1992).

*Conclusion*

In conclusion, the material inputs of Brazilian nuclear policy can be summarized as a combination of policymakers' perceptions of their nation's relevant technical capabilities and their nation's security environment. In the Brazilian case, these are the specifics of the nuclear procurement strategy, the economic dilemma created by the 1973 oil embargo and subsequent nuclear accord with West Germany, and the rivalry with Argentina. Underlying Brazil's nuclear procurement strategy was a consistent desire for technological autonomy, a desire which was strengthened in response to American opposition to the 1975 Brazil-West Germany nuclear accord and loss of the fuel supply guarantee in 1978. The military's parallel program benefited from this shared desire for autonomy and opposition to the official declared program among military and civilian researchers, which led to the development of Brazil's independent enrichment capability in the 1980s.

At the same time, Brazilian strategists have defined its national security in socio-economic terms for a long time because of its territorial satisfaction (Selcher, 1985). Although Brazilian leaders were clearly concerned by Argentina's nuclear program, tensions between Brazil and Argentina were not significant enough to develop into a long-lasting nuclear rivalry. Instead, the external threat to Brazilian nuclear objectives was clearly perceived to be the

meddling of external powers, led by the US.  This perception stemmed from the opposition to the 1975 nuclear deal with West Germany.  In fact, a shared opposition to external powers and the desire to achieve autonomy helped push Brazil and Argentina to cooperate in nuclear matters, leading to a series of declarations and agreements between the two countries culminating in a formal safeguards agreement and the application of full-scope international safeguards in the early 1990s.  The next section outlines the ideational sources of Brazil's nuclear policy.

## 4.5.    Ideational sources of Brazilian role conceptions

In this section the ideational sources of Brazilian role conceptions will be explored.  The ideational inputs in the model consist of the leader(s)' perceptions of their state's national identity, culture and history.  Specifically, the model characterizes how key decision makers view the identity of their state in two key areas: the trajectory of their state's history and content of their state's cultural heritage.

In order to determine how these factors feed into a conception of role in the mind of Brazilian policymakers, a combination of a survey of the literature on Brazilian foreign policy and a discourse analysis of the speeches of Brazilian leaders was used.  The excerpts used in the discourse analysis were taken from the annual addresses made to the United Nations General Assembly (UNGA) between1973-1991.  This annual speech hold special significance for Brazilian foreign policy makers, as the right to be the first to address the UNGA was

specifically given to Brazil in 1947 and has been faithfully kept as tradition ever since (NPR, 2010).  The time period is also significant, spanning four decades of Brazilian governments, both military and democratically-elected.

The ideational sources of Brazilian foreign policy roles can be delineated into two categories: historical and lingo-cultural.  Brazilian policymakers draw on their nation's unique multicultural identity and legacy of negotiation in foreign policy frequently to make their case for Brazil's roles in the international arena.  Brazilian multicultural identity can be dissected into four distinct components: Brazil's specific links with African identities, its status as a Lusophone country (in contrast with its Spanish speaking neighbors), its Latin American character, and immigrant culture.

Brazil's long and painful historical connection with slavery is deeply connected with its identity as a colonized country.  Until the abolition of the slave trade, millions of West Africans were brought to work in Brazilian sugarcane and coffee plantations (Roett, 1984).  The slave trade in Brazil was gradually abolished much later than in other parts of the world, with a ban on the import of new slaves being effectively enforced in 1850, leading to a final emancipation of all slaves in 1888 (Levine, 1999, pp. 66–68).  The status of Afro-Brazilians has been a contentious issue in Brazilian society, with Afro-Brazilians largely absent from positions of power although consisting 44 percent of the population in 1991 (Skidmore, 1999, p. 208).  Still Afro-Brazilians have contributed greatly to the cultural vibrancy of Brazil, and Brazilian policymakers increasingly draw on their nation's African heritage when pursuing their policy goals in relation with African states.

Another legacy from Brazil's colonial past is its language, Portuguese. Since there are a limited number of Lusophone nations, Brazilian policymakers view their status as the largest Portuguese-speaking country as a matter of pride and influence within a relatively small community. Brazil's influence with the other Portuguese-speaking nations is not insignificant. Through the initiative of Brazilian President José Sarney, the heads of state of Angola, Brazil, Cape Verde, Guinea-Bissau, Mozambique, Portugal and Sao Tome and Principe convened in the Brazilian city of São Luís do Maranhão in November 1989 to discuss the idea of creating a community formed around their common language (CPLP, 2010). Since then, partnership between Lusophone nations has grown, and the Community of Portuguese Language Countries (CPLC/CPLP) was founded in 1996 by those six countries (CPLP, 2010). Upon gaining its independence in 2002, East Timor also joined the community. The objectives of the CPLC include fostering collaboration and friendship between the member states in the areas of education, health, science and technology, defense, agriculture, public administration, communications, justice, public safety, culture, sports and media (CPLP, 2010). Brazil uses its connection with Portuguese-speaking countries to break into their relatively untapped consumer markets. For example, under Geisel, Brazil quickly recognized Angola's Marxist government in 1975, hoping that state oil company Petrobras would win contracts to survey Angolan oil fields (Solingen, 1990, p. 133).

Brazil's Portuguese heritage sets it apart in a region filled with former Spanish colonies. Yet Brazilian leaders have increasingly drawn on its geographic and cultural location in Latin America when addressing regional

politics. This emphasis really began in earnest with president Figueiredo, the final leader of the military government. It was Figueiredo who took initiative to make official visits to Caracas, Asuncion and Buenos Aires and hosted the presidents of Peru, Mexico, and Argentina in the short span of 12 months in order to foster closer ties with Latin American nations (United Nations, 1980, p. 29). This emphasis was coupled with an increasing tendency for Brazil to "stick up for" its Latin American and Caribbean neighbors. Brazil's stance on the Falklands/Mavlinas War and the pariah status of Cuba, for example, can be read according to this narrative (Burges, 2009).

Finally, Brazil is also a nation of immigrants—the nation is frequently described as a 'spectrum' of the world's ethnicities and races. In fact, more than a few Brazilian statesmen and women trace their origins directly to immigrants, such as Juscelino Kubitschek (Czech), Ranieri Mazzilli (Italian), Emílio Médici (Italian), Ernesto Geisel (German), and Dilma Rousseff (Bulgarian). Brazilians of European descent have long held important positions in the Brazilian elite, a fact which was used by Rio Branco to the advantage of Brazil in the negotiation of its borders. By selecting diplomatic aides for their European features and breeding, Branco was able to make the case to foreign dignitaries that Brazil was distinct in "civilized" character (Levine, 1999, pp. 86–87). Initially prompted by government subsidies to incentivize the immigration of Europeans as cheap field labor, waves of Germans, Italians, Portuguese, Poles, and Japanese came to try their luck working on plantations or as *colonos* (colonists) (Levine, 1999, pp. 74–75). President Figueiredo, for example, expresses this perception of Brazil as

"having a clear Western identity" to place Brazil in the camp of the Western developed nations (United Nations, 1982, p. 29).

Historically, no one has had an impact in Brazilian foreign relations more than the Baron Rio Branco, a fact which has already been alluded to several times. His negotiation of Brazil's borders remains enshrined as one of the key foundations of Brazil's outlook on the world. Despite having 10 neighboring states with which to negotiate, Rio Branco was able to negotiate a successful outcome in every case. Brazilian experts attribute this to his skill as a diplomat and the autonomy he was allowed in negotiations. These have important repercussions for the institution Rio Branco founded, Itamaraty, Brazil's Ministry of External Relations. Itamaraty is given a large degree of autonomy in its negotiations and emphasizes continuation of dialogue as the key to a successful outcome. Lafer characterizes Rio Branco's heritage at Itamaraty as a "style of constructive moderation" which seeks to relieve tension and reduce diplomatic impasses to their lowest common denominators (Lafer, 2000, p. 215).

Rio Branco makes frequent appearances in Brazilian foreign policy discourse. References to the statesman's border negotiation legacy are frequently made by Brazilian policymakers as evidence for their nation's peacebuilding credentials. Brazilian UN Ambassador Celso Amorim states that apart from Brazil "no other nation has had uninterrupted relations of peace and cooperation for so long and with so many neighboring states", making his nation's experience in peacebuilding "noteworthy" (United Nations, 1993). The next year he again references Brazil's peacefully-defined borders and absence of armed conflict with its neighbors as part of its "identity," which dictates Brazil's

readiness to join in multilateral efforts to construct a new, more egalitarian and cooperative international agenda (United Nations, 1994). "Brazil takes pride in its diplomatic tradition," argues Minister of External Affairs Celso Lafer, a tradition which has resulted in 10 neighbors and almost 17,000 kilometers of peacefully negotiated borders (United Nations, 1992). It is the belief of Brazilian foreign policy makers that this tradition is ready to tackle the unequal distribution of power between the haves and have-nots in the international order.

*Ideational motivations in nuclear policy*

This historical and lingo-cultural legacy has implications for nuclear policymaking in that Brazilian policymakers have long seen their nation as aspiring to achieve great power status (Burges, 2013). Since the Vargas era, Brazilian leaders have equated developmental progress with their country's desire for greatness, a status which requisites a certain level of technological proficiency. For example, President Geisel stated in 1974 that an "economic, social, racial, and political democracy, in accord with the Brazilian people's character," was essential for "the creation of a modern, competitive, and dynamic economy" (Hovey, 1974). Guided by a sense of destiny and a view of their own history and culture as exceptional, Brazilian leaders have pursued large development projects like the Trans-Amazonian Highway (Landry, 1974, p. 24), a robust military equipment export industry (Pinheiro, 2013), and of course the massive nuclear cooperation deal of 1975.

The military government's propaganda from this period showed montages of progress—modern factories, massive hydroelectric projects, children being educated in government schools—followed by the slogan of the regime: "This is a country that is going forward" (Kandell, 1976). The nuclear program was no exception—the Brazilian desire for autonomy and the definition of national security in economic terms led to the acquisition of nuclear technology being perceived in those terms. Specifically, the concept of "technological deterrence", or the belief that the acquisition of an autonomous domestic technical capability would be enough to provide security for Brazil against external foes was clearly present in the minds of Brazilian leaders (Barletta, 1997, p. 16).

This is illustrated in the statement on nuclear policy made by Pires Gonçalves, Jose Sarney's Minister of the Army in the lead-up to the 1988 constitutional reform. Gonçalves stated that Brazil's nuclear program was necessary in order to become "a country with high technological development, and therefore, strong and respected. This is deterrence by greatness" (Barletta, 1997, p. 16). By tapping into this sense of destiny, Brazilian policymakers sought to justify the nuclear program to rising public opposition, even as there remained considerable ambiguity as to the goals of the project(s). During the transition to democracy, asserting civilian oversight while emphasizing its contribution to Brazilian autonomy saved the nuclear program from the general atmosphere of anti-military sentiment in Brazil in the 1980s and 1990s (Barletta, 1997).

*Conclusion*

In conclusion, the ideational sources of Brazilian role conceptions in the nuclear issue area can be summarized as a combination of historical and lingo-cultural factors which contribute to Brazilian leaders' sense of their nation's unique character in the world. These include Brazil's multicultural and immigrant heritage, special connection with Africa, and its status as the world's largest Portuguese-speaking nation. Brazil's history of peaceful coexistence with neighbors and the legacy of Rio Branco specifically are often cited by its politicians as signs of Brazil's national character on the international stage.

All these factors contribute to a sense of national destiny and emphasis on technological progress in the case of Brazil. Policymakers equate Brazil's ability to command respect in the world with its level of technological sophistication and ability to conduct its affairs autonomously from other countries. Brazil's national motto, *Ordem e Progresso* (Order and Progress), is prominently displayed on the national flag and this sense of destiny and development certainly can be seen in the attitude of policymakers towards the nuclear program. The next section of this chapter proposes the national role conceptions of Brazil during the period of 1975-1991 and explores their impact on the policies pursued by the Brazilian government during that period.

## 4.6. National Role Conceptions in Brazilian Foreign Policy

In this final section, I propose national role conceptions for Brazilian foreign policy relevant to the area of nuclear weaponry. First, the national role

conceptions for Brazil as assigned by Holsti (1970) and Chafetz et al. (1996) will

be discussed in detail, followed by my own modified role conceptions.  Then the

model will be traced throughout the Brazilian case and the hypothesized policy

outcomes will be discussed.


*Role Scholarship on Brazil*

In his 1970 paper, Holsti finds evidence for three roles for Brazil: *Internal*

*Developer, Regional-Subsystem Collaborator, and Independent* (Holsti, 1970, p.

275).  Holsti defines the *Internal Developer* as playing less of a role in the

international and more demonstrating that the main concern of the government

should be directed towards addressing its own domestic development issues.  He

holds up Brazil as an example, using a 1967 speech by President Costa e Silva

where the Brazilian leader stated his foreign policy orientation as being focused

on opening markets for Brazilian goods and encouraging investment and

technology transfer (Holsti, 1970, p. 270).  Holsti characterizes the *Internal*

*Developer* as being focused on its socio-economic needs and perceiving threats

through unwelcome foreign involvement in its chosen development strategy.  In

addition to Brazil, Holsti lists Finland, Indonesia, and Pakistan as displaying

developer tendencies (Holsti, 1970, p. 297).

The *Regional-Subsystem Collaborator* role conception denotes a

widespread commitment to fostering cooperation between states in the context

of a wider community (Holsti, 1970, p. 265).  He cites economic needs, a sense of

"belonging" to its region, common political-ideological traditions, and geographic

location as sources of the *Regional-Subsystem Collaborator* role conception, and lists Belgium, Ethiopia, Guyana, Japan, Switzerland, and Sweden as examples (Holsti, 1970, p. 298).

The last and most broad role that Holsti assigns Brazil is that of *Independent.* Independent states emphasize the preeminence of their own interests in foreign policy making, rather than doing the bidding of other states. In pursuing this "policy self-determination", independent states generally are identifying with the non-aligned movement in some way (Holsti, 1970, p. 268). He lists the sources of this role as anti-bloc or anti-colonial sentiments, economic needs, and threat perception and holds up most of the Non-Aligned Movement as examples (Holsti, 1970, p. 297).

As has been stated in the previous chapter, the role-based typology employed by Chafetz et al. (1996) takes a modified set of Holsti's roles and categorizes them as leading towards, away from, or having no effect on, nuclear proliferation. They identified the *Regional Leader, Global System Leader, Regional Protector,* and A*nti-Imperialist* role conceptions as tending towards nuclear status, with *Independent* having no correlation with proliferation (Chafetz et al., 1996, p. 734). The main factor behind their identification of proliferation-prone roles was the perception of some states of nuclear weapons as a symbol of global leadership as modeled by the "legal" nuclear weapons states (Chafetz et al., 1996, p. 733).

Chafetz et al. classify Brazil as a *Regional Leader* and *Anti-Imperialist* (Chafetz et al., 1996, p. 733). They describe the function of the *Regional Leader* as "providing leadership in a delimited geographic or functional area" and list

India, Iran, and Iraq as examples of states displaying that conception (Chafetz et al., 1996, p. 734). The *Anti-Imperialist* is described as acting as an "agent of struggle against imperialist threats" and Iran, North Korea, Iraq, India, and Libya are listed as examples (Chafetz et al., 1996, p. 734). The national role conceptions attributed to Brazil by Holsti and Chafetz et al. are listed in Table 5 below:

**Table 5: Summary of Brazilian NRCs from (Holsti, 1970) and (Chafetz et al., 1996)**

| Role Type | Role Description | Source |
|---|---|---|
| Regional Leader | Provide leadership in delimited geographic or functional area | (Chafetz et al., 1996) |
| Anti-Imperialist | Act as agent of struggle against imperialist threats | (Chafetz et al., 1996) |
| Internal Developer | focused on socio-economic needs; perceiving threats through foreign involvement | (Holsti, 1970) |
| Regional-Subsystem Collaborator | committed to fostering cooperation between states in a wider community | (Holsti, 1970) |
| Independent | "self-determined foreign policy"; preeminence of own interests in foreign policy making | (Holsti, 1970) |

I argue that these conceptions, while valuable, are not specific enough to yield insight into why Brazil pursued the nuclear trajectory that it did. Specifically, the role concepts cited by (Holsti, 1970) and (Chafetz, et al., 1996) need more detail in the area of defining why exactly Brazil pursued a seemingly standoffish nuclear stance while lacking urgency in its quest to acquire the technology necessary to acquire a nuclear explosive. In the next section, I propose a set of Brazilian national role conceptions for nuclear policy during the period of 1975-1991 that seeks to address these concerns.

*Brazilian National Role Conceptions*

In this section I present three Brazilian NRCs for nuclear policymaking: voice of the global South, regional leader, and internal developer.

Voice of the Global South

Echoing Holsti's description of the role of a sub-system collaborator, Brazilian policymakers seek to portray their country as the v*oice of the global South*. Burges describes this rhetorical phenomenon as Brazil "[entrenching its] position of global importance as the 'voice' of the South" (Burges, 2012, p. 353). Speaking to an international audience, the discourse Brazilian policymakers use attempts to link the development challenges that Brazil is facing with the wider condition of other developing states.

Brazilian policymakers use their nation's multicultural population, its African and Lusophone roots, and identity as a formerly colonized country as a body of ideational rhetoric which supports this role conception. Taken together, these statements communicate a powerful message of credibility for the northern 'core' nations—"if you want to improve relations with the Global South, you need to talk to Brazil."

This is seen in the relationship between North-South and South-South cooperation, frequent themes in Brazilian leaders' foreign policy discourse. Minister of External Relations Antonio Francisco Azeredo da Silveira expressed in 1978 how Brazil was committed to fostering North-South dialogue aimed at assisting developing countries:

Brazil will always continue to be pledged to the promotion and improvement of international co-operation....It is in the light of these facts that we attribute special importance to the development of machinery aimed at filling the gaps in North-South co-operation. With this aim in mind Brazil has put forward and supported efforts to promote, enlarge and intensify horizontal and equitable co-operation among the countries which strive for development (United Nations, 1978, p. 43).

As the *voice of the global South*, Brazil proclaims that its inclusion in high-level multilateral negotiations is a way of including "the ambitions and interests of the over 150 countries who are not present at the meetings" (Patriota, 2011, as cited in Burges, 2012, pg. 353). Drawing on its multicultural identity, specific links with Africa, and history as a developing nation with a history of poverty, Brazil seeks to sell this identity to both other developing nations and to the core nations from which it seeks acceptance.

