

INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

U·M·I

University Microfilms International
A Bell & Howell Information Company
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA
313/761-4700 800/521-0600

Order Number 9417485

**The role of belief systems in shaping nuclear weapons policy
preference and thinking in Brazil**

Krasno, Jean Elizabeth Cullander, Ph.D.

City University of New York, 1994

Copyright ©1994 by Krasno, Jean Elizabeth Cullander. All rights reserved.

U·M·I
300 N. Zeeb Rd.
Ann Arbor, MI 48106

A

THE ROLE OF BELIEF SYSTEMS IN SHAPING
NUCLEAR WEAPONS POLICY PREFERENCE AND THINKING IN BRAZIL

by

JEAN ELIZABETH CULLANDER KRASNO

A dissertation submitted to the Graduate Faculty in Political
Science in partial fulfillment of the requirements for the
degree of Doctor of Philosophy, The City University of New
York

1994


1994
COPYRIGHT

JEAN ELIZABETH CULLANDER KRASNO

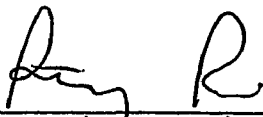
All Rights Reserved

This manuscript has been read and accepted for the Graduate Faculty in Political Science in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

1/21/54
Date


Chair of Examining Committee

1/27/54
Date


Executive Officer

Prof. Kenneth Erickson

Prof. Benjamin Rivlin

Prof. Asher Arian

Dr. Arthur Goldberg

Supervisory Committee

THE CITY UNIVERSITY OF NEW YORK

Abstract

THE ROLE OF BELIEF SYSTEMS IN SHAPING
NUCLEAR WEAPONS POLICY PREFERENCE AND THINKING IN BRAZILby
Jean KrasnoAdviser: Professor Stanley Renshon
Reader : Professor Kenneth Erickson

This study examines motivations behind the decisions of national leaders to pursue or not to pursue the development of nuclear weapons. The research, which builds upon work done in the field of Political Psychology, was conducted in Brazil and focuses on the role that belief systems play in shaping policy preferences and thinking by members of the Brazilian elite on nuclear issues.

The data were gathered in Brazil through in-depth interviews and a questionnaire administered to members of the Brazilian elite who belong to groups which have input in forming policy. Proliferation studies, generally, have concentrated on the acquisition of nuclear technology and have rarely studied motivations which contribute to the demand for these weapons. Research on beliefs and policy formation suggests that beliefs and values should be expected to play a role in shaping nuclear policy.

The results show that beliefs about status, power, competition, and moral considerations do correlate very

significantly with policy thinking on nuclear issues and therefore sustain the hypothesis of this study. However, the findings on worldview do not significantly correlate with nuclear policy thinking and therefore do not sustain the prevailing hypothesis on that relationship.

The Role of Belief Systems in Shaping
Nuclear Weapons Policy Preference and Thinking in Brazil

TABLE OF CONTENTS

<u>CHAPTER ONE: BELIEFS AND POLICY THINKING</u>	1
I. The Purpose of the Research	1
II. A Review of Previous Research on Belief Systems	3
III. Political Beliefs and the Operational Code Studies	18
IV. Conclusion	29
 <u>CHAPTER TWO: THE CHOICE OF BRAZIL AS A CASE STUDY</u>	 33
I. Brazil and Nuclear Proliferation	33
II. Brazil's Nuclear Weapons Development Program	48
III. The Brazilian Military	55
IV. Present Economic, Social, and Political Conditions in Brazil	63
V. Possible Incentives or Disincentives for a Brazilian Bomb	69
 <u>CHAPTER THREE: THE METHODOLOGY</u>	 72
I. General Logistics	72
II. Determining the Sample	73
III. The Data Collection Process	78
IV. The Interviews	79
V. The Questionnaire	84
VI. Accessibility of Subjects	88
VII. Content Analysis vs. a Direct Questionnaire and Interview	89
 <u>CHAPTER FOUR: BELIEFS ABOUT CONFLICT AND HARMONY: THE INTERVIEWS</u>	 91
I. Worldview and the "Master Question"	92
II. Evidence of Worldview From the Interviews	94
III. Evidence of Problems With the Operational Code Assumptions	103
IV. The Usefulness of Worldview in Predicting Policy Thinking	118
V. Conclusion: Worldview Does Not Predict Policy Thinking	132
 <u>CHAPTER FIVE: BELIEFS ABOUT CONFLICT AND HARMONY: RESPONSES TO THE QUESTIONNAIRE</u>	 137
I. Beliefs in the International Sphere	138
II. Beliefs in the Personal Sphere	143

III. Beliefs in the National Sphere	144
IV. The Relationship Between Beliefs On Conflict and Harmony and Policy Thinking	148
<u>CHAPTER SIX: PRESCRIPTIONS FOR BEHAVIOR: THE INTERVIEWS</u>	168
I. Beliefs About Power	172
II. The Role of Status and Prestige	194
III. The Interaction of Power and Status	197
<u>CHAPTER SEVEN: PRESCRIPTIONS FOR BEHAVIOR: RESPONSES TO THE QUESTIONNAIRE</u>	199
I. Answers to the Questions on Power	200
II. The Correlation Results on Power	209
III. Status	217
IV. Beliefs About Competition and Cooperation in Response to the Questionnaire	222
V. Conclusion	230
<u>CHAPTER EIGHT: AN ANALYSIS OF THE POLAR POSITIONS</u>	236
I. The Study of Contrasting Groups	236
II. The Power and Status Indexes	240
III. The Conflict/Harmony Index	248
IV. The Competition/cooperation Index	249
V. The Trust Index	252
VI. Index Summary	254
<u>CHAPTER NINE: PATTERNS EMERGING FROM THE QUESTIONNAIRE WHICH INDICATE CONVERGENT BELIEF SYSTEMS</u>	258
I. Threat	259
II. Trust	273
III. Military Expenditures	280
IV. Control	282
V. Power Relationships	288
<u>CHAPTER TEN: MORAL CONSIDERATIONS</u>	301
I. The Moral Dilemma	301
II. Moral Considerations as They Were Discussed in the Interviews	305
III. Moral Considerations From the Questionnaire	316
IV. The Moral Index	322
<u>CHAPTER ELEVEN: CONSISTENCY WITHIN BELIEF SUB-SYSTEMS</u>	325
I. Belief Systems	325
II. Analysis of Cognitive Consistency from Responses to the Questionnaire: Power, Status, Competition/cooperation, Moral Considerations, Trust, Conflict/Harmony, Threat, Control, Trust	329

<u>CHAPTER TWELVE: CONCLUSION: THE PREDICTIVE VALUE OF POLITICAL BELIEFS AND POLICY IMPLICATIONS</u>	362
I. Belief Systems and Policy Thinking	362
II. Patterns of Policy Thinking	364
III. Implications for Brazil	369
IV. Military Thinking and the Brazilian Military	388
V. Implications for Non-Proliferation	393
 <u>APPENDIX</u>	 401
 <u>BIBLIOGRAPHY</u>	 424

LIST OF TABLES

<u>TABLE</u>	<u>PAGE</u>
<u>CHAPTER FOUR</u>	
4A	95
4B	98
4C	102
4D	109
<u>CHAPTER FIVE</u>	
5A	139
5B	140
5C	141
5D	142
5E	145
5F	145
5G	154
<u>CHAPTER SEVEN</u>	
7A	201
7B	202
7C	204
7D	205
7E	205
7F	210
7G	218
7H	219
7I	223
7J	227
<u>CHAPTER EIGHT</u>	
8A	242
8B	246
8C	250
<u>CHAPTER NINE</u>	
9A	261
9B	267
9C	270
9D	275
9E	276
9F	281
9G	284
9H	289
9I	291
9J	295
9K	297
<u>CHAPTER TEN</u>	
10A	318
10B	320

CHAPTER ELEVEN

11A	333
11B	338
11C	343
11D	349
11E	351

Chapter One

BELIEFS AND POLICY THINKING

I. The Purpose of the Research

The spread of nuclear weapons to various nations on different continents increases the threat already posed by existing nuclear arsenals. As decision makers of each nation contemplate their national security needs, what is the thinking process which leads them to choose or not to choose the nuclear option? This study builds on work previously conducted in the field of Political Psychology.¹ It examines whether or not beliefs shape policy thinking on nuclear weapons issues, and if so, what is the nature of that relationship. It is hoped that this examination will facilitate a greater understanding of the thinking process which occurs when leaders decide to develop or not to develop nuclear weapons.

Two approaches to the examination of this process were formulated. The first examines the relationship between worldview, how people perceive the world around them, and nuclear policy thinking. The second approach examines how people evaluate the ways in which they interact with that world and how that evaluation relates to policy thinking.

¹) "There is a growing consensus that the focus of political psychology is on what happens when political and psychological phenomena interact." (Margaret G. Hermann, Political Psychology, 1986, p. 1)

Worldview represents beliefs about the world outside the person while beliefs about the importance of power, status, competition, and moral considerations deal with how a person perceives his or her interaction with that world.

Two hypotheses were developed for this research from these two approaches to the question. The first hypothesis posits that **BELIEFS WHICH CONSTITUTE A WORLDVIEW SHAPE POLICY THINKING**. Worldview here is described in terms of the amount of conflict or harmony there is perceived to be in the world; how much control one can have of events; whether those one must deal with are generally trustworthy or untrustworthy; and whether the world is a friendly or threatening place in which to live. The second hypothesis proposes that **BELIEFS ABOUT THE IMPORTANCE OF POWER, STATUS, COMPETITION, AND MORAL CONSIDERATIONS SHAPE POLICY THINKING**.

In addition, in an effort to trace patterns and connections in thought processes, the study also examines the consistency of beliefs from one sphere of thought to another. Questions were asked about beliefs across four different spheres: 1) beliefs about the nature of the social environment, 2) beliefs about Brazil's national political environment, 3) beliefs about international politics, and 4) beliefs about nuclear weapons issues. Answers to the questions on beliefs in spheres one, two, and three form the independent variables. Answers to questions in the fourth domain on nuclear policy options form the dependent variable

for the study. It was felt that beliefs which constitute a worldview would be consistent across the first three spheres and that these beliefs would correlate with beliefs on nuclear weapons issues. It was also felt that beliefs about the importance of power, status, competition, and moral considerations would be consistent across the three independent variables and would predict policy thinking on nuclear issues. The research tests these two hypotheses. An examination of the data confirms one of the two hypotheses and not the other. A discussion of the results will be presented in the following chapters.

II. A Review of Previous Research on Belief Systems

A. The Role of Beliefs in Shaping Policy:

Research so far indicates that belief systems play an important role in shaping attitudes and decisions on policy. (George 1969, 1979; Hopple 1979; Converse 1964; Putnam 1973; Paige 1977; Tetlock 1983; Walker and Murphy 1982; Walker 1990; Macridis 1989, and Jervis 1976, 1989). Stephen Walker (1990) explains that researchers who study the relationship between beliefs and policy maintain the following assumptions:

>Decision makers vary significantly in choice propensities, beliefs, and personality traits;

>These characteristics structure the decision maker's range of goals and shape the analysis of alternatives by the decision maker;

>Insofar as possible, a policy-maker's choices

are selected in a manner which is consistent with these principles and constitute the boundaries of rational behavior for the decision maker. (Walker, 1990, pp. 406-407)

Walker explains that the character and beliefs of different leaders vary from individual to individual and this variability plays a role in shaping decisions. Walker, Alexander George, and other researchers in the field of political psychology challenge the notion held by traditional political "realists" who claim that all political leaders act according to objective laws of human nature and will respond in a similar manner to the common constraints of the political world despite individual differences.

Gerald Hopple (in Falkowski, 1979, chapter 8) suggests that the question is not so much whether psychological variables are relevant, but how successfully do psychological factors explain behavior compared to other factors like job role and the constraints of the international system or the bureaucracy. He defines the psychological domain as having four basic features: 1) beliefs, assumptions about the world; 2) motives, needs and reasons for action; 3) decisional style, preferred methods of decision making; and 4) interpersonal style, modes of dealing with others. However, beliefs can play an even greater role than Hopple suggests. Beliefs are not limited to describing the world, but can also constitute assumptions about ways to satisfy needs and strategies for achieving goals.