Brazil's execution of this role frequently manifests itself in calls for changes to the forces shaping the evolution of globalization and development policy. Minister of External Relations Roberto Costa de Abreu Sodre describes Brazil's position on the need for a restructuring of the global economic system:

The magnitude of the challenges facing the developing nations and the total lack of progress in restructuring the international economic order are the two sides of the coin of the same deeply disturbing panorama. I am from a developing country that will never surrender this right [to development] and is not only

convinced of the justice and legitimacy of its claims but also of the viability of its objectives in the economic and social fields (United Nations, 1987, p. 10).

In acting on their conception of Brazil as *Voice of the Global South,* Brazilian policymakers draw on the discourses of Brazil's multicultural identity, being both Western and non-Western—African, European, and Latin American as they attempt to position their country as a bridge between East and West, between developing and developed worlds.  Minister of External Affairs Ramiro Saraiva Guerreiro calls on this unique identity as he calls for a greater role for Brazil in multilateral initiatives at the global level:

Brazil is both a Western and a third-world country, with a foreign policy that reflects internationally the invaluable wealth of our historical experience.  As inheritors of different cultures, we have a natural and deep-rooted respect for diversity—an indispensable condition for harmony (United Nations, 1983, p. 30).

The Voice of the Global South role manifested itself in Brazilian policymakers' emphasis of their country's respect for the institutions central to global governance, while also at the same time creating additional fora for multilateral exchange outside of the usual channels.  President Figueiredo communicates this balance while expressing Brazil's position on development policy in this speech excerpt from 1982:

The developing countries, which for so long have striven for the principle of permanent sovereignty over their national resources,

today face the new challenge of maintaining sovereignty over their own economic space. This does not mean, however, that the developing countries should oppose or show lack of interest in greater interaction at the international level, with respect to the flows of capital and technology...It is undeniable that the vast majority of developing countries, beginning with those who have a clear Western identity, such as Brazil...aim at improving and diversifying their links with the developed West, which is a valuable source of the factors of production necessary for their development (United Nations, 1982, p. 29).

At the same time, Brazilian policymakers recognize that their state's role as interlocutor must be palatable to the developing world. Brazilian leaders frequently express their nation's independence and autonomy in foreign policy with frequent anti-imperialist overtones. President Sarney rejects the prospect of Brazilian leadership being perceived as hegemonic or a vehicle of the Great Powers in this speech from 1985:

I am here to say that Brazil no longer wishes its voice to be timid. Brazil wants to be heard - without aspirations to hegemony, but with a clearly determined presence. We shall not preach to the world what we do not say within our own borders. We are at peace with ourselves. Consistency has become our strength. Our domestic discourse matches our international stance. We wish, as of now, to give new life, with renewed emphasis, to our presence in the debate of nations, by espousing an independent, dynamic

foreign policy....[we] shall not be held captive by great Powers nor enslaved by minor conflicts (United Nations, 1985, p. 6)

Similarly, Brazilian leaders frequently affirm their nation's commitment to the principle of non-interference among states:

Zealous for our sovereignty and independence, we have reaffirmed whenever necessary by word and deed our unshakeable adherence to the principles of non-interference in the internal affairs of States, mutual respect and self-determination (United Nations, 1978, p. 42).

A final feature of this role conception is that in bridging the gap between North and South during the Cold War, Brazilian policymakers frequently used anti-bloc language, similar to that of the members of the Non Aligned Movement. In these quotations from speeches made by Ministers of External Affairs Silveira (1978) and Guerreiro (1980), a willingness to break out of the bloc system's gridlock in international affairs can be seen:

We have sought, as far as possible, to break obsolete patterns of international relations and to replace them with more equitable and more balanced arrangements: This has enabled us to open up new diplomatic horizons. And we have thus revealed the true international profile of Brazil, ever sensitive to changes in the world reality (United Nations, 1978, p. 42).

We are ready to co-operate in the establishment of a more just and effective international order. My country, within the limits of its

resources, has given repeated demonstrations to that effect. We are committed to fostering a climate of trust among nations; we are always alert to the possibilities of co-operation on an egalitarian basis; we repudiate the formation of Power blocs; we seek to give a forward thrust to existing opportunities for development (United Nations, 1980, p. 28).

Regional Leader

The next Brazilian role conception from the period of analysis is that of r*egional leader*. Brazilian policymakers express how Brazil consistently seeks to unify Latin America behind its leadership. This is done by holding both Brazil and its region up as an example of peaceful coexistence, seeking prestige as the leader of South America and international recognition of that role. Guerreiro proclaims Brazil and Latin America as examples in this excerpt from a 1980 speech:

Brazil lives in peace with its neighbors in Latin America and with all nations which observe the principles of sound international behavior. Relations between Brazil and friendly countries of Latin America are clear testimony to the success achieved when the path of mutual respect and non-interference is taken with determination and when the search for harmonious and profitable co-operation prevails over controversies or topical divergencies (United Nations, 1980, p. 28).

After President Sarney's announcement of Brazil's successful enrichment of uranium in 1987, Roberto Costa de Abreu Sodre, his Minister for External Affairs emphasized how the nuclear issue was becoming a force for closer ties in the region:

> I wish to reiterate my country's commitment to use nuclear energy exclusively for peaceful purposes [as well as to] the enhancement of increased co-operation and mutual trust in Latin America. The initiatives of collaboration which are being implemented between Brazil and Argentina, in particular, will assure the mastering of the nuclear cycle without the development of atomic weapons in our continent. This common purpose was highlighted in the exchange of correspondence between presidents Jose Sarney and Raul Alfonsin when the announcement of Brazil's mastery of the technology for enriching uranium was made public (United Nations, 1987, pp. 16–17).

Expressions of Brazilian regional leadership are often combined with calls for international recognition for that role with additional responsibilities in the UN structure. Brazilian leaders frequently call for reform to the structure of the Security Council and for a permanent seat for a Latin American representative (presumably Brazil). In 1989, as the old Cold War order was dissolving and Brazil assumed non-permanent membership on the Security Council, President Sarney called for Brazil to be included in the decision-making body as a reflection of the changes underway in the world system:

The time has come for a re-evaluation designed to make it possible
to reflect the multi-polarity of today's world in the Security Council
so that it may better fulfill its responsibilities. We could consider
an additional category of permanent members that would not have
the veto privilege (United Nations, 1989).

In conceiving of itself as the leader of South and Latin America, Brazil has sought recognition of that role both in the region and internationally. Still, Brazil has not seen a confirmation of this role conception from these audiences to the degree that its leaders have desired.

Internal Developer

Finally, as observed by Holsti (1970), Brazilian leaders frequently express a conception of their state as an *Internal Developer.* This role conception is focused on the country's socio-economic development needs, and threats are perceived as unwanted foreign involvement in domestic economic affairs. During the period of analysis, Brazil was wracked by severe economic inequality, combined with inflation and crippling foreign debt. Thus the theme of development makes frequent appearances in Brazilian leaders' foreign policy addresses. For example, Minister of External Affairs Guerreiro defines Brazilian foreign policy in developmental terms in 1984: "My country reaffirms that its foreign policy adheres to the high aim of seeking solutions consistent with universal causes of peace and development" (United Nations, 1984, p. 30). Three years later, his successor de Abreu Sodre stated emphatically, "development is not an option for us; it is an imperative" (United Nations, 1987, p. 9).

This role is sometimes manifests as anti-protectionism on the part of industrialized economies. Brazilian leaders were quick to point out the hypocrisy of core countries' calls for economic liberalism at home while protecting their own industry from foreign competition through barriers to trade. External Relations Minister Guerreiro calls for debt reform for the developing world in this speech from 1983:

> International trade...has entered a period of stagnation and recession, asphyxiated by growing protectionist barriers...and by the burden of foreign debt-which together restrict to an unbearable extent the import capacity of the debtor countries, thus making it impossible for them to sustain the levels of economic activity needed to meet the requirements of their peoples and to generate the very resources necessary to meet their commitments (United Nations, 1983, p. 32).

Brazil's leaders viewed the acquisition of technology with this developmentalist mindset, including the acquisition of nuclear technology. They frame the nuclear issue within the context of the right to development and call for a lifting of restrictions on the use of nuclear technology for peaceful purposes. External Relations Minister Silveira links the nuclear issue to the development imperative:

> Brazil is a peaceful county. The dominant concern of the Brazilian nation is its integrated, harmonious economic and social development....We believe that the true meaning of non-proliferation is to ban the diffusion of nuclear weapons, not the

dissemination of nuclear technology. Given adequate safeguards, access to the technology for the peaceful uses of nuclear energy should not be subjected to discriminatory restrictions (United Nations, 1977, p. 56).

The efforts undertaken by the developing countries to create a new international economic order will produce results only if they are accompanied by effective action to offset the distortions that exist in the policy of transfer of scientific and technological knowledge. As President Sarney stated on 4 September, when he announced Brazil's mastery of the technology for enriching uranium, Brazil cannot forgo broad and unrestricted access to the entire range of available scientific knowledge and its practical applications (United Nations, 1987, pp. 16–17).

Overall, the *internal developer* role conception featured prominently in the foreign policy discourse of Brazilian policymakers over the time period. As has been stated earlier, Brazilian policymakers tended to perceive threats to their nation's security through a developmentalist mindset (Burges, 2009; Soares de Lima & Hirst, 2006; Solingen, 1990), so it is not surprising that this economic focus would be reflected in the speeches of Brazilian leaders. In the next section, the model will be used to trace the formation of Brazilian nuclear policy, summarizing the inputs and role conceptions and discuss how these in turn affected actual Brazilian foreign policy behavior.

*A role-based model of Brazilian nuclear policy*

This section sketches out the "big picture" of the national role conception process in the Brazilian case and discusses its implications for the actual policy pursued by Brazil during the period. The hypothesized role-based mechanism is discussed and the hypothesis for Brazil is evaluated.

The inputs section of the model considered two sources policymakers draw from when forming national role conceptions—these were categorized as ideational and material. Material inputs were defined as decisionmakers' perceptions of their state's nuclear technical capability and security environment, whereas ideational inputs were defined as decisionmakers' perceptions of their state's national identity and cultural heritage.

In the Brazilian case, the technical capability evolved slowly, with little progress being made until the landmark accord with West Germany in 1975. To this day, Brazil has yet to acquire any significant reprocessing capability and its enrichment and conversion facilities have struggled with technical difficulties even on the pilot level (Kassenova, 2014). Still, the military was able to successfully acquire ultracentrifuge enrichment technology and achieve a degree of technological autonomy.

From the perspective of the security environment, rival Argentina was having much more success technically during the period of analysis, with an unsafeguarded enrichment plant and a spent fuel reprocessing facility under construction. Developments across the border with Argentina's military regime clearly worried Brazilian policymakers and affected their thinking on the nuclear issue (Barletta, 1997).

At the same time, Brazilian strategists have primarily defined their country's national security in socio-economic terms for a long time because of its territorial satisfaction (Selcher, 1985). Although Brazilian leaders were clearly concerned by Argentina's nuclear program, tensions between Brazil and Argentina were not significant enough to develop into a long-lasting nuclear rivalry. Instead, the external threat to Brazilian nuclear objectives was clearly perceived to be the meddling of external powers, led by the US. This perception stemmed from the opposition to the 1975 nuclear deal with West Germany and the general frustration over the dire economic straits Brazil found itself in during the period (Skidmore, 1988).

From the ideational perspective, inputs can be summarized as a combination of historical and lingo-cultural factors which contribute to Brazilian leaders' sense of their nation's unique character in the world. These include Brazil's multicultural and immigrant heritage, special connection with Africa, and its status as the world's largest Portuguese-speaking nation. Brazil's history of peaceful coexistence with neighbors and the legacy of Rio Branco specifically are often cited by its politicians as signs of Brazil's national character on the international stage.

All these factors contribute to a sense of national destiny and emphasis on technological progress in the case of Brazil. Policymakers equate Brazil's ability to command respect in the world with its level of technological sophistication and ability to conduct its affairs autonomously from other countries. Thus I argue that in the mind of policymakers, the acquisition of nuclear technology and

the option to pursue a peaceful nuclear explosive was seen as an important aspect of reflecting this image to the world.

Brazilian policymakers draw on these inputs in forming their conceptions about what role their nation should play in the international arena. These roles are summarized in Table 6 below:

**Table 6: Brazilian NRCs for nuclear policy**

| Role Type | Role Description |
| --- | --- |
| Voice of the Global South | Serve as go-between the industrialized core and developing periphery in global fora |
| Regional Leader | Provide leadership in delimited geographic or functional area |
| Internal Developer | focused on socio-economic needs; perceiving threats through foreign involvement |

These role conceptions have obvious implications for the course set by Brazilian policymakers when it comes to nuclear decisionmaking. The *Voice of the Global South* conception contains anti-bloc and anti-imperialist overtones, an observation also made by Chafetz et al. (1996) in their own classification of Brazil (pre-1990) as an Anti-Imperialist state. This often-confrontational attitude towards great powers in the international system could be consistent with a desire for nuclear weaponry.

In expressing their conception of Brazil as a *regional leader* in South America, Brazilian policymakers hold their region up as an example of peace and coexistence in the world and attribute this to Brazilian leadership. As the rapprochement with Argentina progressed, the nuclear issue became connected with this discourse of responsibility and regional integration. Brazil sought

regional and international recognition for its role as the leader of South America, but has yet to receive it, despite fostering many regional initiatives aimed at deepening ties throughout the continent. During the period of analysis, the nuclear issue switched from being linked to the desire to dominate the region through superior capabilities to a force for closer ties between Brazil and its main regional rival. With the transition to democracy in the 1980s, the continuation of a nuclear program which intimidated the region was no longer consistent with Brazilian policymakers' perceptions of what Brazilian regional leadership would look like.
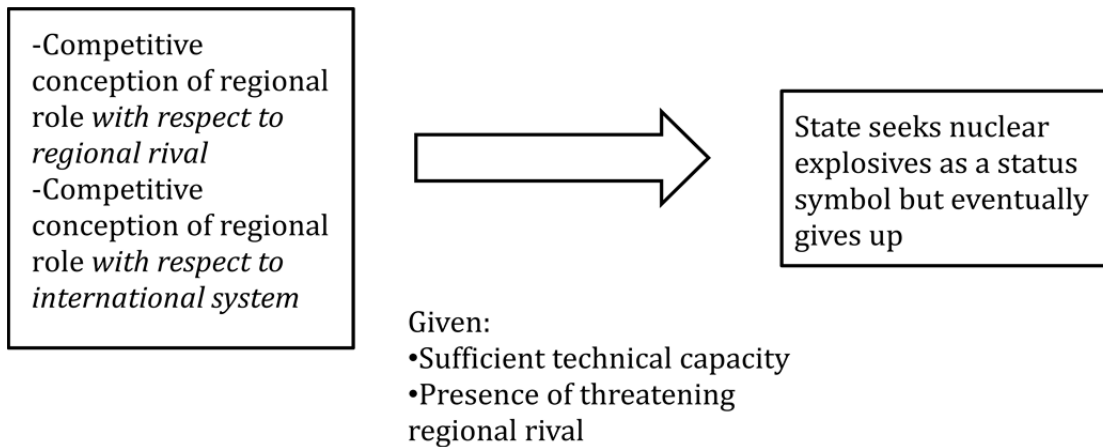
Finally, following the trend of Brazilian foreign policy being dominated by economic and developmental policy, the role conception of *internal developer* played an important part in the policy discourse surrounding the nuclear program during the analysis period. Brazilian policymakers emphasized their nation's autonomy and right to development, placing their nuclear ambitions within that context. Threats to the nuclear program were seen as threats to Brazil's security, due to the connection of the development issue and national security in the minds of Brazil's military leaders. Opposition to the 1975 deal with West Germany pushed military leaders to start the secret parallel program and research the development of a nuclear explosive. With the transition to democratic rule, this discourse was adopted to justify the military's parallel program, as Sarney portrayed the navy's enrichment of uranium as an achievement for domestic development.

*Evaluation of the Model*

Overall, the model illuminates several key features of the Brazilian case. For Brazilian policymakers over the period of analysis, the imperative and right to development was closely linked to foreign policy goals and the concept of national security. More specifically, the acquisition of technology and pursuit of development goals was closely tied to national pride and a sense of Brazilian ascendency on the international stage. This can be seen in the way leaders framed the nuclear program in terms of achieving national autonomy. From the perspective of the security environment as defined by Breuning (2011), Brazilian policymakers understood that their state had much to lose by embarking on a serious push to acquire nuclear capability. This stood in contrast to the modest and ambiguous gains in prestige nuclear weaponry would bring. Additionally, the threat from Argentina was not considered clear enough to necessitate such a bold move.

In this thesis, I hypothesized that Brazil's lack of a consistently hostile regional rival in Argentina and a competitive, not oppositional, attitude towards the international system informs Brazil's understanding of its role in the region, and therefore Brazil would seek nuclear explosives as a status symbol but eventually give up. This hypothesis is displayed visually in Figure 7 below:

**Figure 7: Relationship between competitive regional role conception and nuclear weapons acquisition attempts**

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┌─────────────────────────┐                              ┌──────────────────────────┐
│ -Competitive            │                              │ State seeks nuclear      │
│ conception of regional  │                              │ explosives as a status   │
│ role with respect to    │         ━━━━━━━▶             │ symbol but eventually    │
│ regional rival          │                              │ gives up                 │
│ -Competitive            │                              │                          │
│ conception of regional  │                              └──────────────────────────┘
│ role with respect to    │
│ international system     │      Given:
└─────────────────────────┘      •Sufficient technical capacity
                                 •Presence of threatening
                                 regional rival
```

In their conceptions of their country's role in the world, Brazilian policymakers approach both their region and the international system with a competitive, rather than oppositional attitude. This can be seen in the willingness to participate in international fora and IOs as the Voice of the Global South, and diffuse bilateral tension and seek regional integration rather than hegemony as a Regional Leader.

On the other hand, consistent with their conception of Brazil as an Internal Developer, Brazilian policymakers put a strong emphasis on acquiring nuclear technology and the full fuel cycle with national autonomy as the goal. When the 1975 deal was perceived as incompatible with the goal of an independent nuclear policy, the military's parallel program was started to achieve autonomy by covert means while leaving the option open for a nuclear explosive (Barletta, 1997). Still, the pressures towards the acquisition of such an explosive were not strong enough for Brazil's policymakers to tolerate a policy position inconsistent with their national role conceptions. In the end, although elements of the military certainly desired to pursue a nuclear explosive (as

evidenced in particular by the test shafts drilled by the Air Force), this policy outcome was deemed inconsistent with Brazilian policymaker's conceptions of their nation as a regional unifier and South American standard-bearer. This led to the *rapprochement* process with Argentina and eventually to Brazil's accession to the NPT as a non-nuclear weapons state.

# CHAPTER 5

## INDIA: "WE HAVE A BIG BOMB NOW"

### 5.1. Introduction

In this chapter, the case of India's nuclear weapons acquisition will be explored in detail. First the general post-independence foreign policy positions of India will be reviewed to set the context for the role input analysis. Next, the material and ideational inputs of the BJP's conception of India's national role will be discussed in turn. Finally, the policy outcomes and their linkages to this role formation process will be explained.

*Case Study Structure:*

As has already been discussed at length in the previous section, the case study structure is founded on the Breuning model of national role formation (Breuning, 2011). This model has been adapted to the policy area of nuclear proliferation, and reproduced again below in Figure 8:
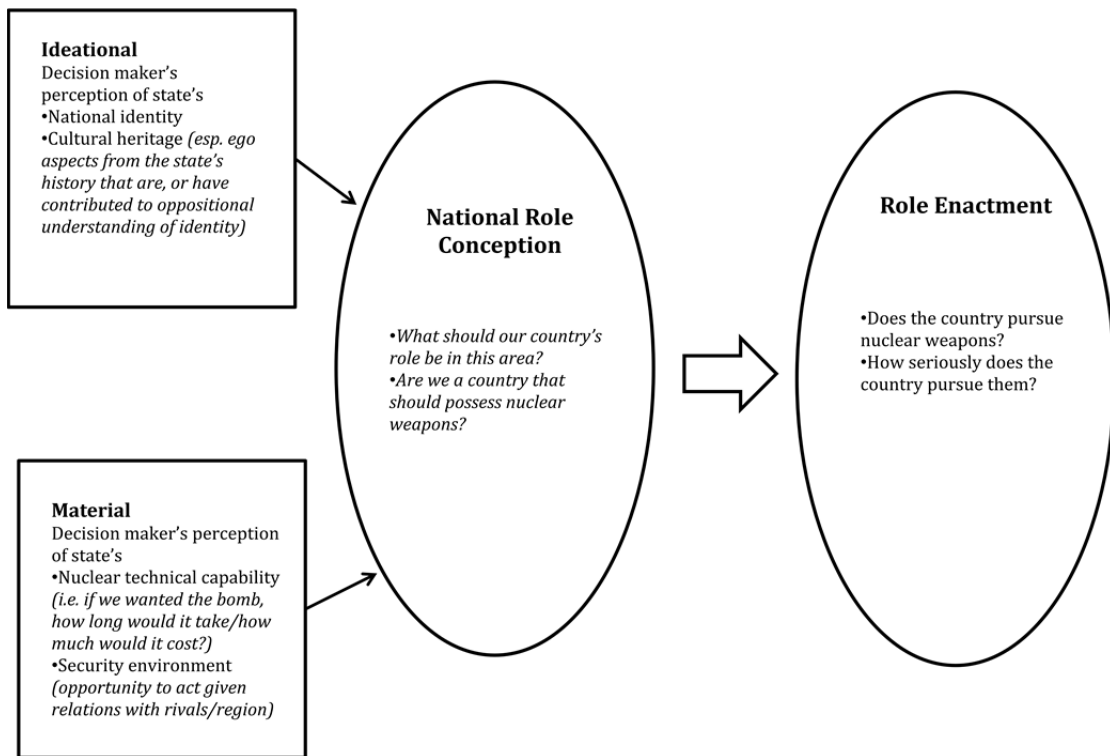
**Figure 8: Role-based framework for nuclear decisionmaking process showing ideational and material inputs, based on (Breuning, 2011)**

After a general review of Indian history and foreign policy, the material and ideational inputs of Indian national role conceptions are explored in detail. Then the national role conceptions of Indian foreign policy are detailed with reference to these material and ideational inputs. Finally, the role enactment of Indian policymakers is evaluated according to the hypotheses presented in the previous chapter.

*Timeframe of Analysis*

Before embarking on the case study, the timeframe of analysis must be established. The aim of this case analysis is to capture key moments in Indian nuclear decision making, and as such, the existing scholarship has been consulted to determine an appropriate analysis timeframe.

In his book on the Indian nuclear program, Karsten Frey focuses on the period from 1986-2005, starting his analysis with the lead-up to the Brasstacks crisis of 1986-87 and continuing until the landmark US-India nuclear deal of 2005 (2006). Nizamani centers his analysis on the discourse of Indian leaders leading up to the Smiling Buddha test in 1974, then fast-forwards to the debate in the same community surrounding the 1998 tests (2000). George Perkovich's comprehensive overview of the Indian nuclear program begins in 1948 and spans all the way until 1998. He breaks the trajectory of Indian nuclear ambitions into four rough segments: 1948-1963, 1963-1974, 1974-1987, and 1987-1998. SarDesai and Thomas' edited volume, on the other hand, centers its analysis exclusively on the 1998 detonation (2002).

This analysis focuses its attention on two decisions—or series of decisions—which led first to India detonating a "peaceful nuclear explosive" in 1974, then secondly to the test shots at Pokhran in 1998. Perkovich (1999), Frey (2006), and others point to 1964 as a key year where Indian leaders began a series of shifts in outlook which resulted in the "Smiling Buddha" test of 1974. The decade of 1964-1974, therefore, is the first focus for the period of analysis of this study. The second period of analysis spans the decade between the beginning of the Brasstacks crisis (1986) and the Pokhran tests in 1998. Before focusing on these periods, however, the following section establishes the historical and foreign policy context for the analysis to follow.

## 5.2.    General Foreign Policy Outlook

Indian basic foreign policy has been flavored with a sense of destiny even before independence, yet India's efforts to cement its role in the world have been chronically hampered by slow growth, conflict in the region, paralyzing levels of poverty, political uncertainty, among other factors.  In general, Indian foreign policy can be characterized by a seeking of autonomy, independence, and self-reliance in world affairs (Cohen, 2001; Hardgrave & Kochanek, 2008; Luce, 2007; SarDesai, 2008).  India owes this stance to the overwhelming guidance of Jawaharlal Nehru, Gandhi's follower and contemporary and simultaneously first prime minister and foreign minister of India after independence.

*A Brief History of Modern India*

The Indian Subcontinent is home to one of the oldest civilizations on earth.  Present-day cultural elements of the peoples of the Subcontinent can be traced back for thousands of years.  India is the world's second largest country in terms of population, with 1.2 billion inhabitants, making it the world's largest democracy (CIA, 2014a).  India's economy is the world's fourth largest economy by GDP ranking, and has been tagged as a member of the BRICS group of rising powers (Tett, 2010).

A British colony from the late 1700s until 1947, Indian history has been affected greatly by its colonial experience.  Considered the "crown jewel" of the British Empire, the colony of India provided the British with a steady stream of income for over 200 years.  British rule left an indelible mark on Indian institutions and modernity, as well as deep scars in the collective Indian

consciousness.  In the 20th Century, opposition to British rule gained momentum under the leadership of Mahatma Gandhi, famous for his non-violent resistance movement against the British colonialist forces.  Gandhi's Indian National Congress organized demonstrations and mobilized popular support for independence through boycotts of British goods and non-violent protests (SarDesai, 2008).

The elation of independence was marred by brutal violence between Hindus and Muslims during the partition of India into the sovereign states of India and Pakistan in 1947.  Led by Gandhi's close follower and Congress political strategist Jawaharlal Nehru, India charted a course of non-alignment in world affairs while seeking development at home for its poverty-stricken population.  Today India is a study in contrasts; the country is home to the world's largest impoverished population, yet the proud possessor of nuclear weapons and an advanced space program.  Its scientists conduct research on the cutting edge of physics, chemistry, biotechnology, and material science, comprising the third-largest scientific community in the world (SarDesai, 2008).  Based on the sheer size of its population and economy, India cannot be ignored on the world stage.  Still, historically India has experienced difficulty in translating its size into leverage in its foreign policy.  The next section introduces Indian foreign policy and identifies trends in India's external relations since independence.

*Indian Foreign Policy*

In general, India seeks independence in the international arena.  While this statement alone does not distinguish India from most states in the world,

during the Cold War this desire for autonomy defined India's approach to its relations with other nations. By affirming its adherence to non-alignment, India walked the fine line between the two Cold War superpowers. On the one hand, India's mutual friendship with the USSR provided needed development aid and military hardware, while at the same time it sought to maintain cordial relations with the US and its allies. In fact, the history of Indian foreign policy is so intimately linked with that of the non-aligned movement (NAM) that one cannot be understood without the other. In the following sections, India's relations with the NAM, region, Pakistan, USSR, Russia, United States, and China will be discussed in greater detail.

*India and the Non-Aligned Movement (NAM)*

The NAM was the brainchild of the leaders of India (Jawaharlal Nehru), Indonesia (Sukarno), Egypt (Gamal Abdel Nasser), Ghana (Kwame Nkrumah), and Yugoslavia (Josip Broz Tito), who convened in Belgrade in 1961 to call for a middle ground between the two Cold War superpowers and their allies (Abraham, 2008). In the polarized world environment of that time, these leaders saw their countries' futures tied to their ability to remain independent rather than affiliated with either of the alliance blocs forming around the US or USSR. The states of the NAM, largely considered developing nations, agreed to support each other's right to sovereignty, and non-interventionism, and fight racialism, colonization, and other forms of hegemony and great power politics (Government of Zaire, 2001). Interest in such an association first formed over concerns in developing countries that they might become caught in the cross-fire of a war between the Cold War superpowers. NAM discourse frequently features

condemnation of Western imperialism and colonialism, along with dialogue about solving common development problems facing participant states (Government of Zaire, 2001). With the dissolution of the USSR and the subsequent shifts in the international arena, the non-aligned movement, already a loose association, lost most of the common threads which had held its diverse members together (Holloway & Tomlinson, 1995). Still, India continues to maintain a "global balance" in its relations with the major powers (Hardgrave & Kochanek, 2008, p. 475). This has been described by some as an Indian 'aloofness' in world affairs, even as Indian economic liberalization and participation in the world economy has massively increased in the past three decades.

Indian foreign policy, especially in the Nehruvian era, has therefore been characterized as idealistic by many scholars. Yet Indian leadership in the NAM is both idealistic and realistic—idealistic because of its consistency with the values set by Nehru; realistic because association with the NAM was a pragmatic way for India to maintain its autonomy in the caustic Cold War environment. As a founder and leader of the NAM, India sought leadership among the newly-independent states of Asia and Africa, making a consistent policy of supporting national liberation movements against the imperialist powers at the UN. Amongst these former colonies, India paid special attention to courting friendship with Islamic nations to prevent Pakistan from building consensus among fellow Muslim states for the resolution of the Kashmir dispute in its favor.

Until 1962, Indian foreign policy had been based on exercising rhetorical influence without the use of military power, but the border war defeat to China

exposed Indian military weakness. Though the NAM provided flexibility and normative values to Indian foreign policy at a global level, these ties did not trickle down to the regional level. India's quick and humbling defeat in the 1962 Sino-Indian war evoked very little condemnation or expressions of support from its non-aligned friends. In the aftermath of this conflict, India began to view its place in the region differently and embarked on a large effort to modernize its armed forces (Ganguly, 2010). Additionally, the lack of coercive power hampered India's ability to back up rhetoric with actual policy to hold the non-aligned movement together in the face of increasing division among its members. Overall, the NAM did not provide the seat for India to execute the global leadership its policymakers desired. Regional leadership, not anti-bloc leadership, gradually became emphasized instead.

*Regional Security Outlook*

India is often characterized as having a regional outlook on its security, viewing the Indian Subcontinent as its primary area of security concern (Cohen, 2001; Hardgrave & Kochanek, 2008). Indian activity in the region is often interpreted by its neighbors as hegemonic and self-serving, while India itself seeks international recognition of its status as the main power in the region, which it views as its sphere of influence (Hardgrave & Kochanek, 2008, p. 476). This extends beyond the region, as India desires confirmation of its role in the world proportional to its population and status as the world's largest democracy. On the basis of its population and "continental country" status, India seeks admission to the UNSC as a permanent member (SarDesai, 2008).

Indian leaders express how they consider their state as China's equal on the world stage, and resent US equal treatment for Pakistan in negotiations over Kashmir (Cohen, 2001). Yet significant obstacles to this goal remain. First, the end of the Cold War and the subsequent identity crisis of the non-aligned movement have meant a loss of status and prestige for India, as well as the diminishment of an important platform for the projection of Indian foreign policy values. This decrease in rhetorical influence, coupled with India's lack of involvement in the world economy relative to its size, has meant that India's ascendant destiny resides firmly in the future for the time being.

In contrast with its integral role in the multilateral non-aligned movement, at a regional level India prefers bilateral relations with its neighbors to regional cooperative organizations. With India so much larger than all the other countries in the region, both India and its neighbors tend to view regional cooperation with skepticism. India's neighbors see New Delhi's efforts to build consensus as manipulative and hegemonic, whereas India itself is hesitant to provide a forum for regional collaboration in a way which might result in smaller countries banding together to oppose its preferences. The main regional organization, the South Asian Association for Regional Cooperation (SAARC), was founded in 1983 to foster limited cooperation in the areas of agriculture, rural development, planning, health, education, transport, telecommunications, sports, and culture (Hardgrave & Kochanek, 2008, p. 500). All decisions made by SAARC must be unanimous and therefore the organization's effectiveness has largely been held hostage by the India-Pakistan conflict (Cohen, 2001). Indian policymakers frequently perceive that regionalism is a vehicle for collective

opposition to Indian objectives, so India tends to prefer to conduct bilateral relations with states in its region. Outside the region, historically India's relations with China, the USSR/Russia, and the US have been the most significant. Before moving to these, however, the tensions between India and Pakistan must be discussed.

*Indian-Pakistani Relations*

The conflict-filled relationship between India and Pakistan has its roots in the poor colonial management of the British, the deep-rooted tensions between Hindus and Muslims in the Subcontinent, and the struggle over Kashmir (a region with importance to both national identities) (Cohen, 2001).

The rivalry between India and Pakistan lies in the pre-independence dynamics which led to the two states emergence from the British colonial period as separate entities. While joined in their opposition of British colonial rule, the Indian National Congress and Muslim League Party differed over their conceptions of the role of religion in post-independence identity. While the Congress was majority Hindu in membership, there were significant numbers of Muslim members as well and the Congress advocated for a single unified, secular, and independent Indian state (Metcalf & Metcalf, 2006). In contrast, the Muslim League, fearful that Muslims would be outnumbered and oppressed by Hindus in such an arrangement, called for a separate homeland for Indian Muslims (Paul, 2005, p. 7). Hasty to leave India, the British accepted the inevitability of a separate Muslim state and amidst large-scale religious violence, the two independent states were declared in August 1947, accompanied by mass

migrations of over 10 million people fleeing from one state to the other (Paul, 2005, p. 7).

India and Pakistan have fought a total of four declared wars: in 1947-48 and 1965 over Kashmir, in 1971 over East Pakistan/Bangladesh, and in 1999 over the Kargil region in Kashmir, in addition to countless skirmishes and near-conflicts (SarDesai, 2008).  The disputed regions of Kashmir and Jammu remain the main focal point of the tensions.  Kashmir's population is around 75% Muslim, and its status has been disputed ever since the Partition of India in 1947 (SarDesai, 2008).  During the Partition, Pakistan supported an invasion of Kashmir by Pakistani militants, hoping to seal Kashmir's inclusion in the new state.  The local Maharaja, a Hindu, called on India for protection and agreed to accession to India, provided an internationally-monitored referendum was held once peace was restored (Hardgrave & Kochanek, 2008).  An uneasy peace was finally restored in 1949 through a UN-brokered ceasefire, with one-third of the region in Pakistani hands (Azad Kashmir) and the remainder a part of India. Nehru came to view Kashmir as an essential part of India's budding secular project (he himself was a Kashmiri Brahmin) (Frey, 2006).  After the 1949 ceasefire, Pakistan sought a military partnership with the United States and began acquiring hardware and training.

In the 1960s, emboldened by a decade of receiving US military equipment and training, Pakistan adopted a policy of "leaning on India" in Kashmir.  In 1965, India responded to Pakistani guerrilla incursions with an overwhelming armoured push towards Lahore.  After a series of decisive Indian successes, a

rather inconclusive settlement was reached in 1966 in Tashkent, negotiated by the USSR and supported by the United States (Metcalf & Metcalf, 2006).

The next conflict between the two states occurred not over Kashmir, but over East Pakistan (present-day Bangladesh). The two regions of Pakistan formed as a result of the Partition were always hugely separated by geography and culture, and the unequal power dynamic left many in East Bengal deeply unhappy with their place in the Pakistani state. After an election in East Pakistan was not accepted by the West Pakistani government, the Pakistani army began a repressive attempt to crush East Pakistani opposition. Thousands of civilians were killed in the resulting civil war, and about 10 million refugees streamed across the border into India, causing a humanitarian crisis in its eastern provinces (Hardgrave & Kochanek, 2008). Seeing East Bengali independence as inevitable but not wishing to be left with a permanent refugee problem, India entered the conflict after a series of preemptive Pakistani airstrikes on Indian Air Force bases. In just ten days, Indian troops blazed their way to Dhaka and forced Pakistan's surrender. Pakistan lost roughly half of its entire armed forces in the utter defeat (SarDesai, 2008).

After the 1971 war, tensions never really resolved, remaining high throughout the 1980s and 90s. The two nations' "tit-for-tat" nuclear tests in 1998 showed policymakers on both sides just how risky conflict had become, forcing high-level talks between Indian Prime Minister Vajpayee and Pakistani Prime Minister Nawaz Sherif in 1999 (Paul, 2005). Still, just a few months later, the two nations found themselves once again embroiled in open conflict over a glacier in Kashmir's Kargil district. US President Bill Clinton was able to