Robert Putnam (1973) posits that beliefs have

implications across what he describes as the three broad categories that make up a society's political culture: 1) cognitive predisposition (view of the nature of society) is what people believe reality to be; 2) operative ideals (norms and values) are what people believe in or hope for based on faith; and 3) political style (ideological or pragmatic) is how they believe or what is the best strategy to achieve goals. For the study described in the following chapters, Putnam's "cognitive predisposition" is referred to as worldview. His "political style" becomes prescriptions for behavior based on the value given to specific behavioral processes like power and competition. Putnam's "operative ideals" did not play a major role in this study except in the value placed on the importance of moral considerations.² For Putnam, beliefs take on importance in their capacity to define events and situations for each person. Putnam's major premise is: "the character and development of a political system is conditioned by the system of empirical beliefs, expressive symbols, and values which define the situation in which political action takes place." Putnam, 1973, p. 2)

As Walker explains, beliefs held by the decision maker establish boundaries or shape the thinking and behavior of the individual and this may differ from person to person. Beliefs can perform several functions in establishing boundaries in the political decisional process. While beliefs are not the

²) These ideas will be discussed more fully below.

only causal variable in the political process, beliefs can help to:

- 1) define the situation indicating whether or not a decision is required (Janis and Mann, 1977);
- 2) set boundaries for the range of choices being considered whether conscious or unconscious; certain alternatives might be considered inappropriate e.g., taboo areas (Walker, 1990);
- 3) define a base of assumptions about the environment, e.g., is it conflictual or harmonious (George, 1969);
- 4) define the most effective means for dealing with the environment or the particular problem at hand (Walker, 1990; George, 1969, 1979);
- 5) establish goals e.g., what is believed to be important or highly valued (Putnam, 1973);
- 6) shape how the policymaker views the strengths and weaknesses of his position (George, 1980); and
- 7) implicitly shape what is and isn't perceived. If a belief system does not define or recognize certain elements, these elements may go unnoticed (Jervis, 1976). For example, if a decision maker is unaware of given national customs he may not perceive a symbolic gesture of conciliation or aggression in a negotiation process.

B. Defining Beliefs and Belief Systems

Beliefs are cognitions or thoughts about an individual's

world and his or her interaction with that world, which the person considers to be true. Belief systems are sets of interacting beliefs about the world. Philip Converse (1964, p. 207) defines a belief system as "a configuration of ideas and attitudes in which the elements are bound together by some form of constraint or functional interdependence." For example, the belief in the ability to trust one particular person (a parent) interacts with beliefs about trust in other people. A singular belief, "I can trust my mother all the time," becomes a part of a more complex system of beliefs about trust as beliefs are formulated about other members of the family and community and outsiders. Beliefs about trust may correlate with systems of beliefs about other aspects of the social environment i.e., whether the world is friendly or threatening; harmonious or conflictual.

Belief systems represent an attempt by each individual to bring order to disparate events in a manner which is useful in explaining and predicting phenomena allowing a person to function confidently in pursuing a secure existence. Just as beliefs about the physical world bring order and predictability to the ability to deal with the physical environment, beliefs about social life bring order and predictability to a person's relationship to the social environment.

C. The Structure of Belief Systems:

Milton Rokeach (1960) offers a very useful examination of the cognitive organization of belief systems. His study of the open and closed mind was an attempt to shed greater light on earlier studies by Adorno et al. (1950) on authoritarianism. Rokeach found that Adorno's studies, which concentrated on understanding fascism, did not differentiate between authoritarianism on the Left and on the Right of the political spectrum. Rokeach found that intolerance and rigidity could be found at both ends of the political scale and, therefore, must relate to something broader like closed-mindedness or dogmatic adherence to a specific creed or set of beliefs. This led him to examine belief systems in greater depth.

Rokeach explains that every belief system is asymmetrical and made up of beliefs and disbeliefs. What one believes to be true is a much more complex and differentiated system than what one rejects as false. For example, if a woman is a devoted Catholic, she will carry with her a complex set of Christian beliefs which can be applied to subtle situational differences. By contrast, she will probably know little or nothing about other religions particularly those which are furthest from her own, like Hinduism or Buddhism.

Rokeach explains that a belief system has several subsystems which may remain segregated from other parts of the system. This isolation of part of a system, or compartmentalization, explains why sometimes there appear to

be logically contradictory beliefs coexisting in the same system. He emphasizes that a belief system need not be logical.

Rokeach also describes the organization of beliefs along a central-peripheral dimension which has three layers:

- 1) Central region - basic understanding of the self and the nature of the physical and social world from personal experience.
- 2) Intermediate region - beliefs about the nature of authority and whom you can depend on to give you information about the world that you cannot acquire solely from personal experience.
- 3) Peripheral region - beliefs derived from authority figures i.e., teachers, religious leaders, experts, etc. which help to shape attitudes and opinions on the details of worldly life.

Rokeach found that an open-minded person has a higher level of differentiation³ in both belief systems and disbelief systems than a closed-minded person, a lower rejection level of disbelief systems, sees the world as friendly rather than threatening, and does not see authority

³) Rokeach uses the term "differentiation" here to mean having detailed, complex information about areas which the person believes to be true as well as areas which are not believed to be true. For example, an open-minded person would tend to have information about various religions even though only choosing to believe in one. A closed-minded person would tend to have only information about his or her chosen religion and would be uninformed about alternatives.

as absolute. By contrast, a closed-minded person has little differentiation within a disbelief system, has a high level of rejection of disbeliefs, sees authority as absolute, and views the world as threatening rather than friendly.

Rokeach describes beliefs as fulfilling two needs: first, to provide a cognitive framework in order to know and understand the world, and second, to ward off threatening aspects of reality. As the need to ward off threat becomes stronger, the cognitive need to know becomes weaker. Both needs can work together, but high levels of threat lead to dogmatism or closed-mindedness. People form closed systems to the degree to which they feel alone, isolated, helpless, and inadequate. In the extreme, the closed system is a total network of defense mechanisms organized together to form a cognitive system as a shield to protect vulnerability. (Rokeach, 1960, p. 68)

D. Consistency Among Beliefs

Whether or not people tend to maintain a consistency throughout their belief systems is a matter of controversy in the belief system literature. As discussed above, Rokeach found that compartmentalization of beliefs can lead to logical inconsistencies. Leon Festinger (1957), on the other hand, claims that people tend to strive for consistency among their beliefs and belief systems and may distort reality in order to hold onto beliefs that are highly valued. Research by Stephen

Kull(1988) found that inconsistencies in beliefs can lead to incompatible policy decisions. In his study of nuclear weapons policymakers, Kull discovered that on one level the interviewee would acknowledge that nuclear weapons were weapons of mass destruction but then, as if disregarding that premise, would develop policy that treated them like conventional weapons. In some cases the mind may purposefully isolate and protect particular beliefs from examination and comparison with reality for highly charged emotional reasons e. g., for self-esteem or the projection of power. A person may reject the notion that his or her parent was not a loving person, even in the face of evidence which showed the parent to be uncaring, indifferent, or even mean. The acceptance of not being loved, in this case, might be too painful. In other instances, inconsistency may arise simply because a person has not taken the time to readjust a subsection of a belief system to a new perception of reality. For example, a person has decided to change religions and is completely committed to the new religion, but still carries over some patterns of thinking and behavior from the previous religious doctrine without taking the time to re-examine these old thought patterns.

This study will explore the concept of consistency by tracing a belief through the four spheres developed in the research design. For example, beliefs about the importance of power and status will be examined as they relate to similar questions in the personal, national, international, and

nuclear policy spheres to see whether the responses to these questions are consistent from one sphere of thinking to another.

E. The Cognitive and Emotional Aspects of Beliefs

Beliefs have both an emotional as well as a cognitive aspect to them. Whether or not one believes that it is possible to trust others is both an organizational thought about the social world and an emotional reaction to previous experience. The content of a belief carries emotional weight.

Cognitive functioning is not separate from emotional functioning. This connection is often reflected in language. For example, sentences that begin "I think," or "I feel," or "I believe" can be followed by the same phrase e.g., "democracy is the best form of government," and mean basically the same thing. The three beginnings to the sentence reflect different aspects of psychological dimensions (cognitive, affective, and evaluative) which demonstrate the ability of these functions to become interactive.

Affect can shape cognition. Needs and emotions like love, self-esteem, and feelings of threat and vulnerability affect how we think. Rokeach's studies (1960) showed that high perceptions of threat and vulnerability led to closed-mindedness and dogmatism. While Rokeach emphasizes the impact of perceived threats to security in shaping beliefs, D. Winter

(1973) focuses on the value that individuals place on the acquisition of power in forming beliefs. Winter explains in his book The Power Motive (1973) that the motivation to achieve power shapes the way people think and make decisions. The results of the data collected on Brazilian elites in this study support Winter's hypothesis. The value that an individual places on the importance of power appears to shape policy preferences. The results will be discussed more fully in the following chapters. The work of both Rokeach and Winter indicate that emotionally charged predispositions relating to such things as security and values play a role in shaping beliefs.

Philip Tetlock (1973) conducted research on the cognitive structure of policy reasoning and whether some political groups are predisposed to reason in a more dogmatic, absolutist way than other groups, e.g., the rigidity-of-the-right. Tetlock, like Winter, posits that values have an impact on the way people think, or in other words, their cognitive style. Tetlock explains that how people think is powerfully shaped by fundamental values and tensions among these values. People with dogmatic cognitive styles are drawn to belief systems that are clear-cut and offer clear-cut solutions. Tetlock also explains that extremist groups need enemies in order to maintain in-group cohesion and identity. Tetlock's (1983) study of U.S. Senators showed a relationship between the ability to maintain cognitive complexity and open-

mindedness or liberalism. He found that conservatism correlated with dogmatism, intolerance of ambiguity, and cognitive simplicity. Tetlock's conclusion coincides with the work by Rokeach who found that dogmatism and closed-mindedness were correlated with a more simplistic, less differentiated style of thinking on both the far Right and Left.

Robert Putnam's studies (1973) on politicians in Britain and Italy demonstrated that there was no relationship between high scores on his ideological index and a willingness to compromise. In his study he defined ideology as a closed system of political beliefs. He tested to see whether ideologues adhere to rigid sets of beliefs and therefore have a rigid non-negotiable style or whether they are willing to compromise. He found that strong adherence to an ideology did not interfere with a politician's willingness to compromise. Putnam offers that ideology can form a framework for a more coherent and comprehensive policy and does not necessarily mean rigidity.

Tetlock (1984) questioned Putnam's results and re-examined Putnam's interviews using content analysis and a 7 point coding system. Tetlock found that the extremists on the Left and Right in Putnam's study were dogmatic in style. Tetlock's re-examination supports Rokeach's hypothesis that extreme closed systems of beliefs, whether on the right or left, correlate with dogmatism.

Rokeach's studies (1960) also showed a relationship

between the willingness to try different approaches (affective) and the ability to solve new problems (cognitive). In the "Doodlebug Problem" subjects were asked to solve a problem that was set up like a game. Those who were willing to try different approaches and were not rigidly committed to one way were able to solve the problem in significantly less time.

This research project seeks to contribute to the findings of these earlier studies. This study also examines emotionally driven beliefs. While it does not attempt to examine cognitive style, it does test the relationship between the importance of certain values and policy preferences. Like Winter's work, this study examines the relationship between the value placed on power and policy thinking. In addition, this study also looks at the importance of other emotionally charged values like prestige, competition, and moral considerations. The hypothesis here is that those respondents who believe that power, prestige, and competition are very important would also believe there is a greater need for enhanced security measures, which project power, including nuclear weapons. The following chapters will discuss these relationships and which of these beliefs predict policy thinking and which do not.

F. The Linkage Function of Beliefs

Alexander George (1979) posits that beliefs may be an

observable "nexus" between personality and behavior. He explains that central beliefs are more likely to influence decision making behavior than personality traits or attitudes. Unlike attitudes, central beliefs are concerned with fundamental, unchanging phenomena (George, 1979, p.99). According to George, beliefs are the expression of personality which can then be utilized by the individual to evaluate situations and select modes of behavior. Beliefs seem to fulfill various linkage functions. Belief systems appear to link the cognitive and affective aspect of personality as personal emotional experiences are translated into thought patterns about the world. People seem to be eager to express what they believe to be true about the world. In this way beliefs may be an observable manifestation of deeper emotions and needs which are less accessible and harder to assess. Belief systems seem to form a bridge between the subconscious (deep mental processes of which the individual may not be fully aware) and the conscious world (complete awareness). Beliefs appear to function as latent assumptions by reflecting the inner subconscious while also being capable of ready expression in a conscious form (Renshon 1989).