convince Pakistan to move its forces back to the 1949 line of control (Paul, 2005).  In December 2001, relations reached a new low when Pakistani-trained terrorists attacked the Indian Parliament building, killing 14 people (SarDesai, 2008). Intense international pressure once again diffused the immediate situation, but tangible progress to a permanent settlement has been virtually non-existent.  Cohen concludes that any resolution of the conflict requires taking significant risks with very limited payoff for either side, and therefore inaction has become the "default option" in Kashmir (Cohen, 2001, p. 222).

*Sino-Indian Relations*

Where India's relationship with the USSR remained relatively constant throughout the Cold War, its relations with China have seen a vast fluctuation over the years.  Nehru viewed China as a natural Asian partner to right the injustices and imbalances caused by colonialism and foreign intervention in the region.  He envisioned a partnership between the two countries which would establish a new post-colonial order in Asia (Cohen, 2001, p. 25).

Sino-Indian relations started warmly, formalized by the *Panchsheel* (five virtues) treaty signed in 1954 (SarDesai, 2008).  The treaty established the two nations' commitment to mutual respect of each other's sovereignty, borders, and non-interference in each other's domestic affairs.  India repeatedly called for mainland China's representation in the UN General Assembly and Security Council over the Republic of China (Taiwan).  Still, tensions over their shared border and the status of Tibet gradually grew throughout the following decade; these tensions would develop into a diplomatic crisis and finally, armed conflict in 1962. In the aftermath of the conflict, the India-USSR special relationship was

strengthened, and China reached out to Pakistan for additional leverage. Both shifts in alignment had profound implications for future events in the region, events which shaped the decisionmaking environment surrounding the nuclear issue in India. The roots of the tensions lie in the disagreements between India and China over their shared border, disagreements which began after both countries gained domestic autonomy in the late 1940s.

After achieving victory against both the Japanese invaders and Chiang Kai-shek's Nationalists at the end of the 1940s, the People's Liberation Army turned its focus to the undeveloped Western frontier and to Tibet. Chinese forces advanced west quickly, consolidating its hold over Tibet and building roads and supply roots as they went. The region of Tibet, which had enjoyed de facto autonomous status for decades while Beijing was occupied elsewhere, suddenly found itself firmly under Chinese control. The resulting tensions within Tibet led to a large-scale armed uprising beginning in 1956. This developed into an all out rebellion against Chinese rule in 1959. As part of its efforts to consolidate its claim on the disputed border region of Aksai Chin and facilitate its military operations in Tibet, in 1957 the Chinese government built a road across territory which India claimed as its own according to the borders drawn by the British colonial administration (the McMahon Line). With tensions already running high and Indian public opinion staunchly against China as a result of the conflict in Tibet, Nehru ordered Indian troops to advance to the McMahon Line and establish "facts on the ground" by evicting any Chinese elements that were located in the disputed region (Garver, 2010, p. 91).

In doing so, Nehru gravely underestimated the significant Chinese forces arrayed against him on the other side of the McMahon Line, as well as the logistics necessary to support forward infantry positions at such high altitudes. This left Indian forces stretched thin, and in October 1962, Chinese forces moved against the Indian positions with decisive and overwhelming force (SarDesai, 2008). Indian troops, not trained for high-altitude combat and generally poorly-equipped compared with their battle-hardened Chinese opponents, were completely routed. Satisfied, China then unilaterally declared a cease-fire and withdrew its forces to the border that it claimed with India.

The 1962 war had great consequences for both India's strategic doctrine and its relations with China. After the war, Indian leaders looked at China with suspicion where Nehru had seen the potential of partnership. The implications for India's military strategy were even more significant. Garver characterizes the effect of the 1962 war in the minds of policymakers as a sort of "never again syndrome"—India's armed forces should never again be caught unawares and unequipped like they were in the conflict with China (2010, p. 93).

Indira Gandhi connected the normalization of ties with China to the solution of the border conflict, a policy which was followed by her successors and led to an armed standoff and near-conflict in 1987 between the two nations, again over the disputed area of Arunachal Pradesh. Although the two nations had exchanged ambassadors again in the 1970s, bilateral ties were extremely limited and the 1987 crisis catalyzed the need for further ties in the mind of Indian policymakers (SarDesai, 2008). Indira Gandhi's son, PM Rajiv Gandhi, visited Beijing on a state visit in 1988, and in 1991, Chinese Prime Minister Li

Peng visited New Delhi (Andersen, 2001). This was followed by a gradual opening of ties; in 1993, Indian Prime Minister Narasimha Rao visited Beijing for talks about reducing tensions over the "Line of Actual Control", the cease-fire line declared by the Chinese at the end of the 1962 conflict. Both nations agreed to pull their troops back from this line and reduce the number of troops deployed along the border in general (Hardgrave & Kochanek, 2008, pp. 504–5).

Still, China and India are deeply suspicious of each other. Both nations are competing over the same geography and markets. Continued Chinese support for Pakistan and the still-unresolved status of the border dispute prevents the reality of the Sino-Indian relationship from meeting the rhetoric with which it began under PM Nehru's tutelage. For many in the Indian strategic community, the rise of China represents a significant threat to India, a threat that should be met by additional assertiveness on India's part.

In the aftermath of the 1998 Pokhran II nuclear tests, PM Vajpayee and other BJP leaders used the threat of China as justification for the tests (Frey, 2006). Yet it is apparent from the efforts made by both sides that this threat is still very much based in assessments of the future rather than a current reality. While the perception of a Chinese threat has clearly shaped Indian policymakers' mindsets concerning the acquisition of nuclear weapons, dynamics in relations with China are inadequate to explain why India chose to test again in 1998, at a time when it was making overtures about repairing bilateral ties.

*Indian-Russian Relations*

As mentioned earlier, India's "special relationship" with the USSR was significant during the Cold War—India received Soviet development assistance and purchased arms, while the USSR viewed partnership with India as a valuable political asset. While staunchly committed to non-alignment, Nehru admired the quick development of the USSR and was wary of American capitalism. The Indian-USSR partnership was cordial but limited to a barter system for weapons and other aid. This partnership was formalized in the Indo-Soviet Treaty of Peace Friendship and Cooperation of 1971 (SarDesai, 2008, p. 442). At its fall, the USSR had supplied India with 70% of its military hardware, and with its collapse in 1991-92, the barter system for weapons also disintegrated while Russia was preoccupied with the transition from the Soviet government (SarDesai, 2008, p. 442). Indian-Russian relations in the post-Cold War era continue to be dominated by arms contracts (SarDesai, 2008, p. 442).

*Indian Relations with the United States*

In contrast, India's relations with the United States have been less central to its foreign policy portfolio in the 20th Century. The US was looking for allies in the region to contain the communist threat during the Cold War, and courted both India and Pakistan. To many Indians, the United States had taken the place of the British as the materialistic leader of the developed world (Cohen, 2001, p. 272). Without close natural ties to the US, India chose to keep its distance while Pakistan joined CENTO and received American military assistance. American military support is credited with giving Pakistan the material means and confidence to challenge its far larger rival (Cohen, 2001, p. 275). Hardgrave and

Kochanek characterize the US-India relationship as one of "intense strain, punctuated by periods of friendship and cooperation (Hardgrave & Kochanek, 2008, p. 510). American support of Pakistan is a major sore spot; India resents that the US policy towards Kashmir effectively views India and Pakistan as being on equal footing. The 1998 nuclear detonations and subsequent Indo-Pakistani tensions brought condemnation and sanctions from the US and the international community, but also forced the US to pay more attention to the region and be more active in diplomacy—President Clinton was the first US president to visit India in over 22 years when he spent five days touring the country on one of his most important state visits (Cohen, 2001, p. 268).

One memory which is burned into the minds of the Indian foreign policy establishment is President Nixon's deployment of the nuclear aircraft carrier USS Enterprise to the Bay of Bengal during the India-Pakistan war of 1971. Angry and humiliated that the US would resort to a form of "gunship diplomacy" to blackmail India rather than engage with the situation through diplomatic channels (Frey, 2006, p. 87). For the Indian foreign policy community, the United States consistently undervalues India in its relations with the Subcontinent and has punished India disproportionately for violating nonproliferation norms (Frey, 2006).

*Structure of Indian Nuclear Policy Making Organs*

In order to better understand the foreign policy decisions made by India's leaders, the institutions responsible for producing policy should be examined. The Indian foreign policy apparatus has been described as highly centralized and elitist, while its decisions often characterized as reactive, rather than proactive.

The Indian Foreign Service consists of a small (~600) staff of elite bureaucrats operating under the offices of the Ministry of External Affairs (MEA) located at 162 missions and posts around the world (MEA, 2014). The MEA generally executes the decisions made by the Prime Minister, Foreign Minister, and small inner circle of trusted advisors. This often resembles an informal process, according to the style of the ruling PM. For example, as PM from 1946 until his death in 1964, Nehru also served simultaneously as his own foreign minister. Known as the "one-man think tank," Nehru was notorious for his micromanagement of every level of the foreign policy bureaucracy (Hardgrave & Kochanek, 2008, p. 477). In a more recent example, PM Vajpayee consulted with only a handful of close confidants in the decision-making process which led to the nuclear tests of May 1998 (Perkovich, 1999).

This advising structure often leads to a policy which appears reactive and reactive and ad hoc—mechanisms are weak or non-existent, leaving institutional decisions up to those at the highest levels of government. Even the disastrous border war with China in 1962 failed to prompt significant soul-searching on how the establishment conducted and executed foreign policy decisions. Attempts to create a National Security Council in the late 1980s and early 1990s were circumvented by the MEA bureaucracy as a threat to their institutional domain. The rise to power of the BJP provided new impetus for change in this area, with a new National Security Council being formed in November 1998; however the assessment (as of 2008) is that not much has changed from the previous status quo (Hardgrave & Kochanek, 2008, p. 480).

In order to understand how decisions regarding nuclear weapons were made in India, the institutional framework for nuclear policymaking also needs to be summarized.  Although the Constitution stipulates that the President is the "Supreme Commander" of the armed forces, as Head of State he/she has little say over nuclear policy, which lies in the domain of the prime minister.  The prime minister holds the cabinet post for minister of science and technology, which includes the Department of Atomic Energy (DAE).  This state organ in turn works together with the technical Atomic Energy Commission (AEC) to execute nuclear policy.  The MEA historically has played a small role in the development and execution of nuclear-related policies; instead, the prime minister, as head of the DAE, makes decisions in close conference with the chief scientist who heads the AEC.  The Defence Research and Development Organization (DRDO), under the oversight of the defence minister, works together with the AEC on the weaponization side of the development agenda.  The effect of these institutional characteristics is for the most important decisions regarding India's nuclear program to be made in an off-the-record fashion by the prime minister after consultation with the head of the AEC (Perkovich, 1999, pp. 9–10).  This point is important to note in moving forward, as information on key turning points in India's nuclear timeline is missing because of this off-the-record decisionmaking framework.

*Nuclear Timeline*

India's nuclear timeline begins before the country's independence, with the rise of Dr. Homi Bhabha, widely considered the father of the Indian nuclear program (Sublette, 2003).  Through his education at Cambridge, he gained the

opportunity to meet some of the leading experimental physicists of the era, men like Niels Bohr, James Franck, and Enrico Fermi, who would soon be intimately involved in the Allies' nuclear bomb programs.  In 1944, Dr. Bhabha petitioned the Sir Dorab Tata Trust to fund an institution dedicated to fundamental physics research, and in 1945, the Tata Institute of Fundamental Research opened in Bangalore (today's Bengaluru) (Tata Institute of Fundamental Research, 2013). With the United States' dropping of atomic bombs on Japan, the importance of the new nuclear technology became obvious to the world's leaders.  In 1946, Interim Government Cabinet leader (later PM) Jawaharlal Nehru wrote a series of notes to state officials to prevent the export of materials useful for nuclear research.  That same year, he appointed Dr. Bhabha as the official scientific adviser to the Indian government.

At the same time, the US-proposed Baruch Plan was being debated at the United Nations.  Central to the plan was the stipulation that all fissile ores (primarily uranium and thorium) would be held under international ownership to prevent the proliferation of nuclear weaponry.  Possessing significant deposits of thorium in the monazite sands in the south of the country and having experienced British colonialism, India was wary of any restriction placed on a potential future economic and strategic asset.  Nehru began taking steps towards developing this asset through forming an Atomic Energy Research Committee with Dr. Bhabha as chair. This effectively solidified Bhabha's position as Nehru's close advisor on atomic-related issues (Venkataraman, 1994, p. 145).

The next major step occurred in 1948, less than a year after India's independence.  On 15 April 1948, the Atomic Energy Act was passed in the

Indian Constituent Assembly (Abraham, 1998). This bill, established the Atomic

Energy Commission (AEC) and placed the AEC under the authority of the prime

minister (Abraham, 1998, p. 61). The Atomic Energy Act, while ostensively

modeled on the British Atomic Energy Act, shrouded all atomic research and

development in secrecy. During debate over the bill, MP S.V. Krishnamurthy Rao

pointed out that "secrecy in the UK is restricted only for defensive purposes."

Nehru responded tellingly by stating, "I do not know how you are to distinguish

between the [defense and atomic energy purposes]" (Abraham, 1998, p. 61).

In his new position as head of the AEC, Bhabha began to use his contacts

abroad to seek information on nuclear ores, reactors, enrichment, and other fuel

cycle technologies. This occurred as PM Nehru embarked on a four-year plan to

develop India's nuclear program in 1952 (Bhatia, 1979, p. 88). In November

1954, the Conference on the Development of Atomic Energy for Peaceful

Purposes was held in New Delhi. At the conference, Dr. H. Bhabha presented his

plan to develop India's nuclear power sector in three stages, largely independent

of international assistance. According to this plan, India would first build

Canadian-supplied natural uranium-fueled reactors which produce plutonium as

well as electric power. This plutonium would be recycled and mixed with

thorium to fuel the second-stage reactors. In the final stage, the uranium

produced from the thorium would be used to fuel breeder reactors (NTI, 2010).

In 1955 Canada and India agreed to construct a Canadian-designed

natural uranium-fueled 40 MW research reactor, the Canada-India Reactor.

When the United States agreed to supply the reactor with the necessary heavy

water moderator, its name was changed to CIRUS to reflect American

participation in the project (NTI, 2010).  The same year, construction on the Apsara pool-type reactor began in Trombay.  The reactor design and initial fuel supplies were provided by the UK.  When this reactor went critical in August 1956, it was the first operational research reactor in Asia (NTI, 2010).

Technical progress on the three-stage plan outlined by Bhabha continued well into the 1960s.  In 1958, PM Nehru authorized Project Phoneix, which entailed the construction of a spent fuel reprocessing plant to extract plutonium from the fuel rods of the CIRUS research reactor.  The plant was to have a total throughput of 20 tons of fuel per year, or the calculated spent fuel to be produced by the CIRUS reactor (Sublette, 2001).  Between 1958 and 1959, 77.6 million rupees—or 27 percent of the Indian government's total technology R&D budget—was allocated for the AEC's operations alone (Abraham, 1992, p. 242). In 1959, over 1000 researchers were employed at the atomic energy research complex at Trombay (Jain, 1974, p. 91).  From both the number of scientists being employed at Trombay and the amount of money being spent on the AEC, it is clear that by this point Bhabha had Nehru's ear when it came to nuclear decision-making.  Still, it would be wrong to conclude that Dr. H. Bhabha was steering the ship of nuclear affairs.  In 1957, just as the international atomic race was heating up, Nehru completely rejected Bhabha's proposal to start research on the specifics of nuclear explosives (Hymans, 2006, p. 176).

In 1961, construction of the Phoenix reprocessing plant at Trombay began. The plant was designed to separate usable plutonium and uranium from spent fuel elements irradiated in nuclear reactors using the PUREX method, which had then been recently declassified and made available by the US through

the Atoms for Peace program. In the PUREX process, the fuel is first removed from its protective cladding using a combination of cutters and chemical agents, and then the plutonium and uranium are separated from the rest of the fission products using a series of chemical processes (Doyle, 2008b). This enables the recovery of specific isotopes of plutonium and uranium, useful for fabricating new fuel, but also for acquiring the proper isotopic ratios necessary for creating the core of a nuclear weapon.

By 1962, the main process building of the reprocessing plant was almost finished, along with much of the support infrastructure (Department of Atomic Energy, 1964, pp. 3–4, 8). That same year, the Department of Atomic Energy (DAE) opens a tender for a nuclear power plant to be built at Tarapur, selecting General Electric's proposal for two turnkey boiling water reactors (BWR) with a total power rating of 380 MWe (Department of Atomic Energy, 1964, p. 11). Shortly thereafter, the DAE decided to pursue a second power station near the Rana Prata Sagar dam in the state of Rajasthan. This reactor would be built by Indian technicians using plans and specifications obtained from the Canadians (Department of Atomic Energy, 1964, p. 12).

During the 1960s, India pursued a relatively aggressive program of acquiring nuclear technology, yet these activities cannot be attributed to a clear desire for a nuclear explosive. In 1965, probably influenced by the 1964 Chinese nuclear test, Bhabha pressured Nehru's successor Lal Bahadur Shastri to allow the undertaking of a study of the theoretical and technical feasibility of a peaceful nuclear explosive (PNE), a request which Shastri reluctantly granted. Yet PM Shastri forbade the AEC from contacting and collaborating with the Ministry of

Defense laboratories which would be responsible for the research and design of such a device (Hymans, 2006, p. 179).