G. The Use of "Lessons" and the Formation of Beliefs

Also significant to this study is Alexander George's examination of how decision makers use historical analogies as "lessons" on which to base beliefs about the best strategy to

use in future events. (George in Art and Jervis, 1992, p. 464) According to George, people look at what has happened in the past and cite past events as examples of how to behave or not to behave under similar circumstances in the future. George uses as an example President Harry Truman's determination to demonstrate through his stand on Korea that he had learned a lesson from World War II not to appease aggression.

While lessons of history are an important means by which people learn the consequences of certain behavior, George warns that analogies are not always accurate and that other important factors may be involved which make the lesson unapplicable. However, the emotional response to an historical event (World War II) may be so strong that any similar event may evoke a need not only to avoid a dreaded event, but to rectify previous mistakes. Lessons are not only important in forming beliefs for the individual, but can also be important for a culture. Dramatic events like wars or racial persecution can shape the beliefs of an entire nation or group of people. In the interviews for this study, the respondents cited two fairly recent events as important lessons for Brazil, the Falklands/Malvinas War and the Gulf War. These lessons will be discussed in the following chapters.

III. Political Beliefs and the Operational Code Studies:

A. Political Beliefs:

Political beliefs incorporate a number of assumptions about human nature and human capacity for aggression and conflict as well as cooperation and conciliation. Beliefs held by political leaders based on these assumptions tend to form a theoretical basis or system of beliefs about causal relationships, e.g., a world view like, for example, Hans Morgenthau's political realism. A leader's belief system about the political world is thought to affect the decisions that he or she makes in dealing with that world.

Results of studies in the field of Political Psychology suggest that state action and state policy can be viewed as a function of action taken through the decisions of leaders shaped in part by their views and images of the national interest of the state. Decisions to go to war, negotiate peace, build nuclear weapons, and set long range policy goals are made by individuals or groups in response to situations which are screened through a leader's character, personality, beliefs about the world, as well as perceptions of the events. The decisional behavior of a leader, like that of all individuals, is shaped by the manner in which he or she perceives, diagnoses, and evaluates his or her environment. Jervis (1976, 1992) explains that state leaders, like people in general, tend to perceive what they expect to see. Pre-set

beliefs about the behavior or intentions of another state will often determine how that state's actions are perceived.

Glenn Paige (1977) underlines the importance of values in establishing foreign policy in his analysis of the Korean War. He explains that his earlier book The Korean Decision (1968) was written originally from a "violence-accepting" point of view. Underlying his analysis and evaluation of the Korean War was his belief in the normative acceptance of the employment of violence in politics. He explains that his views on the acceptance of violence evolved out of the experiences of World War II and coincided with the thinking of American decision makers at the time. He later approached the analysis from a nonviolent value position. His conclusion in his second evaluation of the decisions to take action in Korea is that much more could have been done to avoid conflict and that the acceptance of violence led to decisions that escalated the War. He argues that if American leaders believe that nonviolent resolutions are achievable, they will work harder to mediate, and cool a conflict rather than fuel it by escalating the violence.⁴

⁴) Paige here suggests that a violence accepting predisposition will tend to produce different policy decisions than a non-violence accepting belief system. He discusses this hypothesis in regard to Korea, but does not test this theory in a broader sense in this paper. It raises the question, however, of the effect of nuclear weapons and the policy of Mutual Assured Destruction on the overwhelming costs of violence in the nuclear age. When the costs are so high, leaders may be forced to work harder to resolve conflict without the use of violence which may escalate to nuclear exchange.

B. The Operational Code Research:

1. The formation of the ten operational code questions:

The operational code⁵ research has made a major contribution to the understanding of the relationship between political beliefs and foreign policy decision making. From his analysis of an earlier study by Nathan Leites (1953), Alexander George (1969) established a set of five philosophical and five instrumental questions about the political world. Answers to this set of questions are considered by George (1979, p. 101), Holsti (1977, p. 156), and others to reveal the core of one's political beliefs. The operational code questions provided by Alexander George (1969) are:

I. The Philosophical Questions:

- 1) What is the essential nature of political life? Is the political universe essentially one of harmony or conflict? What is the fundamental character of one's political opponent?
- 2) What are the prospects for the eventual realization of one's fundamental political values and aspirations? Can one be optimistic or must one be pessimistic on this score; and in what respect the one and/or the other?
- 3) Is the future predictable? In what sense and to what

⁵) This term was created by Nathan Leites (1953) to describe the code of political behavior by which the Bolsheviks operated in Communist Russia.

extent?

4) How much control or mastery can one have over historical development? What is one's role in "moving" or "shaping" history in the desired direction?

5) What is the role of chance in human affairs and historical development?

II. The Instrumental Questions:

1) What is the best approach for selecting goals or objectives for political action?

2) How are the goals of action pursued most effectively?

3) How are the risks of political action calculated, controlled, and accepted?

4) What is the "timing" of action to advance one's own interests?

5) What is the utility and role of different means for advancing one's interests?

The first philosophical question is considered the "master" question. George explains (1979, p. 101) that the answers to this question set the tone for the remaining beliefs. Research has demonstrated (Putnam 1973, Walker 1977, Walker and Murphy 1981, Walker and Falkowski 1984) that there is a link between responses to the first philosophical question and responses to the remaining questions. Ole Holsti (1977) formed a typology which links in a logical manner the various operational code beliefs to the core first order

belief in a meaningful pattern.

Walker and Falkowski (1984) in their study of several US Presidents and Secretaries of State, used Holsti's typology to classify these leaders according to pre-determined qualities of needs for power, affiliation, and achievement. The study represents an ambitious attempt to bring together important research by various social scientists and interrelate their findings in the search for important linkages between needs, personality, beliefs and political behavior.

The study utilizes research by 1) Barber on active/passive and positive/negative characteristics of leaders; 2) Etheredge on high and low levels of dominance vs. extroversion and introversion; and 3) Winter on needs for power, achievement, and affiliation. Walker and Falkowski linked these personality characteristics with Holsti's policy types. They found, for example, that Truman's high need for power was associated with policies that reflected balance of power strategy and a win-or-lose attitude. Eisenhower, on the other hand, had a high need for affiliation which was expressed in policy that sought solutions through common interests and cooperation. Kennedy's high need for power, achievement, and affiliation made him difficult to categorize and he did not fit into any type. President Johnson's need for power and achievement but not affiliation put him into a type which seeks power and sees conciliatory action as a sign of

weakness.⁶

The Walker and Falkowski findings suggested that it might be valuable in the present study to ask leaders the importance that they place on power in making political decisions. In their study, the importance of power was then related to policy preference on nuclear issues. The pattern of policy preference created by these responses was then evaluated to see if they fit into Holsti's types. The results are described in the following chapters.

2. The Operational Code as a Predictive Tool:

Operational code researchers believe that a leader's worldview, as expressed through the answers to the 10 questions, shapes policy thinking and political action. Knowing a decision maker's beliefs about how the world operates would to a certain degree predict policy thinking. Walker and Murphy, who review the operational code research in their article titled, "The Utility of the Operational Code in Political Forecasting," explain:

We believe that a concern with forecasting is particularly appropriate for operational code scholars, because operational code analysis includes the premise that decision makers use beliefs about their political universe to appraise the effectiveness of various political actions. These diagnoses, in turn,

⁶) Their study focused on foreign policy decisions and not on domestic issues where President Johnson was known to be an effective coalition builder in Congress.

influence the selection of the individual's political actions. Consequently, it would appear that a knowledge of the individual's operational code enhances the analyst's ability to anticipate the individual's diagnosis of the situation and the decisions to act one way rather than another. (Walker and Murphy, 1981-82, pp. 25 & 26)

Walker and Murphy make the point that beliefs about the "political universe" or worldview (the term used in this research) "influence the selection of the individual's political action." In a more recent article Walker states:

Both Leites and George recognized, as have so many scholars, that the way national leaders view the world and each other fundamentally affects their policy choices. (Walker, 1990, p. 407)

It is clear by these statements that one of the main purposes of the operational code research is to predict policy and behavior by decision makers. This study will examine how effective the operation code "master" question is at predicting policy preference on nuclear issues.

3. Problems with the Operational Code Hypotheses:

The major problem with the operational code hypothesis, despite earlier assumptions, according to the results of this study, is that it does not predict policy thinking. The assumption that worldview shapes policy thinking was not confirmed by the data. Beliefs that constitute a worldview do not correlate significantly with policy preference in this

study. This study produced no evidence that there is any direct relationship between worldview and policy preference. An assessment of the operational code assumptions reveals several problems. First, while people seem to have a worldview, a description of the world outside the person does not seem to be a powerful enough factor to influence thinking on policy issues. Second, other factors which involve how the person believes he or she should interact with that world appear to be more powerful.

Ole Holsti (1977, p. 151) reminds us that "The internal consistency that marks a system of beliefs may also have its roots in 'psycho-logic'" and "may contain as its central point of consistency a need for self-esteem." Holsti indicates here that while worldview, as defined by the answers to the five philosophical questions in the operational code, may be the central focus for a consistent pattern of political beliefs, other motivators like self-esteem may be the driving factors instead of worldview. His suggestion reflects some doubt that the philosophical questions are the key to understanding a base-line belief system. Other phenomena like self-esteem may be important omissions. The results of this study support Holsti's suggestion that beliefs about esteem form a central point of consistency. The focus of this research study on motivational factors like esteem and the need for power was partially stimulated by Holsti's suggestion and the work done by Walker and Falkowski (1984). Beliefs about power and

esteem deal with how people interact with the world. The results of this study add to earlier research reviewed in this chapter by showing that beliefs about power and esteem or prestige play a role in shaping policy thinking.

The assumptions underlying the philosophical questions in the operational code appear to support the rational actor model. In other words, it is assumed that once a picture of the world has been assessed, the decision maker will respond to that assessment in a logical manner unaffected by internal needs, emotions, or values. While decision makers can act rationally under some circumstances, it is an incomplete model of the decisional process. (Janis and Mann, 1977)

The operational code paradigm was developed during the Cold War era when US-Soviet rivalry was at its peak. (The questions were revised from an earlier study by Leites on Bolshevism.) The questions reflect a mode of thinking which focusses on nation/state rivalry. With the end of the Cold War and increased global interdependence, there have been changes occurring in the international environment since the time the questions were developed which may have rendered them too narrow. These limitations may inhibit their ability to expose the more complex belief systems that may be forming in today's world.

According to reflections prompted by the present study, the problems with the operational code theory fall into several categories:

1) The world is complex and answers to questions on worldview are necessarily context specific and not general in nature. For example, views on harmony or conflict depend on the geographical region in question and the time period one is looking at as well as the specific issue, e.g., economic conditions, ethnic strife, pollution, human rights, hunger.

2) Other values may supersede worldview. For example, someone may view the world as harmonious but may focus on the unpredictability of conflict and place a high value on power. This high value placed on power may produce policy that is the same as that of someone who views the world as highly conflictual. Conversely, someone may view the world as conflictual but place a high value on non-violence and take a pacifist position on policy.

3) The definition of the concepts raised in the operational code questions may not be universal or carry the same interpretation. Conflict may be considered a healthy and necessary element of growth. Harmony may be interpreted to mean order imposed by a repressive regime at the expense of large portions of a society. Therefore, the values placed on conflict or harmony may be reversed.

4) Today's concerns and conflicts do not solely relate to an opponent, i.e. nation/state or group. Today's conflicts may be brought about by collective problems

like pollution, drug trafficking, terrorism, nuclear accidents, economic issues, etc., where it is impossible to focus on a single enemy.

The first operational code question asks whether the political universe is one of harmony or conflict. The two ends of the continuum, harmony and conflict, though polar counterparts, need not be mutually exclusive. If one looks at North America or the recent efforts at the integration of Western Europe one can see relative harmony. However, at the same time, hostilities resulting from the breakup of Yugoslavia demonstrate tremendous violence and conflict. In addition, a look at the Middle East stimulates more images of hostility and conflict. It does not appear easy to choose one over the other. And, acknowledging both should not nullify the intensity of either.