In 1966 Dr. Bhabha was killed in a plane crash on Mount Blanc on the way to join a meeting of the Scientific Advisory Committee of the IAEA. Prime Minister Indira Gandhi renamed the AEET as the Bhabha Atomic Research Centre in his honor in1967. After Bhabha's death, PM Indira Gandhi appointed Vikram Sarabhai as his replacement, and as one of his first acts as director, Sarabhai ordered the confiscation of documents and the cessation of activities related to the PNE project (Perkovich, 1999, p. 122). As an adherent of the pacifist Jain faith, Sarabhai was known for his opposition of the development of a nuclear weapon and worked to prevent the work from progressing (Hymans, 2006, p. 179).

At the same time, India vociferously defended its right to access nuclear technology in the international arena, most notably in the negotiations leading to the development of the Non Proliferation Treaty in 1968. Indian concerns regarding assurances of disarmament were not incorporated, and parliament vehemently vetoed Indian signature of the treaty quickly thereafter on 12 June 1968 (Perkovich, 1999, p. 125). Indian efforts to achieve independence in the area of nuclear technology continued through the opening of a new uranium mill at Jaduguda, in Bihar state, that same year (Perkovich, 1999, p. 125). In 1970, PM India Gandhi dedicated the Tarapur Atomic Power Station to the nation. The 380 MWe BWR facility at Tarapur was India's first commercial power plant, the result of the agreement with GE for a pair of turnkey reactors (NTI, 2010).

In 1971, the escalation of the civil war between East and West Pakistan in the eastern territory of modern-day Bangladesh led to a series of events which changed the calculus of the policymakers who until then had been opposed to the active pursuit of a PNE. By December 1971, India had intervened in the conflict and routed the Pakistani Army. The Nixon administration, watching developments in East Pakistan with alarm, dispatched the USS Enterprise carrier battle group to the Bay of Bengal in a "tilt" to support Pakistan (Hymans, 2006, p. 180). In reaction to the humiliating defeat, Pakistani President Zulfiqar Ali Bhutto summoned key figures in the national science community to a meeting in the city of Multan in 1972. There he issued the call to jumpstart a Pakistani effort to acquire a nuclear weapon. Informed of this meeting and troubled by the American interference in the conflict and perceived support of Pakistan, Indira Gandhi gave the go-ahead for an Indian push for a PNE (Perkovich, 1999). Work on all the systems necessary for a successful detonation intensified with her approval, and two years later on 18 May 1974, India conducted "Smiling Buddha", the test of the PNE, in the Pokhran desert (Abraham, 1998).

International reaction was swift—a mere four days after the detonation, Canada announced a freeze of all nuclear assistance to India for the CANDU reactors in Rajasthan and the Kota heavy water production facility which were under construction at the time. The plutonium used in the device detonated at Pokhran was produced in the Canadian-supplied CIRUS facility (NTI, 2010). The US and UK also issue strong condemnations of the test and the continuation of nuclear cooperation with these countries was thrown into doubt.

Due to the sanctions and doubts caused by the 1974 test, the Indian nuclear program witnessed a slow-down in the following decade. The reactors at Tarapur, for example, were forced to operate at limited power levels to conserve fuel in light of US refusal to honor the long-term contracts for fuel supply signed before the test (NTI, 2010). This experience encouraged the pursuit of the natural uranium and thorium fuel cycles, as well as indigenous production of the necessary heavy water moderator.

In 1977, the AEC began work on the Dhruva research reactor at the Trombay complex. Completed in 1985, the Dhruva Research Reactor is an indigenously-designed and built version of the CIRUS reactor, designed to produce plutonium from natural uranium using a heavy water modifier and coolant (NTI, 2013d). The reactor's unique design allows for the extraction of specific isotopes of plutonium after specific irradiation times. This enables operators to achieve specific isotopic ratios, an important point in producing weapons-grade plutonium (Doyle, 2008b).

Despite all the attention that the 1974 PNE detonation garnered from the international community, India could not immediately be categorized as a state that was ready to deploy nuclear weapons. In fact, Itty Abraham estimates that it was not until around 1986 that India could be classified as a "nuclear weapons-capable state" (2009).

Even after the heightened tensions of the Brasstacks crisis, Indian policymakers continued their calls for disarmament into the 1990s. In fact it was Prime Minister Rajiv Gandhi (son of Indira Gandhi) who introduced the proposal of an "Action Plan for a Nuclear-Weapons-Free and Non-Violent World Order" to

the UN General assembly in 1988. Stage one of this action plan was a 50% cut in the arsenals of the USSR and US, a moratorium on the production of new weapons and weapons-grade fissile material, and a ban on testing of nuclear weapons (United Nations, 1988, p. 16). This ban reopened international dialogue on a future Comprehensive Test Ban Treaty (CTBT), and in 1993 India and the US cosponsored the UN resolution calling for the CTBT (Hymans, 2006, p. 193).

Yet with the fall of the Iron Curtain, negotiations on the CTBT not only progressed more quickly than Indian leaders assumed, but also advanced in a direction that Indian policymakers perceived would retain the pre-treaty status quo. Indian elites desired a greater emphasis placed on the disarmament responsibility of the nuclear powers with respect to the concessions of sovereignty made by non nuclear weapons states. Additionally, a lobbying campaign by the BJP and its partners in the Lok Sabha successfully labeled the negotiations of both the CTBT and the renewal of the NPT (set to expire in 1995) as a continuation of "nuclear apartheid," a stance which was confirmed in the minds of Indian policymakers and the public through heavy-handed US demands for a complete Indian about-face in its nuclear policy.

Given the uncertain future of India's relationship with the NPT, in 1995, Prime Minister Narasimha Rao's government was caught contemplating a series of nuclear tests by American intelligence, and was dissuaded from conducting tests by the resulting US diplomatic pressure. Hymans (2006) interprets this not as a sign of the "inevitability" of Indian nuclear tests, but rather a continuation of

the status-quo policy of nuclear ambiguity. Yet the 1996 Lok Sabha elections were to change the mix and bring the BJP to the decisionmaking forefront.

When the election results were tallied, the BJP had emerged on top, with 186 seats, yet needed to obtain a majority of at least 273 seats in order to form a coalition government. After being sworn in as prime minister, Atal Behari Vajpayee was given 15 days to gather a majority. Almost immediately, Vajpayee visited R. Chidambaram, head of the AEC, and A. P. J. Abdul Kalam, head of the DRDO (Hymans, 2006, p. 196), giving them the go-ahead to begin preparations for a nuclear test at Pokhran. Perkovich notes that although American intelligence detected the test preparations, they failed to detect just how close India really was to a nuclear detonation—one nuclear device was actually lowered into position in a test shaft (1999, p. 374). Vajpayee wisely decided to wait for the vote of confidence before calling the shot. Eleven days later, the BJP lost the vote of confidence and a new governing coalition led by H. D. Deve Gowda formed in its place (Perkovich, 1999).

The BJP received another chance in 1998, and this time was successful in forming a ruling coalition under Vajpayee's leadership on 19 March 1998. The very next day, Vajpayee visited Chidambaram and Kalam and instructed them to prepare for a test. On 6 April, Pakistan tested a Ghauri missile, capable of delivering a nuclear payload to India's major metropolitan areas (Hymans, 2006, p. 196). Two days later, Vajpayee instructed Chidambaram and Kalam to go ahead with the test (Hymans, 2006, pp. 196–7). After 30 days of preparations, on 11 May India conducted three simultaneous underground tests at the Pokhran site—one fission device, one thermonuclear device, and a low-yield experimental

device (Hymans, 2006).  Two days later, two more tests were conducted, both sub-kiloton experimental devices.  India had officially entered the "nuclear club."

*Conclusion*

Overall, Indian foreign policy has been characterized by multilateral involvement at the international level, while at the regional level experiencing a significant uptick in hostility during the 1960s.  Guided by Nehru's normative discourse, India has traditionally been very vocal on the international scene.  At the regional level, the aftermath of the 1962 border war had important implications both for Indian strategic doctrine and bilateral relations with China, Pakistan, and the USSR which have shaped the trajectory of India's foreign policy ever since.

## 5.3.    Indian Nuclear Policy: Material Inputs

In this section the material inputs of India's nuclear role conception will be investigated in depth.  First the acquisition of key fuel cycle facilities will be discussed, followed by an analysis of India's security environment.  Specifically, the shaping events of the 1960s and the Brasstacks Crisis of the late 1980s are covered in detail.

*Technical Capabilities*

This section details the acquisition of key fuel cycle facilities by India, which are summarized in Table 7 below:

**Table 7: Key Indian Fuel Cycle Facilities**

| Technical Capability | Facility Details | Year |
|---|---|---|
| Source of Fissile Material | Jaduguda Uranium Mine, Bihar State | 1968 |
| Operating Research Reactor | Apsara (pool type, 1MW) BARC, Trombay | 1956 |
| | CIRUS (natural uranium, 40 MW) BARC, Trombay | 1960 |
| Conversion Facility | Uranium conversion and fuel fabrication facility, BARC Trombay | 1970s |
| Heavy Water Production Facility | Nangal: small scale | 1962 |
| Enrichment Capability | Pilot ultracentrifuge plant BARC, Trombay | 1985 |
| Reprocessing Capability | Phoenix Facility (PUREX method) BARC, Trombay | 1964 |

*Domestic Source of Fissile Material:*

Interest in uranium mining in India was high immediately after independence—in 1948 the Atomic Energy Commission established the Rare Metal Survey Unit to survey the country for uranium reserves (Gupta & Sarangi, 2005). Uranium ore was first discovered in India in 1951 at Jaduguda in Jharkhand State, and India's first commercial uranium mine was commissioned there in 1968 (Gupta, 2009). Still, India has very small domestic reserves of uranium and has struggled to produce enough fuel for its domestic power program over the years.

*Operating Research Reactor*

Apsara, located at the Bhabha Atomic Research Centre, was India's first research reactor and first went critical in August 1956 (NTI, 2013a). Designed by Indian scientists with assistance from the UK, Apsara was initially fuelled with HEU supplied by the UK as well (NTI, 2013a). Apsara was the first operating reactor in the whole continent of Asia, marking just how advanced the Indian program was from an early stage (NTI, 2010). India's second research reactor was the aforementioned CIRUS reactor, which went critical in July 1960 (NTI, 2013c). The large 40 MWt reactor burns natural uranium fuel and therefore uses a heavy water moderator and can be refueled online (without shutdown). This reactor was not safeguarded by the IAEA and capable of producing 9-10 kg/ year of plutonium suitable for weapons. The CIRUS reactor provided the plutonium used in the "Smiling Buddha" test of 1974 (NTI, 2013c).

*Conversion Facility*

Uranium conversion is defined as the process by which uranium ore is chemically converted into $UF_6$ gas in preparation for introduction to the enrichment plant (Lamarsh & Baratta, 1997). Indian scientists mastered this technique sometime in the 1970s (NTI, 2010), and it is now employed in the Rattehali Enrichment Facility built in the late 1980s (NTI, 2012b).

*Reprocessing Capability*

Reprocessing capability is defined in the model as the ability to recover fissile material from spent nuclear fuel (Duderstadt & Hamilton, 1976). Construction on India's first reprocessing facility started in 1961 and the facility at BARC in Trombay was processing spent fuel from the CIRUS reactor as early as 1964 (NTI, 2012a). This facility most likely extracted the plutonium used in the 1974 tests, with estimates claiming around 400 kg being extracted by 1997 (NTI, 2012a).

*Heavy Water Production*

Because Indian scientists chose to pursue a natural uranium-based fuel cycle, India also has pursued heavy water production technology. Heavy water is needed to moderate reactors using natural uranium as fuel. Natural uranium contains mostly $U^{238}$, a fertile isotope of uranium which becomes $Pu^{239}$ with the absorption of a neutron (Duderstadt & Hamilton, 1976). For this reason, heavy water production technology is safeguarded and controlled by the nonproliferation regime, as a reactor operated using heavy water can easily be used to produce plutonium for bombs (Doyle, 2008b). India's first heavy water production facility was built at Nangal in 1962 and was bought from the German company Linde (NTI, 2013e). Using outdated 1940s technology, the Nangal plant produced enough water to keep the CIRUS reactor running as well as augmenting the supplies for the other plutonium production reactors (NTI, 2013e). Today, India is the world's second largest producer of heavy water, with

eight known industrial sized facilities currently operating in the country (NTI, 2014b).

*Enrichment Capability*

Essential to the production of enriched uranium nuclear fuel, enrichment capability is defined as any facility which increases the isotopic percentage of uranium-235, allowing the fuel to be used in a sustainable chain reaction (Duderstadt & Hamilton, 1976). India's first uranium enrichment plant was built BARC in Trombay as a pilot cascade of gas centrifuges (NTI, 2013f). Opened in 1985, this facility has been enlarged as India's ultracentrifuge program has become more advanced (NTI, 2013f).

## 5.4. Security Environment

In this section, policymakers' perceptions of the Indian security environment are discussed. Specifically, three crucial points from the overall nuclear timeline are examined: first, the crucial decade of the 1960s, dominated with the war with China, second, the Brasstacks crisis with Pakistan of the late 1980s.

*Developments in the 1960s*

India experienced a dramatic turn for the worse in its security environment in the 1960s. In addition to the afore-mentioned 1962 Indo-

Chinese war, China detonated its first nuclear test in 1964 and India fought its second war with Pakistan in 1965. Finally, the signing of the NPT in 1968 by the major powers and subsequent Indian rejection of the treaty left India on the outside of the growing nonproliferation regime.

For most of the 1950s, relations between India and China were quite warm. Nehru's vision for Indian non-alignment drew the two states together, a friendship which continued until the Chinese invasion of Tibet in 1959. India welcomed the Dalai Lama and thousands other asylum-seekers fleeing the fighting, adding a significant strain to the relationship between the two countries (Metcalf & Metcalf, 2006, p. 247). At the same time, China began establishing 'facts on the ground' by stationing troops along the two country's disputed border. When Nehru dispatched Indian Army divisions to put pressure on the Chinese positions, they were repelled swiftly and the Chinese forces descended all the way to the Assam Plains before unilaterally calling a cease-fire and withdrawing back to the Aksai Chin plateau (Metcalf & Metcalf, 2006, p. 248).

The Indo-Chinese War of 1962, while short, had a disproportionate effect on the mindset of Indian policymakers. Before the war, PM Nehru had insisted that India would not make itself slave to colonialist weapons dealers or enter the bloc system on the side of one of the two superpowers. The Indian Army was equipped with virtually the same hardware that it had inherited at Independence, and this weakness was exposed in the war with the Chinese. Having put so much faith in an Indo-Chinese partnership, PM Nehru was shocked at how quickly the Chinese reverted to power politics even after the friendly overtures of the previous decade (SarDesai, 2008).

In 1964, Indian fears were compounded by the news that China had entered the nuclear club with its first nuclear test. Hymans lists two important policy implications of the test: a quest for a nuclear guarantee from the great powers, and an authorization of an AEC study on constructing a nuclear explosive (2006, p. 178). The proposed guarantee was a product of non-alignment: it was to be a UN declaration made by the US, USSR, and UK to protect all non-nuclear states from a nuclear attack (Hymans, 2006). In the end, India's leaders' commitment to their non-aligned status won out over their perception of the threat from the new Chinese bomb, and they did not move to leave the state of "nuclear ambiguity" during this period.

Next in the tumultuous decade was war between India and Pakistan again, this time in 1965. Overt hostilities began with Pakistan deploying special forces into the Indian-controlled Kashmir valley in the hopes of sparking a local insurgency. Responding to this incursion, Indian forces drove the Pakistanis back and added to their holdings of Kashmiri territory. The Pakistani Army launched a counter-offensive from the south in an attempt to cut Indian forces in Kashmir off from their thin supply lines connecting them with the rest of the country (Perkovich, 1999, pp. 108–109). The Indian Army counter-attacked with an armored push towards Lahore, which ended up establishing a front about 15 miles into Pakistani territory (Perkovich, 1999, p. 109). After a UN-brokered ceasefire, the conflict ended after a month and a half of intense fighting. The peace treaty officially ending hostilities was negotiated by the Soviets and signed in Tashkent, without addressing the status of Jammu and Kashmir (Perkovich,

1999, p. 110).  The 1965 war was seen as a victory in India, especially coming after the embarrassing defeat to China in 1962.

One of the main changes to Indian security doctrine after the 1965 war was a shift in its overall defense posture.  Before 1965, Indian strategists were focused on possessing "matching capabilities" with respect to Pakistan, but after the experience of 1965, this shifted to a policy focused on maintaining "sufficient deterrence" in its deployed forces (Paul, 2005, p. 13).  This has meant that the continuing conflict over Kashmir has been increasingly characterized by asymmetric warfare, with Pakistan employing insurgents and occupying easily defensible positions against a numerically superior Indian force.  Still, from a technical perspective, India had not yet amassed enough plutonium to create a test device—while the debate continued in parliament, the scientists continued at their pre-war pace (Perkovich, 1999, p. 112).

The 1960s was a tumultuous decade with many changes in India's security environment.  Entering the decade, India was a vocal leader of the non-aligned movement, portraying itself as a model for other newly-decolonized states.  Nehru had worked hard in the 1950s to introduce China to the world and had envisioned China and India partnering together to foster cooperation in Asia. The 1962 Chinese-Indian war shocked Nehru and proved to be the end of these aspirations for Indian foreign policy.  Not only were relations with China frozen for decades, but Indian credibility in Asia and in the eyes of the non aligned moment was severely damaged—no one likes to follow a loser, especially one which was defeated in such total fashion as India was.

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The war also had significant effects on Indian strategic doctrine—Indian policymakers embarked on modernization efforts for the military and approached the region with a "never again" mindset which has continued to this day. As a result of these preparations, the 1965 war with Pakistan went much better by comparison. That conflict showed how a numerically-superior Indian force could be challenged by the Pakistani army utilizing American weaponry and training. American provision of military aid to Pakistan before the war was interpreted as a denial of Indian regional leadership. Overall, the experiences of the 1960s led the Indian establishment to engage in a re-envisioning of its security environment

*Brasstacks Crisis, 1986-1987*

In 1986, the year-long Brasstacks crisis with Pakistan was instrumental in convincing Indian policymakers to take the steps necessary to make weaponization of the existing technology an easy task should the need arise. The security dilemma which arose from the Indian Army's massive exercises near the Pakistani border (codenamed *Operation Brasstacks*) ushered in a new era of tensions between the two countries and had important implications for the nuclear programs of both states. At the end of 1986, India decided to conduct massive military exercises in the Rajasthan Desert near the Pakistani border, resulting in a tense standoff with hundreds of thousands of troops on high alert. It took several months of intense diplomatic efforts to diffuse the crisis.