One question that could be asked is, what is the human capacity for harmony or conflict in the long run? Holsti (1977, p. 157) suggests that while many policy makers view the world as conflictual, beliefs about human nature and the capacity for harmony may be important factors in shaping policy thinking. A person who believes that there is conflict or the potential for conflict everywhere would be revealing fundamental assumptions about human nature which he or she believes to be true. A person who believes that people have the capacity for harmony and that the present conflict is only

temporary might form a different policy than someone who did not believe in the human capacity for harmony. In general, the operational code questions may need to allow for more complexity and be more context specific.

The second part of the "master" raises another problem. This question asks about the character of one's political opponents. The assumption here is that conflict or disharmony emerges from an opponent, in this case another nation. These issues may be indirectly linked to specific opponents or countries, but the concept of a single enemy is becoming blurred. Conflicts may have no specific nation or group to focus on as the enemy in the traditional sense. Though terrorism in the Middle East may be linked to the nation/state, groups like the PLO do not represent a state but a state-less people, and Shiite terrorists represent a religious fundamentalist movement. The question is how to address the issue of who or what is the opponent.

The questions in this research are framed in a way which attempts to elicit a more differentiated system of beliefs about today's political world and its problems. One focus of my research has been to revise the operational code questions and expand on them taking these issues into account.

IV. Conclusion:

The research examined in this chapter formed a base for the development of this research project. The work by Milton

Rokeach (1960) was particularly important in the development of an understanding of beliefs and belief systems. His effort to understand the cognitive process of beliefs and his focus on central organizing beliefs encouraged this research to focus on basic central concepts like power, trust, esteem, and competition. The items in the questionnaire dealing with trust and threat emerged from Rokeach's ideas on these concepts. The formation of the four spheres of beliefs in this study emerged from Rokeach's organization of beliefs along a central-peripheral dimension.

Glenn Paige's work on the importance of values and value positions inspired this researcher to build value oriented questions into the study. Paige, in his analytic piece entitled, "On Values and Science: The Korean Decision Reconsidered" (1977), argues that taking a value position, in this case accepting violence, establishes a bias in the analysis of the policy thinking process. For example, if the analyst assumes a certain set of values on the part of the decision maker, the result of the analysis may be skewed to reflect those values. Paige's challenge to look for a broader range of values encouraged this researcher to ask the respondents in the study to describe the value they placed on power, prestige, and other phenomena instead of assuming a universal viewpoint.

Winter's work on power as a motivator encouraged this study to first ascertain whether the respondent placed a high

value on power and then to see if a high value for power correlated with a specific policy orientation. In this way, the study would test to see if power appeared to be a motivator in policy thinking. Loch Johnson's study of Frank Church (1977), in which Johnson linked Senator Church's political beliefs to policy choices, was the source for the questions on zero-sum and the use of a continuum for the scale of measurement on the questionnaire.

Rokeach's (1960) analysis using known groups (open and closed-minded) and Putnam (1973), Tetlock (1973, 1983), and Converse's (1964) study of liberal and conservative groups led to the development of an index on beliefs based on two polar groups. While in all of these studies there was a range of responses from open-minded to closed-minded or from liberal to conservative, these authors chose to focus on the extreme groups at either end of the spectrum. The characteristics of the extreme groups would then create ideal types to which a range of views could be compared. This method of focusing on the extreme groups proved to be very useful in explaining the results of this study. The respondents who had contrasting sets of values also tended to have very different views on nuclear policy.

The operational code research inspired the development in this research of the hypothesis that answers to the "master" question would shape policy thinking. The questions on conflict and harmony and on control emerged out of the five

philosophical questions. Ole Holsti's (1977) development of the operational code typology and his analysis of the operational code paradigm encouraged the expansion of the worldview questions and aided in the analysis of the two polar groups which emerged from the study on nuclear policy thinking.

This study examines whether or not beliefs shape policy thinking on nuclear issues. The results of the research indicate that beliefs about the value of power, prestige, competition, and moral considerations do tend to shape policy thinking. The results also indicate that, contrary to previous assumptions, beliefs about the nature of the world do not tend to shape policy thinking. With its focus on the examination of belief systems, it is hoped that this investigation will contribute to the study and understanding of thought processes and how they relate to policy thinking particularly on choices to build or not to build nuclear weapons.

Chapter Two

THE CHOICE OF BRAZIL AS A CASE STUDY

I. BRAZIL AND NUCLEAR PROLIFERATION

Both Brazil and Argentina⁷ in the 1970s and 1980s had developed nuclear enrichment programs "to 'master' all phases of nuclear energy production, including those with potential military applications." (Spector, 1990, p. 221 & 223) While recent agreements between Argentina and Brazil to conduct mutual inspections on all nuclear installations have taken place and have improved the state of confidence between the two rivals, the Brazilian Senate had by this writing in January 1994, not approved the 1991 agreement which would include inspections by the the International Atomic Energy Agency (IAEA). In addition, Brazil's nuclear program continues to be under the complete control of the military (Malheiros, . 1993) which has not been enthusiastic about IAEA inspections (Hibbs, 1991). While the risk that Argentina and Brazil may be developing a nuclear weapons capability has diminished, the non-proliferation community is concerned that both countries are so close to this achievement that political delays in installing monitoring and accounting measures will

⁷) Even though former Pres. Raul Alfonsin of Argentina placed the country's nuclear program under civilian control, by the end of his tenure in 1989 Argentina had acquired the ability to produce nuclear weapons-grade material free of IAEA safeguards. Of concern are the Ezeiza plutonium reprocessing plant, the Pilcaniyeu nuclear enrichment plant, and the Argentine Air Force's nuclear-capable Condor II medium range ballistic Missile. (Spector, 1990, pp. 223-224)

allow the time that is necessary to quietly achieve nuclear capability. While neither nation appears to have any serious threat to its national security in the region, other factors beyond deterrence may foster proliferation.

A. Proliferation in General

Despite the slackening of tensions between the United States and the former Soviet Union, the proliferation of nuclear weapons remains a critical issue (Wiesner et al. 1993, Donnelly 1990, Albright 1989, Spector 1987, 1990). The dangers to the world created by the spread of nuclear weapons to developing nations are numerous. However, the fact that proliferation is occurring (Spector 1984, 1985, 1987, 1990; Wiesner et al. 1993) indicates that there are factors fostering the development of a nuclear option.

The proliferation of nuclear weapons multiplies the dangers of the already existing major power arsenals in significant ways. Recent studies have shown (see Leavitt and Bracken 1990) that while major power command, control, and communications systems to protect nuclear weapons from misuse are not thoroughly foolproof, those of developing nations would be even less effective.

Leonard Spector (1990) and other non-proliferation

experts are concerned about this lack of safety. Spector (1990) and Leavitt (1990) explain that although developing nations have, or are close to having, the technical capability to build nuclear weapons, they are far from having the kind of technology necessary to provide the safety of these weapons from accident or from theft by terrorist groups. The command, control, and communications systems in developing nations according to Spector and Leavitt are not adequate to provide the safety measures necessary for storage, protection from theft, and control in crisis situations in the utilization of these immensely destructive weapons.

Also, many developing nations do not have stable governments and lack stable institutional structures. At times these countries may have leaders who are not accountable to their people. Military coups have been frequent in Latin America and in other developing nations, changing national policies over night often ruling by decree. The industrialized nations worry that instability and weak institutional structures may allow a charismatic, but ruthless, leader to emerge unchecked who might be less responsible about the use of a nuclear potential than a leader who is subject to mechanisms of accountability.

There are various reasons for nations to develop nuclear weapons. The primary reason has been to deter aggression. The US built the bomb out of fear that the Germans might get it first and use it against the Allied Forces. By the end of

1939, many scholarly papers on nuclear energy had been written. Three scientists in the United States, Edward Teller, Leo Szilard, and Eugene Wigner, believed that Hitler's scientists were likely to produce an atomic bomb. They asked Albert Einstein to write to President Roosevelt to advise him of their concerns. (Moore, 1992, p.12) The result was the creation of a large secret US program to build the atomic bomb. However, the war in Europe ended without either side using nuclear weapons. In August, 1945, the US used the new weapon (tested for the first time only a few weeks before) on two Japanese cities to demonstrate US power to the Japanese and end the war in the Pacific.⁸ It is also felt that the bombs dropped on Japan were not only used to end the war but were also intended as a symbol to the Soviets of US power and scientific advancement.

The Soviets developed nuclear weapons out of rivalry with the US and to deter a possible US attack. (Talbot, 1984) The Soviets helped the Chinese at first, and then pulled out. But the Chinese were able to finish the work to deter the Soviets from attacking them after the Sino-Soviet split. The French and British built nuclear weapons for deterrence and for prestige.

In 1974, India exploded a nuclear test bomb which gained

⁸) The U.S. first tested in 1945; the Soviets in 1949; the British in 1954; the French in 1958; and the Chinese in 1964. India conducted its "peaceful" nuclear explosion in 1974.

them international prestige and a deterrent to Chinese aggression. China by then had the bomb. India's explosion of a "peaceful nuclear device" demonstrated that nuclear explosions could be produced by processed fuel using the technology provided by nuclear power plants. According to Leonard Spector, India had several reasons for developing a nuclear weapon:

India's development of a nuclear weapons capability, which dates from the late 1960s, has been prompted by a range of motives. These have included concerns over the nuclear threat from the People's Republic of China, aspirations for regional pre-eminence and international recognition, and, during the 1980s, the desire to maintain a clear edge over Pakistan's growing nuclear potential. (Spector, 1990, p.63)

In reaction to the fear of India's dominance, the Pakistanis launched a program in 1972 to gain a nuclear capability. In 1990, Spector wrote, "Today, some four years after it first achieved the ability to produce such weapons, Pakistan probably could deploy five to ten nuclear bombs for delivery by aircraft." (Spector, 1990, p. 89)

Israel's undeclared, but generally known, nuclear arsenal is clearly to threaten and deter Arab aggression. (Evron, 1974; Feldman, 1982) In October, 1986, the London Sunday Times published an interview with Mordechai Vanunu, a former technician in Israel's Dimona nuclear facility. In the interview, Mr. Vanunu revealed that Israel had accumulated a nuclear arsenal of 100 to 200 weapons. (Cohen and Frankel,

1987)

Iraq's attempts to build a nuclear weapons capability are a mixture of prestige for Saddam Hussein's regime and a threat to Israel. In July, 1991, Iraq admitted that it had been running three parallel secret nuclear programs designed to produce enriched uranium for nuclear explosions. (Lewis, July 9, 1991, p.A1) During the Gulf War the Iraqis attacked Israel with Soviet designed Scud missiles. It is still unclear whether IAEA officials have been able to uncover and destroy all remnants of an Iraqi nuclear capability. Should Iraq be able to continue its nuclear program when the UN inspectors leave, Israel's security would be seriously threatened.

In a recent announcement by F. W. de Klerk of South Africa, it was revealed that a 15-year clandestine program in the country had actually developed 6 atom bombs. President de Klerk also stated that the program had been dismantled in 1989 at the end of the Cold War. The President explained that "its strategy was that if South Africa came under attack, it would detonate a test device to demonstrate its ability, and threaten to use the weapon unless the United States came to its aid." (New York Times, March 25, 1993, p.A1) He pointed to "South Africa's relative international isolation" as a factor in the motivation to build the bomb.

B. The Case of Argentina and Brazil

In the cases discussed above, with the exception of South

Africa, each nation developed nuclear weapons in reaction to an external threat of aggression often from nations who already had nuclear weapons or were feared to be on the brink of having nuclear capability. As with Pakistan/India, India/China, U.S./Nazi Germany (WWII), and Israel/Arab nations, these countries were either in the midst of war or had a history of war and conflict. The case of Argentina and Brazil is slightly different. While most other nations seeking the nuclear option had some need for a nuclear deterrent against a threat of aggression, that motivation seems to be absent in Latin America. While there have been some border disputes as well as continuing competition and antagonism between Argentina and Brazil, the last war between the two countries, which took place in the Rio Plate region, was in 1825-28 (Schneider, 1992, p.36). Brazil and Argentina seem to be motivated more from a sense of rivalry between the two countries and a desire to achieve international prestige and recognition for attaining the level of scientific expertise needed to make the bomb. In an article in Orbis, David Myers writes:

While Brazil's drive to acquire nuclear power technology is related to a complex interweaving of political and economic considerations, its attitude toward developing nuclear weapons is shaped largely by Argentina's nuclear program. One result of the 1982 Malvinas Islands conflict between Argentina and England has been Argentina's renewed effort to acquire a nuclear weapons capability. Brazil would never allow Argentina to become the only country in South America with such weapons. (Myers, 1984 p.