The Brasstacks crisis emerged through a series of communication breakdowns, both between Indian and Pakistani officials, and between domestic agencies on the Indian side as well. Pakistani officials were not kept informed

enough of the Indian military's exercises to be executed dangerously close to the border. At the same time, the Pakistani military was performing its own previously-scheduled exercises in Sindh province on the other side of the border (Frey, 2006, p. 97). Previous military exercises had raised tensions, but *Operation Brasstacks* was different because of the sheer size of the Indian deployment. *Brasstacks* was the largest military exercise in South Asia post-independence, and rivaled multi-national NATO exercises in terms of scale (Bajpai, Chari, Cheema, Cohen, & Ganguly, 1995, p. 3). Most worrisome to Pakistan was the Indian military's dumping of large quantity ammunition and fuel in advanced positions and the involvement of the Indian Air Force, with the activation of forward airbases and air defense systems near the border. According to Pakistani estimates, the exercise involved over a quarter of a million troops and 1300 tanks, and cost over a quarter of a billion dollars (Bajpai et al., 1995, p. 30).

The crisis began on 18 January 1987, with the Indian announcement of "dangerous" Pakistani troop maneuvers in response to the Indian mobilization on the border (Bajpai et al., 1995, p. 33). Thus the publics on both sides were notified of just how close to war their two countries actually were. It took until 23 January for a hotline to be established between the two military commands (Bajpai et al., 1995, p. 34). After a series of conciliatory gestures on both sides, both sides agreed to diplomatic talks to diffuse the tensions on 25 January (Bajpai et al., 1995, p. 35). One such gesture was the introduction of "cricket diplomacy" to the Subcontinent—President Zia was invited by the Indian Cricket

Board of Control to watch the India-Pakistan cricket match in Jaipur, a move which is cited with reducing the tensions further (Bajpai et al., 1995).

Information on how the Brasstacks crisis affected this stage of India's nuclear program's development is sketchy at best. Hymans concludes that Rajiv Gandhi gave secret approval for "weaponization" sometime between 1988 and 1989 (2006, p. 190), yet exactly how this decision differed from the low-level preparations already underway in the scientific community is unclear. Still, Brasstacks introduced a more serious nuclear tone to the tensions in the Subcontinent. In an interview conducted with an Indian journalist on 28 January, in the midst of the crisis, Pakistani nuclear chief A. Q. Khan issued a statement widely interpreted as a threat. Khan stated that Pakistan had achieved weapons-grade uranium enrichment and was capable of testing an atomic bomb in laboratory simulations: "Nobody can undo Pakistan or take us for granted. We are here to stay and let it be clear that we shall use the bomb if our existence is threatened" (Bajpai et al., 1995, p. 39). By the time the interview was published, the crisis had passed, but the spectre of the nuclear threat remained (Perkovich, 1999, p. 281).

Indian policymakers interpreted the rapid and strategically complex deployment of the Pakistani Army in response to the Indian maneuvers as a sign of how weak their country remained, a perception encouraged by the debacle in Sri Lanka the same year (Frey, 2006). Perkovich states how Indian PM Rajiv Gandhi recognized that the key threat to Indian security still was conventional in nature and necessitated a build-up in conventional capabilities, not nuclear (1999, p. 282). Additionally, Rajiv Gandhi's government's official policy

remained that the Khan announcement did not mark a change in Pakistani policy and that India had no aims to exercise its nuclear option (Perkovich, 1999, p. 282). Overall, the Brasstacks crisis showed the Indian security establishment how close their nation was to another confrontation with Pakistan, and instigated important reforms in decision-making processes and institutions (Frey, 2006). While policymakers perpetuated the policy of nuclear ambiguity in the 1960s and 1970s, the debate over Brasstacks and its relation to the nuclear issue meant that the debate shifted from one of the philosophical and moral implications of weapons to a debate over the security threat and weaponized nuclear capability as a part of it (Frey, 2006). This debate intensified throughout the 1990s until the tests of 1998.

## 5.4. Ideational sources of Indian role conceptions

This section contains the analysis of ideational sources of Indian nuclear policy. As has already stated, this study defines ideational sources of role conceptions as the leaders' perception of national identity, history, and domestic audience (Breuning, 2011). These factors will be identified through a two-fold approach combining a survey of the foreign policy literature on India with a discourse analysis of key speeches of Indian leaders. I identify two distinct bodies of thought in India with relationship to the nuclear issue; one which scholars have labeled as *Nehruvian* and one which can be characterized as *Hindu Nationalist*. This dichotomy is identified by Sridharan and Varshney, who describe Indian national identity in terms of the three distinct themes of geography, culture, and religion: "These three themes have yielded two principal

attitudes about India's national identity—the secular nationalist and the Hindu nationalist. The former combines geography and culture; the latter geography and religion" (Sridharan & Varshney, 2001, pp. 225–6)

These two perspectives have very different opinions on two key questions of culture and history: firstly, *what does it mean to be Indian*, and secondly, *what does the trajectory of Indian history look like?* Indian policymakers draw on these concepts both in order to connect with their constituencies and to explain their nation to the world. Therefore, the importance of the intended audience of the discourse is important. Each perspective on Indian identity and history will be explored, starting with the Nehruvian view and then moving on to the Hindu Nationalist view.

*Nehruvian View*

Few have shaped the modern face of India more dramatically than the nation's forceful first prime minister, Jawaharlal Nehru. Born into a Westernized and wealthy Kashmiri Bhraman family, Nehru played an important role in the struggle for India's independence (Power, 1964). He was jailed eight times for a total of nine years by the British colonial administration for participating in Gandhi's civil disobedience movement (Gokhale, 2014, p. 312). Gandhi, Nehru's senior by almost 20 years, drew the inspiration for his philosophy and movement solely from Indian cultural and religious sources. While adhering to the Mahatma's philosophy of *Satyagraha,* Nehru was keen to adopt Gandhi's views to the question of how India should behave internationally. Thus he felt

comfortable also viewing India in light of the tradition of Western thought, including Marxism.

Nehru was enamored by the "mighty experiment" of Soviet modernization efforts in the 1930s. Yet he did not feel that Marxism was the solution to humanity's problems because of its exclusively materialistic focus: "Life is something more than economic growth, though it is well to realize that economic growth is a basic foundation of growth and progress" (Gokhale, 2014, p. 313). Still he was deeply distrustful of capitalism's "law of the jungle"; under the British Raj he had witnessed all too often the exploitation of the weak by the powerful for the purpose of material gain. Overall, Nehru's admiration of Marxism and its ability to explain India's experience of colonial exploitation had a deep impact on both his domestic and foreign policy.

For Nehru, who grew up in a multi-ethnic, multi-religious environment in Kashmir, viewed Indian identity as an over-arching synthesis of its constituent ethno-religious components. The Indian people, according to Nehru, are an "odd mixture of many races" driven by a desire for "synthesis between old and new" (Nehru, 1994). He saw all the diverse peoples of India—Muslim, Hindu, Jain, or Christian—as "distinctly Indian", with the same national heritage (Nehru, 1994). This view fueled his concept of Indian secularism, where a shared history and geography unite an incredibly diverse population.

Nehru's understanding of what India's shared national heritage consisted of was shaped by his explorations of India's rich past. A large section of his memoir, The Discovery of India, is devoted to tracing the trajectory of Indian history from the Indus Valley Civilization through the colonial occupation. Nehru

saw the trajectory of Indian history as cyclical; periods of glory were followed by periods of stagnation.  These periods of stagnation corresponded to times when India closed its mind to the outside world (Gokhale, 2014, pp. 321–22). According to Nehru, India fell behind and become a "slave country" because it lost its technical and developmental parity with the West (Nehru, 1994).  India should progress technologically so as not to remain weak, while retaining its independence and "self-reliance" in relation to other states.

Nehru's influence on Indian foreign policy as a whole cannot be understated.  The principles he instilled confidently and forcefully on the newly-independent nation have left their mark—to this day Nehruvian themes dominate the Indian foreign policy discourse.  Nehru himself clearly spelled out the goals of Indian foreign policy in a 1949 address at Columbia University: Indian foreign policy should merge "enlightened self-interest" with a form of homegrown idealism (Nehru, 1949).  For Nehru, these supported India's rightful central place on the stage of world affairs: "India…cannot play a secondary part in the world.  No middle position attracted me" (Nehru, 1994, p. 56).

At the same time, he stated his perception of the inevitability of Indian foreign policy:

> I have not originated it.  It is a policy inherent in the circumstances of India, inherent in the past thinking of India, inherent in the whole mental outlook of India, inherent in the condition of the Indian mind during the freedom struggle and inherent in the circumstances of the world today.  I come by in the mere accidental fact that during these few years I have represented that policy as

foreign minister.  I am quite convinced that whoever might have been in charge of the foreign affairs of India and whatever party might have been in power in India, they could not have deviated very much from this policy (Cohen, 2001, p. 39)

As a land shaped by Gandhi's message of *ahisma*, or non-violence, India should pursue a policy of peace, non-alignment, and liberation for the colonized peoples of the world, according to Nehruvian thought.  Still, Nehru rejected the doctrine of non-violence in foreign policy: "No Government of any country dare allow its country to be unprepared for contingencies" (Sagar, 2009, p. 803)

The non-aligned status, the reluctance to modernize the armed forces, and intense participation in international fora are all examples of Nehru's vision of carrying on the vision for the country that he shared with Gandhi.  The legacy he left behind cannot be underestimated—the Nehruvian worldview of distrust of international power politics continued as the dominant foreign policy discourse for many decades after his death.  This "Nehruvian mainstream" has been challenged by those adhering to a revitalist Hindu ideology (Cohen, 2001, p. 43), a group whose ideology will be unpacked in the next section.

*Hindu Nationalist View*

The origins of the modern Hindu nationalist movement also lie in the resistance to British colonial rule in the first half of the 20th Century.  The history of this movement can be traced from 1925, the year that the Rashtriya Swayamsevak Sangh (RSS) organization was founded by Keshav Baliram

Hedgewar (Cohen, 2001, p. 45). The RSS coordinated opposition to the British Raj according to its stated goal of uniting the Hindu community and fought Muslim efforts to break away and form their own state. Central to the RSS's ideology is the notion of *Hindutva*, which they interpret as the struggle to return to India's Hindu roots and restore the country to its former splendor (Das, 2003; Nanda, 2007). *Hindutva* is expressed in Hindu nationalist discourse most frequently through the statement 'one nation, one culture, one people'—seeking to place Hindu identity at the center of what it means to be Indian (Das, 2003, p. 85).

Members of the RSS founded the Bharatiya Jana Sangh (BJS) in 1951 as a right-wing nationalist party. The BJS was most successful as a member of the Janata Party coalition which wrested control of the Lok Sabha from Indira Gandhi's INC for the first time in 1977. That year, Atal Bihari Vajpayee, (future leader of the BJP), was appointed as minister of external affairs by the coalition government. After the dissolution of the Janata Party, the BJS was reconsolidated into the Bharatiya Janata Party in 1980 (Cohen, 2001). Although steadily enlarging its share of seats in the Lok Sabha and voter base across the country, the BJP did not lead a coalition government until 1998 (Perkovich, 1999). That coalition, the National Democratic Alliance (NDA), continued until its defeat in 2004. Almost immediately after its rise to power in 1998, Vajpayee's government began planning for a nuclear test, and in May of the same year, five separate nuclear tests were conducted on the orders of the prime minister (Abraham, 1998).

The BJP and RSS have been accused of inciting religious violence repeatedly throughout their history.  At the end of the 1980s, the BJP and the RSS became involved in a movement calling for the construction of a Hindu temple at the site of believed by some Hindus as the birthplace of Rama, a site occupied by the Babri Mosque built in 1527 (Cohen, 2001, p. 120).  In 1992, a rally organized by BJP and RSS leaders turned into a riot in which mobs of thousands Hindu nationalists destroyed the mosque, triggering sectarian riots across India.  The BJP was able to turn the sectarian tensions into a substantial electoral victory, and expanded its seat count in the 1996 elections.

Central to the ideology of the BJP is the afore-mentioned concept of *Hindutva.*  This ideology understands Indian identity in terms of religion and geography, equating Indian identity with Hindu identity (Chaulia, 2002).  The concept of *Hindutva* received guidance from the two-nation theory, which holds that the primary identity of Muslim residents of the Indian Subcontinent is their religion, a view which led to the partition of India.  Today, this understanding of identity continues to fuel Hindu suspicion of Indian Muslims' patriotism and sympathies for Pakistan and equate Indian citizenship with Hindu religious identity.  BJP senior leader L.K. Advani states:

> Democracy and liberalism as preached by Nehru are denuded of their Indianness…I believe that India is what it is because of its ancient heritage—call it Hindu, or call it Bharatiya (Indian).  If nationalism is stripped of its Hinduism, it would lose its dynamism (Das, 2003, p. 85).

The BJP's founders strongly criticized the non-violent base of Gandhian/Nehruvian ideology. M.S. Golwalkar, one of the founders of the RSS, for example, rejected the Gandhian practice of *ahimsa* on the grounds that "every Hindu god is armed" (Chaulia, 2002, p. 220). Sometimes this criticism uses sexual or gendered language. For example, in October 1964, in its weekly party periodical, *Organiser,* the BJS wrote that:

> ...the eunuch government decided years ago in its *ahimisic* idiocy to spend *crores* on nuclear power but not to use the same *crores* on developing the nuclear bomb. We had the chance to do it before China did it...In our criminal folly we missed it" (Poulose, 1978, p. 105).

For BJP ideologues, the trajectory of Indian history is seen through the lens of the Hindu-Muslim conflict. They view the Muslim "other" through a post-colonial lens, creating an oppositional Hindu identity. BJP adherents use similar language to speak of both British colonialism and the Muslim Mughal Empire which reigned in India for roughly 300 years (Das, 2003). In order to return to the golden Vedic age, they argue, the forces of hegemony—whether colonial or Muslim—must be struggled against (Das, 2003).

Overall, Hindu nationalist adherents merge this narrow definition of Indian identity with a strong realist perception of force and the nature of international relations. Cohen upholds Vajpayee as an example of this synthesis:

> Vajpayee was once a member of the RSS and still attends RSS functions, where he is widely revered. But he is also a political and

strategic realist, able to force workable alliances at home with

disparate partners and improve relations with a wide variety of

states hitherto regarded as anathema, among them the United

States (Cohen, 2001, p. 47).

Overall, these two distinct perspectives have left their mark on Indian

foreign policy.  In the next section, the role conceptions held by Nehruvian and

Hindu nationalist leaders will be presented, after which their nuclear decision-

making will be evaluated.

## 5.5.  National Role Conceptions in Indian Foreign Policy

In this chapter's final section, I propose national role conceptions for

Indian foreign policy relevant to the area of nuclear weaponry.  First, the national

role conceptions for India as assigned by Holsti (1970) and Chafetz et al. (1996)

will be discussed in detail, followed by my own modified role conceptions.  Then

the model is traced throughout the Indian case and the hypothesized policy

outcomes are discussed.

*Role Scholarship on India*

In his 1970 paper, Holsti finds evidence for three roles for India: *regional*

*leader, subsystem leader, active independent, liberation-supporter, mediator-*

*integrator, independent,* and *internal developer* (pg. 276).  The *regional leader* is

described as a state which understands "special responsibilities for itself" within

the context of its region (Holsti, 1970, p. 261). Holsti lists Egypt, Japan, Ethiopia, the United Arab Republic, and France as expressing this role conception (1970). The *subsystem leader* NRC is closely related—according to Holsti, subsystem leaders seek to gather states not around a common bond of geography, but rather by a particular ideology or issue which transcends the Cold War bloc structure (1970).

The *liberation supporter* conception is defined as having a foreign policy guided by anti-colonial attitudes and ideological principles. At the time of Holsti's writing (1970), this characterized "most African, Asian, and Communist states in the sample", including India (Holsti, 1970, p. 296). The *mediator-integrator* NRC, on the other hand, emphasizes its national role within historical and cultural context, history of not participating in conflicts, and geographic location (Holsti, 1970, p. 296). Holsti lists India, Lebanon, and Sweden as examples of this type (1970).

Holsti characterizes the *Internal Developer* as being focused on its socio-economic needs and perceiving threats through unwelcome foreign involvement in its chosen development strategy. In addition to India, Holsti lists Brazil, Finland, Indonesia, and Pakistan as displaying developer tendencies (Holsti, 1970, p. 297).

The last and most broad role that Holsti assigns India is that of *Independent*. Independent states emphasize the preeminence of their own interests in foreign policy making, rather than doing the bidding of other states. In pursuing this "policy self-determination", independent states generally are identifying with the non-aligned movement in some way (Holsti, 1970, p. 268).

He lists the sources of this role as anti-bloc or anti-colonial sentiments, economic needs, and threat perception and holds up most of the Non-Aligned Movement as examples (Holsti, 1970, p. 297).

As has been stated in the methodology chapter, the role-based typology employed by Chafetz et al. (1996) takes a modified set of Holsti's roles and categorizes them as leading towards, away from, or having no effect on, nuclear proliferation. They identified the *Regional Leader, Global System Leader, Regional Protector,* and A*nti-Imperialist* role conceptions as tending towards nuclear status, with *Independent* having no correlation with proliferation (Chafetz et al., 1996, p. 734). The main factor behind their identification of proliferation-prone roles was the perception of some states of nuclear weapons as a symbol of global leadership as modeled by the "legal" nuclear weapons states (Chafetz et al., 1996, p. 733).

Chafetz et al. classify India as a *regional protector*, r*egional leader* and a*nti-imperialist* (Chafetz et al., 1996, p. 733). They describe the function of the *regional leader* as "providing leadership in a delimited geographic or functional area" and list Brazil, Argentina, Libya, Iran, and Iraq as examples of states displaying that conception (Chafetz et al., 1996, p. 734). The *anti-imperialist* is described as acting as an "agent of struggle against imperialist threats" and Iran, North Korea, Iraq, India, and Libya are listed as examples (Chafetz et al., 1996, p. 734). The national role conceptions attributed to India by Holsti and Chafetz et al. are listed in Table 8 below:

**Table 8: Summary of Indian NRCs from (Holsti, 1970) and (Chafetz et al., 1996)**

| Role Type | Role Description | Source |
|---|---|---|
| Regional Leader | Provide leadership in delimited geographic or functional area | (Chafetz et al., 1996; Holsti, 1970) |
| Regional Protector | Provide protection for adjacent regions outside of immediate neighborhood | (Chafetz et al., 1996) |
| Anti-Imperialist | Act as agent of struggle against imperialist threats | (Chafetz et al., 1996) |
| Internal Developer | focused on socio-economic needs; perceiving threats through foreign involvement | (Holsti, 1970) |
| Subsystem Leader | Unite states based on ideology or issue which transcends the Cold War bloc structure | (Holsti, 1970) |
| Liberation Supporter | guided by anti-colonial attitudes and ideological principles. | (Holsti, 1970) |
| Mediator-Integrator | historical and cultural context, history of not participating in conflicts, geographic location | (Holsti, 1970) |
| Independent | "self-determined foreign policy"; preeminence of own interests in foreign policy making | (Holsti, 1970) |

I argue that these conceptions, while valuable, are not specific enough to yield insight into why India pursued the nuclear trajectory that it did. Specifically, the role concepts cited by (Holsti, 1970) and (Chafetz, et al., 1996) do not adequately explain why India first detonated a PNE before finally weaponization after the 1998 tests. Specifically, these roles do not take into consideration the unique domestic dynamics present in the Indian case and how they approach the nuclear issue from fundamentally different positions. I argue that the Nehruvian and Hindu Nationalist perspectives' differing views on Indian identity are reflected in their NRCs and therefore in the nuclear policy pursued by the two governments. In the next section, these NRCs are discussed.

*Indian National Role Conceptions*

Indian policymakers have held a variety of national role conceptions for their nation over the years. In this section, I present three Nehruvian roles (Asian standard bearer, Leader of the NAM/third way, and internal developer), and one Hindu Nationalist role (autonomous power center).

Asian Standard Bearer

Nehru's conception of Indian regional identity was one of a "standard-bearer" for Asia in the post-colonial era. Nehru expressed his vision of India's role in Asia at the convening of the Asian Relations Conference in March 1947:

> All countries of Asia have to meet together on an equal basis in a common task and endeavor. It is fitting that India should play her part in this new phase of Asian development. Apart from the fact that India herself is emerging into freedom and independence, she is the natural center and focal point of the many forces at work in Asia. Geography is a compelling factor, and geographically she is situated as to be the meeting point of Western and Northern and Eastern Asia and Southeast Asia (SarDesai, 2008, p. 428).

Nehru saw this location for India as crucial given that the formerly colonized peoples of Asia were prevented from engaging in discourse with one another because of their imperialist overlords.

> India has always had contacts and intercourse with her neighbour countries....[w]ith the coming of British rule in India these contacts were broken off and India was almost completely isolated from the

rest of Asia....[t]his Conference itself is significant as an expression of that deeper urge of the mind and spirit of Asia which has persisted in spite of the isolationism which grew up during the years of European domination (Abraham, 2008, p. 199).

For Nehru (until 1959), India and China had a unique roles to play in introducing these formerly isolated states to each other and fostering regional unity and cooperation for development and representation in the international system.  This policy was hit hard by the tensions with China over Tibet and the 1962 Indo-Chinese War.  Still, the discourse of India's geographic location as a focal point of Asia has continued to the present day.  India has been quick to assert its pre-eminence over South Asia, exercising considerable sway over the domestic politics of states in the immediate region, like Bhutan and Nepal (Mehta, 2009, p. 216).

Leader of the NAM/Third Way

For Nehru and his successors, India was destined to be a great power on the world scene.  He described India achieving its independence as a "major consequence in world history" (Nizamani, 2000, p. 27).  The route to recognition of this status led through the leadership of the non-aligned group of countries. Nehru believed that by providing a third way alternative to the bipolar Cold War bloc system, India could catalyze support from other emerging nations and gain widespread recognition for its rightful place in the world.  In a fiery speech to the Bandung Conference in 1955, he condemned memberships in blocs and asserted Indian self-reliance in foreign affairs:

I am afraid of nobody. I suffer from no fear complex; my country suffers from no fear complex. We rely on nobody except the friendship of others; we rely on ourselves and none others [sic].... Am I to lose my freedom and individuality and become a camp follower of others? I have absolutely no intention of doing that (Abraham, 2008, p. 206).

This anti-bloc sentiment took the form of an independent expression of Indian self-interest. Nothing could be more detrimental to India "than to become camp followers in the hope that some crumbs might fall from their table" (Sagar, 2009, p. 803). In presenting this third way in international relations, Nehru was also issuing an invitation to other emerging countries to follow India's lead into full statehood. Speaking at the Bandung Conference in 1955, he strongly condemned association with blocs or pacts:

If I join any of these big groups I lose my identity....It is an intolerable thought to me that the great countries of Asia and Africa should come out of bondage into freedom only to degrade themselves and humiliate themselves in this way. Well, I do not criticize these powers. They...know what is best for themselves (Abraham, 2008, pp. 206–207).

While Nehru's successors charted a more pragmatic course in the decades following independence, India has continued to stand for a non-aligned position in world politics, refusing to have its sovereignty constrained by membership or a close relationship with one of the superpowers.

Internal Developer

Both Nehruvians and Hindu Nationalists express the importance of autonomy in economic development. Nehru believed strongly that acquiring nuclear technology was the right path for energy-starved India, while vehemently condemning nuclear weapons and the threat of their use by their possessors (Abraham, 2009, p. 116). However, Nehru perceived technical dependency on the West as a supply for nuclear energy and military hardware as traps set for India by Western (read colonial) powers to keep it in a cycle of dependency. In fact, Hymans makes the point that this policy had undesirable consequences for India in its war with China: Nehru was opposed to expansion and modernization of the Indian armed forces in general, a policy which left the Indian military ill-prepared for the 1962 border war with China (2006).

Through harnessing the same Gandhian *swadeshi* self-reliance discourse as the Nehruvians, the BJP seeks to develop India's influence on the international stage largely through domestic investment in the economy and in national defense capabilities. For the BJP, a strong India means a resurgent, self-reliant economy, a well-equipped military, and domination of Pakistan in the region. This conception of India has been summarized by the BJP's own strategists as that of an "autonomous power center."

Autonomous Power Center

The primary role conception of BJP's policymakers is that of India as an "autonomous power center" (Ghosh, 1999, p. 354). According to the BJP's own manifestos, only a strong India will win the respect of the great powers:

"strength respects strength" (BJP, 2004). This realist language is employed by pro-bomb strategist K. Subrahmanyam in his book on perspectives on Indian security (quoted in Nizamani, 2000):

> The subcontinent is a strategic unity and India as the biggest nation has a special responsibility in ensuring the integrity of all states within the subcontinent especially against the inroads of extra-subcontinental powers (Nizamani, 2000, p. 49).

For the pro-bomb voices in India, the 1998 tests cemented India's status in the eyes of the region and world. Nizamani quotes Indian security analyst R. R. Subramanian:

> If [its] neighbors think that India should not act like a big brother in South Asia then they are living in a utopia because 'it does not occur to those who advocate that India should not behave as a great power that any other role for this country will not be credible' (Nizamani, 2000, pp. 49–50).

In June 1998, BJP Minister of External Affairs Jaswant Singh described the BJP's logic in acquiring a nuclear weapon, describing it as a symbol of power:

> We cannot have a situation in which some countries say, "We have a permanent right to these symbols of deterrence and of power, all of the rest of you…do not have that right. We will decide what your security is and how you are to deal with that security." A country the size of India—not simply a sixth of the human race, but

also an ancient civilization—cannot in this fashion abdicate its responsibility (Perkovich, 1999, p. 441).

For the BJP the bomb has been a focal point of their criticisms of the INC's policy of an '*ahimistic*' defense policy.  For Vajpayee, the bomb represented India's strength and a step to a reinvigorated emphasis on national defense.  In stating, "We have a big bomb now," Vajpayee was proclaiming to the world that India should be taken seriously as one of the elite nations with a full nuclear capability.  In his words after the test:

> Millions of Indians have viewed this occasion as the beginning of the rise of a strong and self-confident India.  I fully share this assessment and this dream.  India has never considered military might as the ultimate measure of national strength.  It is a necessary component of overall national strength.  I would therefore say that the greatest meaning of the tests is that they have given India *shakti*, they have given India strength, they have given India self-confidence (India Today, 1998).

In using the term *shakti* (Operation Shakti was also the name of the 1998 test shots), a Sanskrit religious term meaning energy or empowerment, Vajpayee was communicating how the nuclear tests at Pokhran symbolized his party's vision of a new and dynamic India.

Elsewhere, Vajpayee used the famous phrase "Jai Jawan, Jai Kisan" (Hail the soldier, hail the farmer), coined by PM Shastri during the 1965 war with Pakistan.  This phrase is very commonly used by Indian politicians in times of

war to rally public opinon, but Vajpayee added his own twist: "Jai jawan, jai kisan, aur jai vigyan" (Hail the soldier, hail the farmer, and hail [scientific] knowledge) (UNI, 1998). In the statement, all three concepts are being re-conceptualized as serving the security of the state—soldiers in armed combat, farmers in feeding the population during wartime, and scientific knowledge providing new weapons technology. Especially noteworthy is that Vajpayee made this statement during peacetime. This stance can be interpreted as being informed by the Hindu nationalist oppositional role conception with Pakistan. In the Hindu nationalist view, a strong India will command the respect of Pakistan. For Vajpayee and the Hindu nationalist camp, *Operation Shakti* represented the empowerment needed to propel India to achieve its aspirations at both the regional and international levels.

*A role-based model of Indian nuclear policy*

This final section of the chapter sketches out the "big picture" of the national role conception process in the Indian case and discusses its implications for the actual policy pursued by India during the period. The hypothesized role-based mechanism is discussed and the hypothesis for India is evaluated.

The inputs section of the model considered two sources policymakers draw from when forming national role conceptions—these were categorized as ideational and material. Material inputs were defined as decisionmakers' perceptions of their state's nuclear technical capability and security environment, whereas ideational inputs were defined as decisionmakers' perceptions of their state's national identity and cultural heritage.

With regards to technical capabilities, India progressed quickly and focused on acquiring autonomy in the nuclear fuel cycle. India benefited from the eagerness of developed countries to sell nuclear technology in the 1950s and 1960s, but was slowed down considerably when hit with sanctions after the 1974 tests. Still, Indian scientists were given a level of independence which allowed them to pursue the solidification of the policy of putting India technically within reach of quickly building and testing a nuclear explosive when the political directive came. This technical competency and the close relations between the Prime Minister and the leader(s) of the scientific establishment meant that the PM was able to make nuclear decisions in confidence that the technical capability did indeed exist. The technical capability acquired and maintained by India's scientists enabled the "nuclear option" discourse of the 1980s and 90s.

From the perspective of the security environment, India's viewpoint has been shaped by several key events. India fought two wars in the 1960s, one with China in 1962 and one with Pakistan in 1965. This history with China and Pakistan has resulted in an understanding that it must build up its material capability and prevent great power intervention in the region. The Brasstacks crisis of the late 1980s shifted the debate from the philosophical and moral implications of nuclear weapons to a debate over the security threat and whether India should acquire weaponized nuclear capability. This debate intensified throughout the 1990s until the tests of 1998.

In the timeframe of analysis, two main ideological perspectives have dominated the Indian political landscape. The Nehruvian worldview is based on

a secular identity for India, one that emphasizes scientific progress and development. Nehru believed that India became a "slave country" when its development level vis a vis other states lagged—therefore the way forward in the 20th Century was through rebuilding Indian science to serve development goals. Nehru and his followers see India as a moral great power in the world, speaking out for disarmament and against interventionism in world politics. Hindu nationalists, on the other hand, view the world through a civilizational and religious lens. Their *hindutva* ideology envisions 'one nation, one culture, one people' and places Hinduness at the heart of what it means to be Indian.

Indian policymakers draw on these inputs in forming their conceptions about what role their nation should play in the international arena. These roles are repeated in Table 9 below:

**Table 9: Indian Nuclear Policy NRCs**

| Role Type | Role Description |
|---|---|
| Asian Standard Bearer (Nehruvian) | fostering regional unity and cooperation for development and representation in the international system |
| Leader of the NAM/Third Way (Nehruvian) | Serve as example to emerging nations; Activism against imperialism and bloc structure; Function as rally point for smaller 3rd World nations |
| Internal Developer (Nehruvian) | focused on socio-economic needs; perceiving threats through foreign involvement in domestic economy |
| Autonomous Power Center (Hindu Nationalist) | Independent world power grounded in dominance of region; command the respect of other world powers |

These role conceptions have implications for the course set by Indian policymakers when it comes to nuclear decisionmaking. Nehru's conception of India as a standard bearer for Asia in the international system became largely irrelevant after the war between India and China in 1962. India's total defeat at

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the hands of the Chinese in 1962 showed the region that Indian rhetoric was not backed by military might. This role conception gradually merged with the general understanding of India's role in its immediate region. During the decade of the 1950s when this role conception was active, however, the Indian nuclear establishment was making swift progress towards acquiring nuclear technology, operating the first research reactor in the continent of Asia and signing deals with multiple countries for technology transfer. Overall, this role conception did not directly affect Indian progress towards the bomb, but rather established the groundwork for an understanding of India's place in the region which looked beyond its conflict with Pakistan towards a greater representative role. This role was challenged in 1971 by the USS Enterprise incident, which India perceived as an American attempt at blackmail during the Bangladesh War. The humiliation of that incident led Indira Gandhi to give the go-ahead for a nuclear test, which was then conducted three years later.

As the leader of the non-aligned movement, India sought to portray itself as an example to developing nations emerging from under colonial rule. Through virulent anti-bloc and anti-imperialist language, Indian policymakers of the Nehruvian tradition conceived of their country acting as a rally point for smaller nations in the opposition of the bipolar international structure during the Cold War. This opposition often took the form of condemning the threat of nuclear warfare by the nuclear-armed super powers, along with their attempts to cement their status as members of a legal 'nuclear club'. Still, in order to command such a leadership position, India needed symbols of its power. An atomic energy program, especially one developed independently by a recently-

colonized nation exercising "nuclear restraint" was a powerful symbol for Indian leadership of the anti-bloc group of countries.

As an internal developer, India was focused on its socio-economic needs; and interpreted foreign involvement in its economy as a threat to its sovereignty. The nuclear issue became connected with India's quest to lift millions of its citizens out of poverty by providing cheap electricity, not unlike many other states. Yet the development discourse in Nehruvian India took on a distinctly nationalistic tone in its connection with the *swadeshi* tradition of self-reliance and resistance to imperialism. For Indian policymakers, the impediment of the progress of their nation's nuclear program by the Western powers was seen in this context—encouraging, rather than inhibiting, continued progress towards acquisition of a PNE in the 1960s and 70s.

Elements of these Nehruvian role conceptions can be seen in the Hindu nationalists' conception of India as an autonomous power center. As an autonomous power center, India should behave as an independent world power grounded in the dominance of its immediate region and command the respect of other world powers. In dominance of its region, India should assert its superiority over Pakistan and present a self-confident and dynamic face to the world from a position of strength. For the BJP's policymakers, this strength emanates from the symbolism of nuclear weapons. To Vajpayee and the BJP, nuclear weapons were not just the status symbol of the rulers of the international order, but also represented the triumph of Indian scientists to domestically master one of the world's most difficult technologies. In their view,

only an India which has "exercised the nuclear option" can receive the respect it deserves from Pakistan and from the world at large.

*Evaluation of the Model*

Overall, the model illustrates several key aspects of the Indian case. Throughout the analysis, the contrast between the Nehruvian and Hindu Nationalist viewpoints, specifically in their understanding of Indian identity and its relationship to the world on the one hand and Pakistan on the other. From the Nehruvian perspective, India's future lay in understanding its multi-cultural past through a modernist and secular lens. Hindu Nationalists, on the other hand, conceive of Indian and Hindu identities as being virtually synonymous, and understand Pakistan in an oppositional frame of reference.

For both perspectives, their understanding of the trajectory of Indian history and its place in the world leads them to conclude that India should be recognized as a great power—a strong India commands the respect of the strong powers in the international system. The Hindu Nationalists, however, go further to define this conception of a strong India in terms of dominance of the region and Pakistan in particular. This has specific implications for the two perspectives' understandings of India's security environment. Nehruvian policymakers viewed the nuclear issue primarily as a message to send to the super powers about India's understanding of itself as an equal capable of "nuclear restraint". This resulted in the policy decision to go ahead with the "Smiling Buddha" test of 1974 while refraining from weaponization. In contrast,

the Hindu Nationalists were most concerned about sending a strong message to Pakistan and the world about Indian supremacy in the region.