881)

For Brazil and Argentina, obtaining a nuclear weapon may also be seen as a bargaining chip to gain leverage and as a symbol of joining the nuclear club and the major powers. Daniel Poneman explains that while there does not seem to be a security threat to either Brazil or Argentina:

Nevertheless, acquiring the nuclear weapons option might be sought by either Argentina or Brazil for the more limited purpose of obtaining political leverage and prestige. Both nations are rivals for regional influence; both also (though especially Argentina) exploit their purposeful nuclear ambiguity to increase their leverage in dealings with the nuclear suppliers. (Poneman, 1985, p.180)⁹

Nevertheless, while deterrence at first does not seem to be the primary motivation for Argentina and Brazil, the importance of the 1982 Falklands/Malvinas War must be taken into account. Argentina was overwhelmed by an outside power, the United Kingdom, which used nuclear powered submarines and probably had nuclear weapons on board its ships (Freedman and Gamba-Stonehouse, 1990). It is suspected that the weapons were left on the ships when they departed the Mediterranean and were not intended for use against the Argentines. Nevertheless, Great Britain's nuclear capability posed a threat to Argentina. While Argentina's nuclear program

⁹) Daniel Poneman is currently (spring, 1993) in the National Security Council for the Clinton Administration. His title is Special Assistant to the President and Senior Director for Non-Proliferation and Export Controls.

started in 1978, several years before the War, the Malvinas conflict gave renewed impetus to the Argentine nuclear propulsion project. The lesson of the War was not lost on Brazil. Dr. José Goldemberg, former Brazilian Secretary of Science and Technology explains:

I would like to summarize a very interesting article that was written and published recently by Admiral Mario Cesar Flores, Chief of Staff of Brazil's Navy and the leading figure in Brazil's nuclear submarine programme. . . . First, the Admiral asks the following question: why submarines in the Brazilian Navy? The reason he gives has to do with the Malvinas War. Submarines played a very important role in the war's outcome, Admiral Flores believes - not only nuclear submarines, but submarines in general. (Leventhal and Tanzer, 1992, p. 167)

While it may not seem to the U.S. or to Great Britain that Argentina faced a nuclear threat in the Falklands/Malvinas War, the Latin American reaction may be quite different. The Argentine military in developing its strategy would want to be able to meet with equal strength a threat by a potential enemy within the resources available. The political decision to develop a nuclear capability would have to take into account other aspects of national security which would entail economic and international constraints. Argentina's decision to pursue a nuclear capability posed a potential threat to Brazil, its traditional rival, and any return to that policy would certainly meet with a Brazilian response.

Brazil has not signed the Non-Proliferation Treaty and has continued to fund unsafeguarded (no oversight or inspections by internationally recognized, credible

mechanisms) research on developing weapons grade nuclear material (Malheiros, 1993). Brazil's nuclear activities have followed two parallel directions, an open program of nuclear power development with IAEA inspections, and a secret, often referred to as the "parallel," program to develop a nuclear weapons capability without international safeguards. Brazil has continued to use the technological experience gained through its contracts to build nuclear power plants with the US and particularly with West Germany (Gall, 1976) in order to develop the secret parallel program of nuclear development aimed at building the capacity to produce "the bomb." (see the Final Report by the Parliamentary Commission to Inquire into the Parallel Program, Dec, 1990, and de Goes, edit., De Angra a Aramar, 1988) Though the nuclear power program has met major obstacles with the Angra I power plant experiencing major operational difficulties and Angra II still not completed, Brazil has continued its program of research on weapons grade material (Caldas, 1992).

C. Research on Nuclear Weapons Grade Material and Nuclear Power

This study will deal with nuclear weapons policy and research on nuclear weapons grade material. Although nuclear power issues are not the focus of this research, there are areas where the two issues intersect. For example, the Aramar nuclear research facility which had been a part of the secret

"parallel program" until Jose Goldemberg, Minister of Science and Technology under President Collor, revealed its existence (Brooke, New York Times, Oct. 9, 1990), is said to be developing fuel for a proposed nuclear powered submarine. Moreover, Leonard Spector (1990) explains that the type of enrichment process needed to fuel a nuclear submarine is essentially the same as that needed to develop nuclear weapons material.

The fact that the Aramar facility was developed secretly and still has not undergone inspections by IAEA or a Brazilian oversight team (interview with ACDA officials, Jan. 21, 1993) opens its existence to suspicion. The Brazilian public has expressed concern about this facility. On December 23, 1987, four thousand people demonstrated against Aramar in the streets of Sorocaba which is near this facility. In 1988 over 12,000 students signed a petition which was sent to the National Congress asking them to restrict the nation's nuclear activities. An amendment to the Constitution was also proposed asking for the elimination of Aramar. However, the amendment was rejected. (de Goes, 1988, p. 84).

D. Brazil's Role in Iraq

Another issue of concern to the non-proliferation community is undeclared nuclear nations or threshold nations may offer assistance to non-nuclear states in their quest to acquire nuclear capability, thus increasing proliferation even

further beyond the control of the major powers. Brazil's activities in Iraq are a case in point. In 1981, during the military regime in Brazil 8 tons of uranium were secretly sold to Iraq by the Brazilian military. The uranium, in the form of plates and processed at the Institute for Nuclear Energy Research (IPEN) in São Paulo, was transferred to Iraq by the Aerospace Technology Center (CTA) run by the Brazilian Air Force (Fullgraf, 1988, p. 156).

In addition, before the Gulf War, several Brazilian weapons engineers were in Iraq on contract to design and build an air-to-air missile. These engineers were there under the guidance of a retired Brazilian military officer, Hugo Oliveira Piva, former director of CTA and who had been one of the major organizers of the secret "parallel program" in Brazil (O Globo, September 30, 1990). His knowledge of nuclear technology may have been of great value to Iraq in its pursuit of nuclear weapons. Also, IAEA inspectors in Iraq after the Gulf War discovered nuclear material which could be traced back to Brazil. (See UN document S/23283.) This evidence heightens concern by non-proliferation experts over Brazil's nuclear development and its role in proliferation.

E. Implications for Non-Proliferation

Advances have been made recently in non-proliferation. France and China have now signed onto the Non-Proliferation Treaty (NPT), which is the cornerstone of the non-

proliferation regime. Now all five of the declared nuclear weapons countries, US, Russia, Great Britain, France, and China, are a part of the Treaty. One hundred forty-four other nations have signed the Treaty since its adoption in 1970. However, Brazil and Argentina are still not parties to the Treaty, claiming that the agreement is discriminatory. Non-nuclear states who are parties to the Treaty are required to undergo inspections by the IAEA on their nuclear facilities and pledge not to build nuclear weapons while the original five nuclear states are exempt from these measures.

While the NPT has symbolized the control of nuclear proliferation, a signatory to the agreement, Iraq, has been secretly developing a nuclear weapon capability undetected by the IAEA, anyway. Iraq's secret program was only discovered after the Gulf War when the joint UN-IAEA special investigation team went into Iraq. Since the Gulf War and the discovery of Iraq's secret program, the UN Security Council has taken a greater interest in proliferation issues. Also, the Nuclear Suppliers Group, an informal group of 27 nations, in April of 1992 extended its export controls to include industrial technologies which have nuclear applications. (Spector, 1992, p. 24) These measures may slow down the proliferation process, but Brazil has already acquired, or developed indigenously with the help of Germany, the necessary technology and is unlikely to be affected by these new measures.

In December, 1991, Brazil and Argentina signed a nuclear safeguards agreement with the International Atomic Energy Association (IAEA). In a show of support for the agreement, the two Presidents, Fernando Collor de Mello of Brazil and Carlos Menem of Argentina, flew to Vienna for the signing. The four parties to the agreement are the governments of Brazil and Argentina, the IAEA, and the Argentine-Brazilian Agency for Accounting and Control of Nuclear Material (ABACC). The ABACC has recently established its headquarters in Rio de Janeiro, Brazil, and it is intended that the agency will work with the IAEA to establish a joint system for on-site inspections and inventory accounting of nuclear material.

However, this new accord with the IAEA leaves open some doubts among experts. First, the agreement cannot be implemented without approval by the Brazilian Senate which has been put off for over a year and still remains in committee. Nucleonics Week in November, 1991, reported that the Brazilian military was "threatening to torpedo the accord." (Nucleonics Week, November 28, 1991, p. 10) The Brazilian military has tried to circumvent civilian controls since the Collor Administration enacted tighter restrictions on military activities. In August, 1991, it was disclosed that \$65 million dollars more than was authorized in the national budget was spent on Aramar. It was suspected that the money was spent on foreign made centrifuges. (Veja, August 14, 1991, p. 24)

Second, the agreement could exempt some nuclear materials from accounting and controls. Article 13 of the agreement states that nuclear materials intended for use to power vehicles including submarines need not undergo accounting procedures. Both Argentina and Brazil have devoted a significant portion of their nuclear research to nuclear submarine propulsion and Brazil's controversial facility, Aramar, has been precisely involved in that activity. Inspections at Aramar are critical to the control of the development of nuclear weapons grade fuel.

Even if the Congress approves the agreement as it is worded, it would not necessarily result in IAEA inspections or accounting of nuclear material at Aramar. Even with IAEA inspections there could remain some questions about the diversion of nuclear material for non-peaceful use. Doubts about IAEA's ability to detect clandestine activities in the past and particularly in Iraq are a consideration. Therefore, even with IAEA participation there may be some areas of concern. A Brazilian team of trained personnel which would include scientists, environmentalists, members of Congress, and concerned local citizens living around the facilities¹⁰

¹⁰) A group of mayors and other local officials from the towns around the Aramar facility have formed an organization called CRAFA which carries out its own oversight on Aramar. They are not allowed access to Aramar which is controlled by the military, but they regularly watch what comes and goes from the facility. This group alone could not carry out formal inspections, but would enhance the vigilance of any oversight effort.

who can monitor activities on a regular basis would certainly add to a system of oversight which included IAEA periodic inspections.

However, all this does not address the perceived needs and concerns expressed by those Brazilians who advocate a nuclear weapons capacity. Some of the participants in this study explained that many Brazilians want to be included in First World dialogue and trade. The interviews, which will be discussed further in the following chapters, revealed that for some Brazilians the symbol of prestige that is offered by becoming a member of the nuclear club is important. The industrialized nations could make a greater effort to invite and encourage Brazil to become involved in other means of advanced technology that would offer the same level of prestige but would not threaten proliferation. The reduction of nuclear arsenals already begun by the US and Russia is consistent with their obligations under the Non-Proliferation Treaty and may play a role in garnering support for the Treaty in the review conference scheduled for 1995. The remaining nuclear powers could show good faith by joining in the disarming of nuclear weapons systems. The signing of a comprehensive test ban by the five nuclear powers would add a great deal to the credibility of non-proliferation efforts.

II. BRAZIL'S NUCLEAR WEAPONS DEVELOPMENT PROGRAM

A. The Parallel Program

During the years of the military regime from 1964 - 1985 and into the Sarney Administration, 1985 - 1990, the Brazilian military developed a secret nuclear weapons program referred to as the "parallel program." This program was carried out by the three branches of the military at different sites using different techniques for the enrichment of nuclear material. A bomb test site was constructed in the mid-eighties at Cachimbo in the state of Pará. When President Fernando Collor de Mello took office in 1990, a special congressional commission was established to investigate the "parallel program" and the results of their inquiry revealed that the military had been carrying out a secret program to develop a nuclear bomb with funding through a series of secret bank accounts called the "Delta Accounts." (Final Report of the Parliamentary Commission to Inquire into Parallel Program.)

The military still maintains control of all the nuclear research facilities in Brazil which are under the authority of the Secretary of Strategic Affairs (SAE), a cabinet level ministry which has three parts: the National Security Council, the National Intelligence Service, and Special Projects. Nuclear enrichment research is a part of Special Projects.