In this thesis, I hypothesized that Indian nuclear policy could be split into two phases. In the first phase, a regional role conception dominated by an oppositional attitude towards the international system would result in attempts to acquire nuclear explosives for peaceful purposes, given the presence of sufficient technical capacity and the presence of a threat from a regional rival. This is seen in the lead-up to the Smiling Buddha tests of 1974. In the second phase, a regional role conception informed by oppositional relationships with both the regional rival and the international system at large would result in the decision to formally "enter the nuclear club" and weaponize the technology. This is observed in the case of the 1998 tests. These relationships are depicted in Figures 9-10 below:

**Figure 9: Relationship between hybrid oppositional and competitive regional role conception and nuclear weapons acquisition attempts**
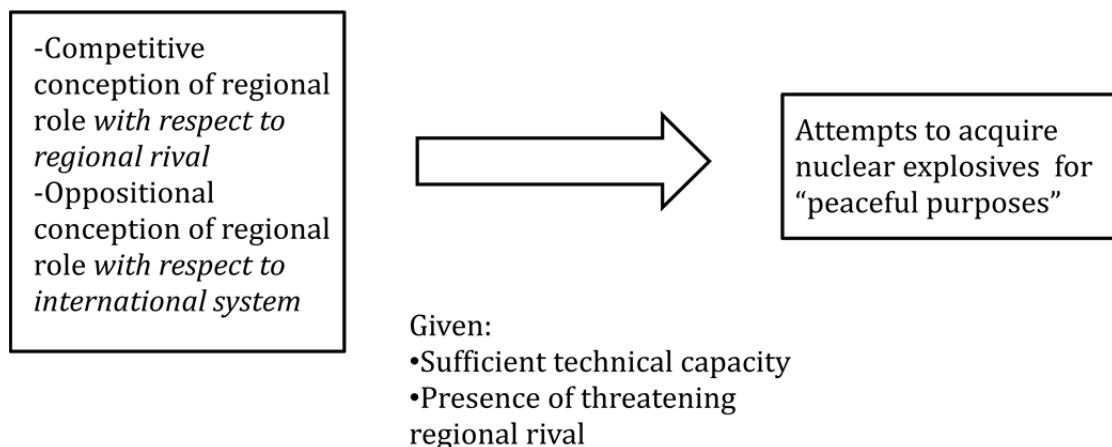
-Competitive conception of regional role *with respect to regional rival*
-Oppositional conception of regional role *with respect to international system*

Attempts to acquire nuclear explosives for "peaceful purposes"

Given:
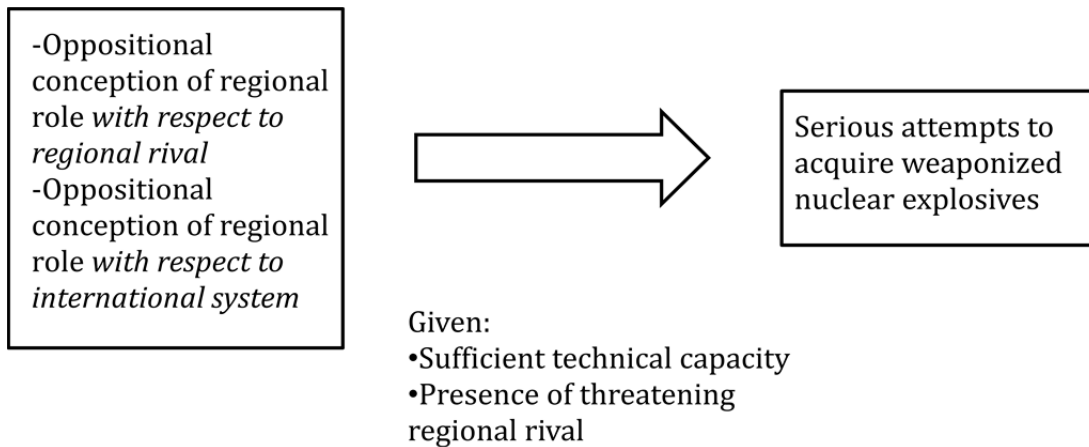•Sufficient technical capacity
•Presence of threatening regional rival

**Figure 10: Relationship between oppositional regional role conception and nuclear weapons acquisition attempts**



-Oppositional conception of regional role *with respect to regional rival*
-Oppositional conception of regional role *with respect to international system*

Given:
•Sufficient technical capacity
•Presence of threatening regional rival

Serious attempts to acquire weaponized nuclear explosives

In their conceptions of their country's role in the world, Indian policymakers were clearly focused on the international system and employed an oppositional attitude towards great power interference in their region. This was seen most clearly in the aftermath of the tumultuous decade of the 1960s, when Indian policymakers came to resent the United States' support of Pakistan and snubbing of India's dominant role in the region. The USS Enterprise incident demonstrated to Indian policymakers in 1971 that the United States did not respect Indian leadership in its region and was willing to resort to 'blackmail' in order to accomplish its policy goals. This proved to be a crucial decision point in the mind of Indira Gandhi, who ordered that the preparations for Smiling Buddha commence as a result of the incident. Still, after the test, there were no immediate efforts to weaponize the technology and the nuclear capability was strikingly absent from Indian foreign policy discourse for well over a decade (Frey, 2006).

Both Nehruvians and Hindu nationalists saw the Indian nuclear bomb as a symbol which supported their visions for their country in world affairs. For

Nehru, his daughter Indira Gandhi, and others, India's place in the world was one of being a normative power against colonialism and racialism. During the Nehruvian era of Indian foreign policy, India was active in both calls for disarmament and negotiations to achieve that end with the other nuclear powers. In this context, the 1974 "Smiling Buddha" PNE was a symbol of Indian technological capability, on the one hand, and of Indian restraint in the hope of a disarmament solution on the other. As Hymans (2006) and Perkovich (1999) both note, the 1974 detonation cannot be explained by India's threat perception from China or Pakistan, although those security inputs are important for setting the context. While China's first test was in 1964, Indira Gandhi did not make the decision to go ahead with preparing a PNE until 1972, and after the test, there was no effort to weaponize the technology. This shows that the 1974 detonation really was a continuation of the Nehruvian view of India achieving progress through a modernist emphasis on technology and science as an independent, self-reliant state.

In contrast, the Hindu nationalist policymakers who assumed power in 1998 held an oppositional understanding of India's regional role with regards to Pakistan. Merging religion-centered civilizational discourse with the logic of hard power in foreign relations, the BJP's leaders made exercising India's "nuclear option" a campaign promise. In ordering Indian scientists to prepare for the test, PM Vajpayee was sending a message about Indian power to both Pakistan and the other powers which had kept India out of the "nuclear club."

Indian desires for increased status in the world have witnessed a shift since the end of the Cold War. While the bipolar environment of the Cold War

enabled the formation of India's role as leader of the non-aligned bloc, the loose ties between the NAM's members and the eventual changes in the international landscape forced Indian policymakers to reassess the discourse of how their country should relate to the developing and developed worlds. From the discourse of the BJP, it is clear that a sizable corps of India's new generation of leaders view India's role in the world in terms of strength vs. strength with respect to its neighbors. Whereas the Nehruvian conception of state autonomy was directed primarily at preventing colonialist interventionism, the Hindu nationalist conception has shifted to a more direct challenge of hegemonic authority. This shift in role conceptions is accompanied by a significant change in Indian nuclear policy, from one of ambiguity to one of institutionalization. This change is made possible by the contrasting symbolisms of nuclear weapons in the minds of both camps of Indian policymakers.

For Nehruvians, the bomb symbolized the capability of India's science and technology establishment, firm entrenchment on the moral high ground, and leadership of the "third way" of the Cold War. All of these symbolisms existed on the international stage, which can clearly be seen from the ambivalence of public opinion about the nuclear issue even after the 1974 tests. Indeed, ambivalence can also be seen at the highest level of Nehruvian policymakers, with a lack of decisive decision-making regarding the timeline of nuclear acquisition particularly evident in the examples of Nehru, and Indira Gandhi. For the Hindu nationalists, however, the bomb proved to be a powerful symbol on two stages: domestically, Pokhran II signified the BJP's resolve and supported their derogation of the INC's defense policy. Internationally, the 1998 tests were

intended to show India's aspirations to become an autonomous power center, a sign of the new "strong India" taking a stand against both Western hegemony and the oppositional Muslim threat in their own backyard.

# CHAPTER 6


# CONCLUSIONS AND IMPLICATIONS



In this final chapter, the findings and implications of the thesis research are discussed.  In this study, one country (Brazil) considered, but then abandoned, nuclear weapons, while another (India) first acquired nuclear weapons capability in 1974, but did not weaponize that technology until 1998, much later.  Leaders of both countries held understandings of their history and culture which put them at odds with the bipolar Cold War environment. Brazilian leaders perceived their country's relation with the world in terms of a North-South divide, one based on a discourse of industrialized core vs. dependent periphery in the world economy.  Indian policymakers, on the other hand, saw their state's relations with the international system as a continuation of its bitter experience with colonialism at the hands of a Western power.  Both states sought leadership in the world system based on these understandings: Brazil sought to promote itself as the voice of the global South to improve its position vis a vis the industrialized North,  while India situated itself as the leader of the non-aligned movement, placing itself as a model for other states emerging from under colonial rule.

Both states also experienced significant hardships due to underdevelopment, and development needs drove the foreign policies of both Brazil and India during the period of analysis. In addressing those development needs, however, India and Brazil refused to become dependent on the industrialized nations, opting instead for more costly domestic technology development strategies which emphasized state autonomy and independence. In the case of Brazil this occurred after an unwise technology transfer deal left the country dependent on West Germany and at the whims of the Ford and Carter Administrations' nonproliferation policies. Informed by the notion of *swadeshi*, or self-reliance, Indian policymakers were wary of being too dependent on foreign suppliers of technology, although without them the Indian nuclear program certainly never would have gotten off the ground.

In the case of Brazil, the aspirations of greatness which led the military regime to take steps towards developing a nuclear explosive were not shared by the wider domestic foreign policy community. In the case of India, however, a lively debate over the role of nuclear weapons and a pro-bomb lobby of sorts developed over the two and a half decades between its first and second nuclear tests. This pro-bomb activism was enabled by the oppositional senses of nationalism in the strategic community and the larger population as a whole. In contrast, the general population of Brazil had a negative bias towards any program of the military regime. President Sarney was able to justify the navy's enrichment program because of its contribution to national autonomy, a discourse that the other services' programs could not tap into as easily.

Overall, the methodological approach utilized in this thesis has yielded several important insights into the phenomenon of nuclear proliferation. First, this analysis has shown that viewing complex issues which involve questions of national identity such as nuclear proliferation, the national role conception is a powerful analytical tool because of its ability to include both material and ideational inputs in its description of the decisionmaking mindset of national leaders. Additionally, by bridging the divide between structural level discussions on strategy with domestic politics and individual agency, role theory shows promise for future studies on a wide variety of themes in international politics.

By establishing a comparison of two cases, this analysis provides several points for structuring a more effective non-proliferation policy. First, as Hymans points out in his 2012 book, starting an ambitious nuclear program is easy; creating the right environment for scientists to flourish and conduct the research needed is difficult (Hymans, 2012). This is not to discount the technical difficulty of the endeavor, however. Brazil tried and struggled mightily with many technical and institutional obstacles in its efforts to acquire the full nuclear fuel cycle, a project which remains incomplete today. India, on the other hand, experienced much more success, but was also more motivated and had an earlier start on acquiring technology when international controls were lax. This leads to the second point: the nonproliferation regime has made it much more difficult for a state to acquire a nuclear bomb today than it was 30 years ago. Even with a significant scientific base and extensive experience in the chemical industry, India took decades to develop the technology necessary for Smiling Buddha and Pokhran II. The enormous material and diplomatic costs of embarking on a

nuclear weapons program alone are enough to dissuade most states from beginning one.

Third, as Sagan (2011) points out, nonproliferation policy and scholarship have both focused on the supply side of the problem, seeking to understand which technologies need to be controlled and how to convince states not to acquire sensitive technologies which could lead to nuclear weapons. This thesis has attempted to show that a focus on the demand side of the proliferation problem yields much more meaningful results. Specifically, some discontented states perceive nuclear weapons as symbols of status and a guarantee that they will be taken seriously by the international community. A more effective nonproliferation policy would address the demand side of the equation as well as covering the spread of sensitive technologies. Specifically, the knowledge that states seek nuclear weapons not just as a solution to their insecurity problems but as status symbols should inform nonproliferation policy. Bilateral and multilateral efforts to address the question of status can relieve some of the threat of nuclear acquisition by dissatisfied states. Overall, comparing the cases of Brazil and India has yielded several policy-relevant points. These points will be briefly applied to the currently-unfolding case of Iran's nuclear program.

Iran's nuclear program has been in the international spotlight for many years. In August 2002, Iran was forced to admit that it had hidden facilities and activities from the IAEA in violation of its NPT obligations (Pabian, 2008, p. 234). This was followed by a 2006 announcement that Iran was going to begin enrichment of uranium (NTI, 2014a). In response, the Security Council has issued multiple resolutions and a US-led coalition has enacted crippling financial

sanctions on Iran. Current negotiations have been ongoing since the election of President Rouhani, who replaced Mahmoud Ahmadinejad in 2013. In September 2013, Presidents Rouhani and Obama held the first direct talks between US and Iranian leaders since the 1979 Islamic Revolution (NTI, 2014a). Following the model employed in this thesis, the material and ideational inputs of Iranian nuclear policy will be explored, followed by a discussion of possible routes for future events surrounding the Iranian nuclear program. In Table 10 below, the Iranian case is compared with Brazil and India:

**Table 10: Most Similar Systems Design Comparison of Iran with Brazil and India**

| | Brazil | India | **Iran** | Source(s) |
|---|---|---|---|---|
| General Industry/Technology | Sufficient | Sufficient | **Sufficient** | (Jo & Gartzke 2007) |
| Latent Nuclear Capability | Sufficient | Sufficient | **Sufficient** | (Jo & Gartzke 2007) (NTI, 2014a) |
| Sensitive nuclear assistance | West Germany, United States | Canada, United States | **West Germany (pre-1979) Russia** | (Solingen 1993) (NTI, 2014a) |
| NPT Status | Late ratification (waited until 1998) | Unratified | **Ratified since 1970** | (UNODA, 2014) |
| Nuclear allies/security guarantees | None | None | **None** | (Solingen, 2007) |
| Desire for great power status/UNSC permanent membership | Yes | Yes | **No** | (Alden & Vieira, 2005) (Stuenkel, 2010, 2013) |
| Regime type | Military dictatorship (until 1985); Democracy | Democracy | **Mixed nondemocracy** | (Barletta, 1997) (Cohen, 2001) (Weeks, 2008) |
| Threat from nuclear-armed neighbor | No | China (1970s) Pakistan (1990s) | **Israel United States** | (Hymans 2006, 2012) (Perkovich, 1999) |
| Neighbor with threatening nuclear power program | Yes (Argentina) | Yes (Pakistan) | **None** | (Doyle, 2008b) |
| History of colonialism (date of independence) | Portugal (1822) | Great Britain, Portugal (1947, 1961) | **Great Britain intervention** | (Levine, 1999) (Cohen, 2001) (Kinser, 2007) |
| Demographics: Multi-ethnic, multi-cultural populations, unequal income distribution | Yes | Yes | **No** | (Levine, 1999) (Cohen, 2001) (CIA, 2014b) |
| BRICS designation | Yes | Yes | **No** | (Tett, 2010) |
| Nuclear Test(s) | None | 1974, 1998 | **None** | (Perkovich, 1999) |

*Material Inputs*

On the technical side, Iran has experienced much difficulty with its nuclear program since Khomeini ordered its restarting in 1984 (NTI, 2014a). Still, despite opposition from the United States and difficult working conditions, Iranian scientists have acquired uranium mining, milling, conversion, and enrichment capabilities (NTI, 2014a). Iran has reportedly experienced a long string of problems with the IR-1 centrifuge, a design purchased from the AQ Khan network and notorious for frequent breakage (Albright & Walrond, 2011). This and other vulnerabilities were infamously exploited by the Stuxnet computer virus, designed by the CIA and Israeli intelligence sometime after 2006. The Stuxnet virus attacked the industrial control systems which regulated the banks of centrifuges, causing them to overspin and shatter (Langner, 2013). On the human resources side, Hymans cites the impact on the project of ideological purges of technical experts in the Iranian economy in the aftermath of the 1979 revolution, in which a 'skilled workforce was replaced with a loyal workforce' (Hymans, 2012, p. 258). He suggests that it is likely that the nuclear research community experienced such personnel replacements and that this has delayed the program significantly. He concludes that "there is no other reasonable interpretation that but that this has been an extremely inefficient project" (Hymans, 2012, p. 258).

From the perspective of Iran's security environment, the outlook is bleak. The United States worked to isolate Iran on the world stage ever since the 1979 revolution. In 2001 the US invaded Iran's eastern neighbor Afghanistan, followed in 2003 by Iran's neighbor to the west, Iraq. While Iran certainly welcomed the overthrow of the Taliban and Saddam Hussein, the prospect of

being surrounded by thousands of American soldiers obviously did not please Iranian leaders (Parsi, 2012). Iran and Israel have traded threats and the prospect of an Israeli airstrike was only recently averted with an agreement that began the current round of talks in 2013 (Simpson & Levs, 2013).

Iran is also embroiled in the Syrian Civil War (ongoing since 2011) and its major allies in the region (former Iraqi PM Nouri al-Maliki, Syrian President Bashar al-Assad, and Hezbollah) have all experienced significant turmoil in recent years. In addition, the withering sanctions regime has taken its toll on the Iranian economy, with 85% of Iranians reporting that sanctions have hurt them personally in a Gallup poll in May-June 2012 (Loschky, 2013).

*Ideational Inputs*

On the ideational side, Iranian policymakers can draw on a proud tradition of nationalism which is larger than just the Islamic Republic. Heir to a long and storied history, modern-day Iranians express pride in their nation's nuclear program and support its continuation, even as sanctions take their toll on their livelihoods (Loschky, 2013).

Iran's Supreme Leader Ali Khamenei issued a fatwa declaring production or use of weapons of mass destruction as *haram*, or forbidden in Islam (Eisenstadt & Khalaji, 2011, p. ix). Still, as Supreme Leader, he reserves the right to alter or reverse his previous fatwas and could invoke the "expediency" doctrine of Ayatollah Khomeini, which equated the survival of the Islamic republic with the highest level of religious values (Eisenstadt & Khalaji, 2011, p. ix).

When examining Iran's understanding of its regional role, it is clear that Iran has an oppositional understanding of its relationship with its region and with the international system outside of its region. Iran holds oppositional conceptions of its regional identity with respect to its multiple regional rivals: Iraq (Saddam-era), Saudi Arabia, and Israel. The Iranian perspective on the international system is also oppositional, having experienced the consistent efforts of the United States to stack the tables against Iran and isolate it on the world stage.

This analysis has several implications for the outcome of the Iranian case. First, like in the case of India, Iranian policymakers perceive the structure of the nonproliferation regime and the IAEA itself to be merely tools of the nuclear-armed West. A policy of standing up to this imbalanced and unfair order is consistent with anti-imperialist and anti-Western discourse in Iran. Iranian leaders likely view their program as "teaching the West a lesson" (Frey, 2009, p. 210).

Any attempts to diffuse the tension over Iran need to acknowledge and take into account the isolated and threatened security environment of Iran, given its current situation. While Iran can be brought to its knees through sanctions, isolation, and even military action, it is likely that these tactics could backfire, pushing Iran into a situation where it would withdraw from the NPT and seek a nuclear weapon in the event of an attack.

This thesis has been based on a simple premise—that the value of nuclear weapons extends far beyond their material utility; nuclear weapons are potent symbols of power in the international system. While the vast majority of states experience threats from other states, only a select few have pursued nuclear weapons, and even fewer have actually achieved a weaponizable capability. These states frequently justify their programs not just through the typical security-based explanations, but also through reference to notions of national grandeur and aspirations for status. Modern nation-states which consider themselves as heirs to civilizations may use this discourse to support their nuclear ambitions. By incorporating these factors, the model is able to set nuclear decisionmaking in a wider context while retaining a degree of methodological parsimony. Nonproliferation scholarship has generally undervalued the motivations of proliferative states in favor of focusing on the acquisition of technical capabilities. Additional research on the motivations and worldviews of these states' leaders and elite policymakers will be able to inform more effective policy and help identify the next generation of potential proliferators.

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