Each branch of the military has its own nuclear enrichment and research projects. The navy project operates out of the Institute for Nuclear Energy Research (IPEN) at the

University of São Paulo. Admiral Othon Luiz Pinheiro da Silva, who received a masters degree in nuclear engineering from MIT in December, 1977 ¹¹, heads the program at the Sao Paulo Center for Enrichment Research (COPESP). The navy facility which conducts its centrifuge enrichment research is located at the Aramar center for research in Iperó, a town outside of São Paulo. After a visit to the Aramar facility in 1987, nuclear physicist and Rector of the University of São Paulo at that time, José Goldemberg, explained that the facility at Aramar could enrich uranium to the 20% level and with the addition of more centrifuges that level could be increased to 80% (the minimum level of enrichment needed for nuclear weapons material). (de Goes, 1988, p. 82) ¹²

The airforce conducts research on laser enrichment at its facility, CTA, the Center for Aerospace Technology, in São José dos Campos near São Paulo. The airforce facility is directed by Coronel Reginaldo dos Santos who received his doctorate from Purdue University, specializing in the study of laser technology. (O Globo, Sept. 30, 1990) The army has a jet

¹¹) Admiral Silva's Master's thesis topic is "Fuel Element Performance Maps for Nuclear Reactor Operational Decisions." A copy may be obtained from the Department of Nuclear Engineering at the Massachusetts Institute of Technology.

¹²) While most experts give 90% as the necessary level of enrichment to attain the critical mass for an explosion, Goldemberg, trained as a nuclear physicist, here indicates that the 80% level is a minimum requirement. A report by the Brazilian Physics Society (see bibliography) also claims that the ARAMAR facility would be capable of attaining the level needed for a bomb. (p. 6 of the Report)

nozzle enrichment facility at Resende near Rio de Janeiro and a gas graphite enrichment research project at CETEX, Centro Tecnológico do Exército, in Guaratiba outside Rio, which plans to produce small quantities of plutonium. The director of the army's CETEX project is General Romero Lepesqueur. In an interview in February, 1992, General Lepesqueur stated that the plutonium produced at CETEX could be used for peaceful as well as weapons purposes. (Caldas, 1992, p. 1) A newspaper editorial pointed out that such statements made it difficult for the Collor administration to convince observers that the military's nuclear program is under civilian control. (Estado de São Paulo, Feb. 2, 1992, p.3)

A test site with two deep wells for detonating underground nuclear explosions was built at the Military Geographic Center, CGM, at Serra do Cachimbo in the State of Para. (Final Report of the Parliamentary Commission on the Investigation into the Parallel Program, 1990) The Cachimbo site is run by the airforce but is used by all branches of the military for testing.

To date, the only government oversight of these military projects is conducted by CNEN, the National Commission for Nuclear Energy. CNEN was created in 1956 during the Juscelino Kubitschek Administration to research and promote the development of nuclear technology. During the years of military dictatorial rule, CNEN was used to hold secret bank accounts (called the "Delta" accounts) which were used to fund

the military's secret parallel nuclear weapons program. Because of this history, those who oppose the nuclear enrichment projects, citing a conflict of interest, question CNEN's ability to inspect and oversee these research and development facilities. There is additional concern because, according to interviews done for this study, the test holes at Cachimbo have only had covers placed over them and could still be made operable.

Some Brazilian groups are calling for inspections by teams of experts, either Brazilian civilians or the IAEA, who are not connected to military interests.¹³ As of December, 1993, however, the military has been able to avoid outside interference on these projects. The former Collor Administration signed agreements with Argentina and the IAEA in December, 1991, to begin team inspections which would include the IAEA and experts from both Argentina and Brazil. (Krasno, 1992) However, the Brazilian Congress which had been preoccupied with the Collor impeachment, the transition to a new administration, a Constitutional review, and corruption charges within the Congress, had not approved the agreement by

¹³ The Brazilian Physics Society's Commission on the Nuclear Question has made a proposal for a Brazilian system of oversight (see appendix for an English summary). Also, a local organization of mayors and citizens of the region surrounding Aramar called CRAFA has called for civilian inspections of the Aramar facility.

December, 1993.¹⁴

B. Brazil's Intentions for Developing the Bomb

Brazil's leaders have at various times expressed the intent to develop nuclear weapons primarily as a symbol of attaining world power status.(Spector 1987, 1990). In December, 1983, General Waldyr Vasconcellos, then Chief of the General Staff of the Armed Forces stated, "We cannot slow down research in the field of nuclear technology. Any country that wants progress must carry such research to completion and whoever controls nuclear technology can include the making of a 'bomb'"(Stepan 1989, p. 528). Another statement by Army Minister General Leônidas Pires Gonçalves asserted that, "Countries that do not complete the nuclear fuel cycle by the 21st century, will not be considered a world power."(Spector 1987, p. 202). Despite former President Collor's condemnation of the secret project and his closing of the underground testing shaft in the fall of 1990, the military has continued to maintain control over their nuclear projects. As one can

¹⁴) According to a report by Carmen Lídia Ribeiro Moura, Secretary, Science and Technology Section of the Brazilian Embassy, Washington, D. C., the House of Deputies had approved the IAEA agreement in September, 1993. It will go to the Senate and it is expected that a decision will be reached by spring, 1994. The Itamar Franco Administration anticipates that the Senate will also approve the Accord. If so, the military would have to cooperate with the IAEA in order to implement the Agreement. According to interviews done with the military for this study, they are not enthusiastic about IAEA inspections.

see from the statements made by the military officers quoted above, the military does not necessarily share the point of view held by former President Collor.

C. How Close is Brazil to Having a Bomb?

There appears to be some controversy over how close Brazil is to being able to make a nuclear bomb. It is still felt (interview with nuclear non-proliferation official in US State Dept., Jan. 21, 1993) that Brazil has not yet gained the ability to produce weapons grade fuel in the quantity needed. However, a group of Brazilian nuclear physicists expressed in an article in the Bulletin of Atomic Scientists in 1989 that it may be only a few years off. (see Bulletin of Atomic Scientists, May, 1989). According to an interview with the former president of Brazil's Physics Society, Luis Pinguelli Rosa, in December, 1992, the capacity of the Aramar facility is continuing to be expanded and there were about 900 centrifuges in operation at the time of the interview. He also stated that while Aramar can enrich to 20% in its present condition, within a few weeks a different configuration of the centrifuges could be arranged in such a way as to begin enrichment to the 90% needed for weapons grade material. It is not absolutely clear if Brazil has any highly enriched uranium (90%). What is clear is that it has the capacity to produce it and while these facilities continue to operate without credible inspections, people will continue to worry

about Brazil's intentions.

According to an interview with Admiral Pinheiro da Silva, director of Aramar, on March 12, 1993, "Brazil will expand its capability to produce enriched uranium by 29 percent this year. . . . He stated that 'our objective is to set up a pilot plant with approximately 8,000 high-speed centrifuges' and added that 'because of a political decision' the enrichment of uranium will be limited to 20 percent." The same article also claimed "a confidential government report recently disclosed that there are some 3,000 high-speed centrifuges in Brazil." (Gazeta Mercantil, March 12, 1993) Because the program at Aramar is under tight secrecy, speculations on the number of centrifuges are impossible to confirm or deny. But whatever the number of centrifuges, Admiral Pinheiro da Silva's statement would confirm that the project is moving ahead.

In addition, Brazil has its own uranium deposits and manufactures missiles and aircraft capable of carrying nuclear weapons (Spector 1987, Chicago Tribune 1989, Donnelly 1990). If Brazil intended to develop a nuclear capability, it could become completely self-sufficient in reaching that goal.

III. THE BRAZILIAN MILITARY

A. A Brief History of the Brazilian Military in Politics

The role of the Brazilian military in politics began as

early as 1889 when a group of military officers overthrew the monarchy and established the First Republic, a limited democratic system of aristocratic landholding elites. The military continued to play an important role in the early 1900s. Again in the Revolution of 1930, the Brazilian military, in collusion with civilian elites, overthrew the Republic and established Getulio Vargas as President. He ruled Brazil until 1945 most of this time with dictatorial powers. Part of this period was under constitutional rule.

Under President Vargas's tutelage Brazil developed a strong centralized state apparatus with a corporatist hierarchical structure. Through this structure Vargas enacted a corporative labor code and established labor unions to represent as well as control to workers and employers. This hierarchical ordering was a new phenomenon for Brazil, although it had firm roots in Brazilian historical experience and political culture. (Erickson, 1985)

The strong leadership of Getulio Vargas and his military backing at that time made a lasting impression on Brazilian institutions, political practices and policy thinking. As a populist, Vargas generated broad mass support from the workers and from the industrial bourgeoisie. His policies provided the first national programs of health care, social insurance, workplace safety, recognition of labor organizations, as well as favorable credit, tariff, and investment policies for business. Vargas modernized Brazil's institutions and

expanded domestic industry and foreign markets. He transformed Brazil from a weak nation into a major military power in Latin America. (Erickson, 1985, pp. 171-174)

The military supported Vargas in establishing the authoritarian Estado Novo in 1937 but overthrew him in 1945 to make way for the implementation of a democratic constitution. The turbulent democratic period that followed the Vargas era was punctuated by attempted coups and military uprisings. A military coup in 1954 caused the then popularly elected Vargas to commit suicide. In 1961, President Quadros resigned after eight months in office leaving Vice President Goulart to face the frustrations of a flagging economy and failure to obtain needed reforms.

By the early 1960s, many observers claimed that Brazil was ungovernable. Conflicting interests made it impossible to gain fundamental reforms. Corporatism representing elite interests sought to limit political participation while populism sought to expand it. Some sources on the left worked to establish socialism. The military coup in 1964 ended the struggle to maintain a democratic process which proved incapable of resolving the conflicts between the political left and right. The new military regime promised to restore economic development and return Brazil to democracy in a short period. However, under the leadership of the military, the First Institutional Act and others that followed "granted authoritarian legislative and executive powers to the

president and permitted the executive to purge politicians and civil servants without any obligation to comply with due-process laws." (Erickson, 1985, pp. 179-180)

The Second Institutional Act brought a new series of purges and controls and declared indefinite military rule. Through the late 1960s and early 1970s, Brazil witnessed severe military repression. The worst violations of human rights lessened under Presidents Ernesto Geisel and João Baptista Figueiredo in the mid to late 1970s. Pressure for democratization grew and in 1984, massive opposition swelled in protest to military rule.

Through a method of compromise between the military and growing civilian opposition, a civilian president was elected to office through a political process in which the national congress selected the new leader. The elected President, Tancredo Neves, tragically took ill and died before taking office in 1985 and his Vice President-elect, José Sarney, became President in his place. During the 21 years of military rule (1964-1985), the military had gradually established greater and greater political prerogatives. The establishment of the SNI, the National Intelligence Service, under the military regime created an extremely powerful instrument of control and repression. Alfred Stepan describes the SNI:

It seems that the SNI -- the most institutionally elaborated expression in Brazil of the logic of new professionalism --

stands out from among its counterparts in the world in several respects, particularly with regard to its near monopoly in operations and training, the right under the law for the director of the Service to sit on the Cabinet, and the right under the law to have an official office in every government department, state enterprise, and university which can inspect the daily workings of the administrative machinery. In addition, it appears to act as its own liaison, coordination, and review body.
(Stepan, 1988, p. 22)

Through a careful examination of the Brazilian military apparatus after the 1985 election, Stepan concludes that because the SNI was still intact, the military still maintained significant control during the first years of the Sarney Administration.

Thus in the first two years of the present civilian government, the Brazilian military has been able to retain significant control over much of the political space they had occupied during the twenty-one years of military rule. (Stepan 1988, p. 104)

President Fernando Collor de Mello, the first popularly elected president since the military era, dismantled the SNI as soon as he took office in March, 1990. He created a new and weaker intelligence service and placed it under the Secretary of Strategic Affairs, the SAE (Secretário de Assuntos Estratégicos), a cabinet level ministry headed by a civilian. However, while the military no longer has political control of the government, it still maintains autonomous control of its own affairs, including the military industry and nuclear fuel enrichment. In the fall of 1992, President Collor was impeached and forced to resign. His Vice

President, Itamar Franco, was sworn in as Brazil's new President a few days later. However, President Itamar has not exerted the same control over the military as his predecessor (Brooke, 1993, May 27).

B. Brazilian Military Thinking

It is important to understand the role that the Brazilian military plays in terms of national security. The military is not only held responsible for defense against external threats, but is also held responsible for the maintenance of internal order. This is still written in the new Constitution completed in 1988. Internal order is thus a part of the military's legitimate domain for policy and action. Rene Dreifuss, a Brazilian expert on the military, explains that the military have assumed the role of insuring internal order. Their organizational capacity in the absence of a strong civil state along with their control of the means of repression (military might) have allowed them to implement their assumption that they must control internal order to the detriment of the law, according to Dreifuss (Dreifuss, 1987).

According to a military officer who was interviewed for this study, the Brazilian police are not considered capable of carrying out the task of maintaining internal order in a national crisis. The officer explained, "the Constitution states that the military must defend the order of the nation and the Constitution itself. . . . The military serves the

nation and defends the state but, first it defends the nation, meaning the history, the culture, the language, and the tradition." (interview # 60) What this means is that the military is given the task of defending the nation as they derive it and not necessarily a particular government. If there is a threat to the nation, the military thus would have the right to take over the government to save the nation. While some Brazilians do not agree with this premise, this definition of the role of the military is a part of the Brazilian political culture.

Brazilianist Riordan Roett, explains:

As one of the most politicized forces in an underdeveloped society, and in Brazil, given its specific historical and constitutional responsibility to protect the nation, the military's intromission in politics is predictable, if not justifiable on normative grounds, when civilian elites have so polarized political opinion that the government cannot function properly. . . . the roots of Brazilian military intervention are directly tied to the question of political legitimacy and the maintenance, over time, of the basic structure of the bureaucratic-patrimonial state. (Roett, 1992, p. 78-79)

C. The Role of the Military Today is Still Unclear

Brazil is undergoing a systemic change toward democratization but the outcome is still uncertain, and Brazil has witnessed military coups which have ended democratic governments in the past (Stepan 1988). The impeachment and ultimate resignation of President Fernando Collor de Mello in the fall of 1992 put stress on Brazil's orderly transformation to democracy. It is a positive sign that Brazil used

constitutional means to achieve a transformation of power instead of a military coup. However, the resulting chaos and leadership vacuum has left the economy, already suffering from inflation, in a state of hyperinflation. While the economy grew in 1993 by about 4.5%, inflation set a new record at a rate of 2,567%. (Wall Street Journal, Jan. 4, 1994 p. 1) President Itamar Franco demonstrated his lack of interest in playing a strong leadership role in Brazil when in October, 1993, he offered to resign if the Congress would approve early elections. The Congress turned him down.

In light of President Itamar's apparent weak leadership, concerns about the influence of the military may arise. In January, 1994, Justice Minister Maurício Correa revealed that a plot to carry out a military-backed coup styled after that of President Fujimori of Peru failed when President Franco refused to go along with it. The coup was proposed in the fall of 1993 by a coalition of São Paulo businessmen and mid-level military officers after allegations that several Congressmen had been stealing from the federal budget. (New York Times, Jan. 7, 1994, p. A8) Ironically, in this case, President Franco's unwillingness to assume an authoritarian role apparently saved the democracy. Following the crisis, the three ministers of the navy, air force, and the army offered to back the President for the remainder of this term. (Jornal do Brasil, Jan. 6, 1994 p. 4) The military appear to still be actively involved in political affairs in

Brazil. In light of comments made by the military about the need for nuclear weapons and the fact that the military still controls nuclear enrichment research, the power of the military within Brazil remains a source of concern to the non-proliferation community.

IV. PRESENT ECONOMIC, SOCIAL, AND POLITICAL CONDITIONS IN BRAZIL

A. Brazil's Economic Status

Brazil is an economically dependent nation (Evans 1979, Cardoso 1976, 1989) with the largest external debt in the third world at about \$120 billion in 1993 (New York Times, Nov. 30, p. D6). Despite its economic difficulties, Brazil is industrializing, is geographically the fifth largest nation in the world, and has the ninth largest economy in the world. (New York Times: May 20, 1993, p. A1) However, inflation, over-borrowing, mismanagement, dependence on external sources for oil, and irresponsible lending policies by the major powers have (at least temporarily) thwarted Brazil's aspirations of becoming a wealthy modern nation.

Hopes had grown in the 1960s and 1970s when, despite its dependent status, Brazil witnessed phenomenal growth. As Peter Evans (1979) has pointed out, Brazil had creatively used its well established state apparatus to encourage industrial development and control foreign-run multinational corporations while still reserving a niche for the private Brazilian

entrepreneur. However, the Brazilian state bureaucracy in which Evans placed such faith has grown out of proportion and state waste and corruption ("Corruption" September 18, 1991, Veja; Brooke, 1992, "Looting Brazil"; Tasso Jereissati, ex-Governor of Ceara, talk to the Brazil Seminar, Columbia University, November 19, 1992) have added to the drain on the economy already caused by the huge external debt.

Inflation has run at about 1,000 percent or more annually (1989 Report, Inter-American Development Bank). Efforts by Brazil's former President, Fernando Collor de Mello, to curb inflation have failed as inflation figures for 1990 showed a rate of 1795 percent (New York Times, Feb. 11, 1991.) A 1992 New York Times article stated that prices rose during the years of the Collor Administration by 13,000 percent. (Brooke, New York Times Magazine, cover story, Nov. 8, 1992)¹⁵

Some people feel that with Brazil's social and economic problems it doesn't make sense to support the development of a nuclear weapons capability. However, in spite of its serious economic problems, Brazilian policymakers have still considered the nuclear weapons research program a priority and have found funds to keep it going (Donnelly 1990).

Modern industry in Brazil is relatively advanced (Cardoso 1989) and a number of industries have proven to be

¹⁵) On September 29, 1992, the Brazilian Congress voted to impeach Pres. Collor. During his 2 1/2 years in office "consumer prices rose by about 13,000 percent. . . ": New York Times, Nov. 8, 1992.

internationally competitive and creative. The Brazilian arms industry has been particularly strong and by the mid-80s had established itself as the sixth largest exporter of arms in the world, with Libya and Iraq as major customers (Brigaçãõ 1986). Although the arms industry experienced some setbacks in the late 1980s, Brazilian elites continue to give the industry a high priority as a symbol of technological competitiveness with global industrial powers (Jones 1990). To the Third World, possessing the capability to build the "bomb" is an important symbol of technological achievement.

B. The Social Situation in Brazil and the Role of the Elite

Brazil has been and still is an elitist country with a long tradition for the "hierarchical ordering of society" (see Erickson in Wiarda and Kline 1985, McDonough 1981). There are certain basic "givens" in the study of the Brazilian political system. One of the most important of these is "the concept of elite rule," (Roett, 1992). This elitism has been institutionalized in the last several decades through Brazil's authoritarian, corporatist governmental structure which has effectively coopted and controlled potential opposition. While the hierarchical corporatist structure does not guarantee policy control from the top, policy decisions have remained in the hands of the elite (McDonough 1981). Now that Brazil is becoming a democracy some of this control is certain to break down.

While the traditional elite (landholders and major industrialists) still maintain substantial power, there are conflicts within the elite over policy direction (Jaguaribe, 1989, pp. 16-17). Also, the influence of other sectors of society is emerging through the democratization process and the power of the voter. Labor organizers, journalists, and the scientific community can vocalize a defined political position and influence opinion. However, at this point a small percentage of the society still monopolizes the wealth, power, and higher education.

Despite industrial advances, the gap between the standard of living of the small upper class and the vast majority of the people is one of the largest in the world (Cardoso 1989). With the huge gap in income distribution and the continued recession, a large number of citizens in Brazil have become marginalized and must cope daily with mere survival. Hunger is an increasingly alarming problem for Brazilians:

Two-thirds of the Brazilian population consumes less than the 2,480-calorie minimum daily nutritional standard set by the United Nations' Food and Agriculture Organization. (Roett, in Chacel et al., 1988, p.113)

Hélio Jaguaribe, professor of political science at the University of São Paulo, describes Brazil as having two distinct societies within the same nation. One is a modern industrial society similar to those found in Europe and the other, which contains most of the Brazilian people, resembles the poorest, subsistence societies of Africa and Asia

(Jaguaribe, 1989, p. 65). One hears it said in Brazil that Brazil is like two countries, Belgium and Bangladesh, in one. Jaguaribe explains that in this poverty stricken and primitive sector of Brazil, each new generation is condemned to start over from complete zero. There is no capacity to transmit anything from one generation to the next. (Jaguaribe, 1989, p.66)

With many thousands of homeless people and abandoned children living in the streets of the major cities, Brazil is arriving at a moral crisis. According to a Parliamentary Commission to Investigate the Extermination of Children and Adolescents in Brazil, 4,611 children were murdered in Brazil in the last 3 years, a rate of about 4 per day. Of those killed, 82% are black and 77% are boys. According to the report, many of the murders are planned assassinations by groups who want to eliminate this sector of the population. The local police have been implicated in many of the incidents reported. (O Extermínio de Crianças e Adolescentes no Brasil, 1992) With this type of social crisis in Brazil, many question whether it is morally responsible to be spending millions of dollars on nuclear enrichment programs. (de Goes, 1988, p. 127)

C. Political Conditions in Brazil

With the elimination of East-West competition and the emergence of the U.S. as the only remaining superpower,

Brazilian decision makers fear that Brazil's needs may be ignored. Brazilian leaders may also fear that a major power collusion might put pressure on Brazil that could jeopardize Brazil's interests. If the major powers put pressure on Brazil over some issue, what other power can Brazil turn to in defense? Recent efforts by international environmental groups on Brazil to stop burning the rain forests is an example of the type of pressure that can be brought to bear on Brazil, in this case, to reform its environmental and settlement policy (New York Times, Sept., 17, 1989).

One may agree or not agree with the environmentalists, however, Brazilian policymakers would prefer to make policy according to Brazil's needs and not as a result of pressure from groups outside Brazil. Nevertheless, Brazil is dependent on the industrialized nations to provide relief for its debt obligations and to provide technical assistance to develop its industry. It is, therefore, vulnerable to outside pressure from the industrialized nations and is bound to resent their interference in Brazil's internal affairs.

As Brazil emerges from the political crisis surrounding the corruption scandals and ultimate removal of President Collor from office, the Itamar Franco Administration will need to formulate its policy on nuclear development. Despite President Collor's political problems, his strong anti-nuclear policy was applauded by the non-proliferation community. The loss of his leadership in Brazil may leave a vacuum in

decision making on nuclear policy which the military might choose to quietly fill.

V. Possible Incentives or Disincentives for a Brazilian Bomb

This study examines several motivations for Brazil's developing or not developing a nuclear weapons option. The incentives are rivalry with Argentina, a symbol of power projected toward the first world and Latin America, leverage, and prestige. The disincentives are the economic and social costs, Brazilian public pressure and concerns for safety, and pressure from the international community, primarily the United States.

While deterrence of external aggression has been a major factor in other nations developing the bomb, at first glance this does not appear to be a major factor for Brazil. Initially, Brazil felt threatened by Argentina's nuclear weapon's research program which was also underway. Brazil and Argentina have had a history of dispute over certain border areas, e.g., the River Plate region (Leventhal and Tanzer, 1992, p. 47). But, the Argentine threat was also mixed with a traditional sense of competition between these two major Latin American powers. This rivalry fueled the race to be the first in Latin America to achieve nuclear status. The prestige afforded a nation which masters the advanced technology required to build a nuclear weapon is an important achievement for a developing nation like Brazil as it aspires

to enter the inner circles of the developed world.

A factor often missed by analysts from the developed nations looking at Brazil or any other developing nation, is the threat presented by the first world itself. The lessons of the Falklands/Malvinas War and the Gulf War are seen from a different perspective in Latin America than in the United States or Europe. The power exercised by Great Britain in the Falklands/Malvinas War and later by the US in the Gulf War demonstrated the extreme vulnerability of developing nations in the face of high technology weapons.

The United States has a history of asserting its power in Latin America. The Monroe Doctrine, which was touted as a promise to protect Latin America from outside aggression proved to be an empty promise, from the Latin American point of view, in the Falklands/Malvinas case. The US came to the aid of the British in their attacks against the Argentines. The US felt it had no choice under the circumstances, but for Latin America it was clear evidence that the US could not be counted on to provide defense or a "nuclear umbrella" for Latin America if US interests lay elsewhere. The use of nuclear powered submarines by the British and the suspicion that there were nuclear weapons on board British ships (Freedman and Gamba-Stonehouse, 1990) is a factor in decisions in both Brazil and Argentina to increase their efforts to build a nuclear submarine program. Having a nuclear capability can also be seen as a form of leverage to gain

concessions in dealing with the first world. (These issues came out in the interviews conducted for this research and will be discussed in greater detail in the following chapters.)

A better understanding of the motivations to acquire nuclear weapons would contribute to the support of non-proliferation. Brazil has its own interests to pursue, but perhaps US policy might be more sensitive to Brazil's needs in a way that might avoid adding Brazil to the nuclear list. As Wiesner et al. state in their recent article in The Bulletin of Atomic Scientists, (March, 1993, pp. 12-23) "The cause of non-proliferation would be best served by realizing that supply responds to demand, that intention precedes capability. Honest attention to the demand side should be a strong complement to supply-side efforts."

Chapter Three

THE METHODOLOGY

I. General Logistics

The data for this research study were gathered in Brazil during the months of April through July, 1991. The subjects selected were given both an in-depth interview and a written questionnaire. The researcher was affiliated with the University Institute for Research of Rio de Janeiro (IUPERJ) in Brazil which offered a center for operation, library services, and a letter of introduction. The interviews were done in several locations in Brazil including the cities of Rio de Janeiro, Sao Paulo, Brasilia, Angra dos Reis, Sorocaba, and Campinas.

Fifty-eight men and women were interviewed from several sectors of Brazilian society selected for their ability to influence policy thinking in Brazil. The sample was not random but was carefully and deliberately chosen, with the help of an advisory group of experts on Brazil, to be a balanced representation of elites. Brazil has been a society with a strong traditional elite (McDonough 1981) and for over twenty years from 1964 to 1985 was governed by military regimes. Since 1979, Brazil has been undergoing a democratization process and its first popularly elected president since 1961 took office only in March, 1990. This authoritarian tradition contributes to the limited pluralism

in Brazil. Elites in Brazil (as is true in even non-authoritarian societies) still shape policy thinking. Therefore, a study of elite political beliefs and policy thinking is an important part of understanding Brazilian political decision making.

Peter McDonough, who examined elite power in Brazil in his book, Power and Ideology in Brazil, offers a useful rationale for the sampling method used in this study:

"The logic of sampling elites tends to be the reverse of that involved in sampling general populations. Large samples of elites are not necessarily more representative, since elites are by definition few in number. . . . The problem is handled by a mixture of common sense, qualitative analysis of the discursive responses of the elites, and an illustrative rather than rigorous use of tests of statistical significance." (1981, p. 259)

This study's sample of 58 elites, though carefully selected, is a small group and, therefore, it should be kept in mind, as McDonough suggests, that the analysis and examples derived from this data can only be considered suggestive and illustrative and not conclusive.

II. Determining the Sample

As stated the sample was not random but a carefully and deliberately selected balance of elites representing different sectors of Brazilian society which play a role in shaping policy thinking. To determine a cross section of the most influential sectors, an advisory group of experts on Brazil from various institutes and universities in the United States and Brazil was

consulted: Professor Kenneth Erickson, City University of New York (CUNY); Ronald Helman, Director of the Bildner Center on Latin American Studies (CUNY); Professor Margaret Keck, Yale University; Professor Ralph Della Cava, Queens College; Joan Dassen, Director of the Ford Foundation Office, Rio de Janeiro; Clovis Brigagao, Getulio Vargas Foundation, Rio de Janeiro, Brazil; and Maria Regina Soares de Lima, Director IUPERJ, Rio de Janeiro, Brazil. It was determined through consultation with these experts on Brazil to focus on nine major sectors in Brazil which influence policy thinking on nuclear issues: 1) the military, 2) the media, 3) government and politicians, 4) business, 5) labor, 6) artists, 7) the Church, 8) the scientific community and 9) environmental advocates.

The sample for this study includes representatives from each of the nine sectors distributed in this manner: 1) the military, 6 subjects; 2) the media, 6 subjects; 3) government and politicians, 9 subjects; 4) business, 9 subjects; 5) labor, 6 subjects; 6) artists, 5 subjects; 7) the Church, 5 subjects; 8) the scientific community, 8 subjects and 9) environmental advocates, 4 subjects.

The members of the expert advisory group also offered names of elites in Brazil as potential subjects for the study. Through the elite network in Brazil further subjects were then selected. The criteria for selecting people within each sector was as follows: 1) by their position or rank within the sector i.e., those in leadership positions like president of a union or company or high

ranking officer in the military; 2) through recommendations by other elites in their field; 3) those who are well known in their field through publications; 4) people recommended as leaders in their field by institutions like the Brazilian Institute of Religious Study or the Society of Theology and the Science of Religion in Rio de Janeiro for recommendations within the Catholic Church; the United States Consulate and Embassy in Brazil for recommendations in government and business; the Brazilian Chamber of Commerce and other businessmen for business leaders; IUPERJ for recommendations in the social sciences; the Center for Labor Unions (Centro de Sindicatos dos Trabalhadores) in Rio for labor leaders; etc.

The elites in Brazil like any society form a network of connections and once someone is accepted into the network it becomes easier to make other elite connections. An interesting observation of this process is that Brazil's elite society is relatively small and the highly educated, well connected elites change sectors frequently. For example, someone educated as a scientist may teach in the university, then enter government, leave government for business, and then may go back to the university. Sometimes they hold positions in several fields simultaneously. One person who was interviewed was very active as a leader in the women's labor movement, had a tenured position at a major university, and held a high national elective position. It was difficult at times to decide which sector a particular subject best represented. This was ultimately determined by the central focus

of their present work.

To give an idea of the scope of the sample, a description of the positions held by each member who participated in the study is represented in the following sector breakdown:

1) the military: two naval admirals; one airforce general; two army colonels; and one army major.

2) the media: two political journalists for different major newspapers; the editor of a major newspaper; a well-known political journalist for a smaller, more radical newspaper; a free lance journalist and documentary film maker; a television journalist; and a free lance writer.

3) government and politicians: the under-secretary for a ministry; a member of the president's cabinet and secretary of a ministry (like the secretary of a cabinet level U.S. department, e.g., Secretary of State); the general counsel for a government agency; former national senator and former secretary of a state ministry; a mayor; a national senator; a national deputy (like a member of the U.S. House of Representatives); a city councilman; and a former national deputy who is now a political party leader.

4) business: economist and former president of a major bank; director of a business consulting firm; president of a

privately owned bank; director of a Brazilian conglomerate and major landowner; lawyer for a government owned industrial firm which oversees all the nuclear industries in Brazil; nuclear physicist and president of an energy consulting firm; business political consultant; businessman with a major multinational corporation; another businessman and landowner.

5) labor: president of a union; director of a branch office for the Workers' Union (members of this union work in the nuclear industry); director of the Center for Women's Studies; former director of the National Council for Women's Rights and now president of a center which supports workers' rights; a political advisor for the Workers' Party (PT); a member of the executive of the Workers' Party and their international political advisor.

6) artists: a writer and film maker who has written a book on nuclear weapons development in Brazil; well-known Brazilian actress and political activist; two painters, and an illustrator who is publishing a book of illustrations on the social problems in Brazil.

7) the Church: priest and editor of a publication which publishes books on social issues; priest and administrator in the National Council of Brazilian Bishops in Brasilia (CNBB); priest and writer on liberation theology; priest who has

written extensively on moral issues; priest and professor at the Brazilian Institute of Development (IBRADS).

8) the scientific community: (this sector includes physical scientists and social scientists) four nuclear physicists (two of whom are former presidents of a science association); two political scientists with research institutes; and two anthropologists, who both teach and write about Brazilian society.

9) environmental advocates: three who work for environmental activist organizations; a lawyer and activist who works with a legal firm which deals with environmental law.

III. The Data Collection Process

Both an in-depth personal interview and a questionnaire were given to each subject who participated in the study. The combination of the two approaches offered distinct advantages for the collection of information and the two complemented each other in various aspects. This method of combining an interview with a written questionnaire has not often been done in belief system research. The personal interview enabled the researcher to create an open ended forum in which to allow the subject to speak freely on his or her own field and beliefs. Ideas and approaches were brought up that had not been anticipated by the researcher but that were extremely important to the understanding of Brazilian belief

systems. New questions were added to the personal interviews because of this more open process. A very important aspect of the interview was that the subjects could elaborate on the thinking behind their beliefs and a greater complexity of thought was able to emerge than is possible through a written questionnaire.

The advantages of the questionnaire are that it offered 1) a standardized measure by which to compare the subjects' responses and 2) a contained and focused instrument to guide the subject through a specific series of questions within several spheres of belief systems. This kind of directed focus is sometimes difficult to do in an interview which while rich in depth and complexity can get sidetracked from the central focus. Therefore, the combination of the two approaches added greatly to understanding the thinking process of the respondent which might have been missed by using only one of the methods.

IV. The Interviews

There were fifty-eight interviews conducted for this study. Each interview had two parts: 1) the first part was personally directed to the individual and his or her field of expertise and experience and 2) the second part was focused on questions about political beliefs and nuclear policy thinking. The interviews were developed in this pattern for several reasons. In order to better understand the point of view of someone from a particular sector, it was important to learn from them the beliefs that may be held by their field, i.e. their frame of reference or paradigm, and the

salient points and priorities for that field. In the first section the interviewer often asked what the priorities of that sector were, current events in that sector, and some important points of history. This first part of the interview also helped to develop a rapport with the interviewee because the issues being discussed were familiar and easy to answer. This rapport helped to establish an atmosphere for the second part of the interview which was less familiar to the interviewee and more conceptual and subjective. Questions on beliefs require thought and openness and the interviewee needs to feel comfortable and confident that his or her views are respected and are not being judged.

For example, when the president of a Brazilian bank was interviewed he was first asked questions about his field of expertise: the banking industry, the economic situation, inflation, and the debt. In the second part of the interview he was asked about his political beliefs. A military officer and professor at the War College was asked at the beginning of the interview, what the priorities of the College were, how he saw the role of the military today, and what socio-economic class levels were represented by the student body at the College. It was important to take advantage of the open opportunity presented by these interviews to gather unanticipated responses and information.

In the second part of the interview a more standardized approach was taken. Each subject was asked questions on nuclear policy in Brazil, e.g., should Brazil develop nuclear weapons and should research on nuclear weapons material be continued. If they

belonged to an institution of some kind, it was asked if the institution had taken a stand on the issue. For example, when interviewing members of the Catholic Church, it was asked if the Church had ever taken a stand on the nuclear weapons issue in Brazil or published a statement on the issue. In interviewing the editor of a major newspaper in Brazil, it was asked if the newspaper had taken a stand on the issue.¹ Each subject was asked if the International Atomic Energy Agency should be allowed to inspect nuclear fuel enrichment facilities and if Brazil should sign the Non-Proliferation Treaty. Each subject was also asked whether Brazil should put into effect the Treaty of Tlatelolco which establishes Latin America as a nuclear free zone. Another standard question was whether Brazil should have a nuclear powered submarine. It was also asked, if Argentina were to develop a nuclear bomb would Brazil have to have it, too.

The more philosophical questions were usually asked near the end of the interview unless the person being interviewed had already introduced the particular concept earlier in the conversation. For example, the interviewees were asked if they believe the world to be more conflictual or more harmonious. They were then asked if the world would tend to stay the way it is now or to change. They were also asked if there were regional differences in regard to conflict and harmony. The interviewees were allowed to continue talking on this topic as long as they wanted within the time constraint.

¹) The answer to this question in both cases was "no."

It was important to just let them talk because often important thoughts and beliefs emerged as they warmed up to the issues being discussed. Other areas that were discussed in the interviews were power, i.e. should Brazil become a great power and where do you believe power lies in Brazil. Other concepts were cooperation and competition with neighbors in Latin America like Argentina; the importance of national pride and prestige; trust in the law and in the new Constitution in Brazil; and the importance of historical events like the Falklands/Malvinas War and the Gulf War.

There are data missing from some of the interviews. In some cases there were time constraints and, therefore, a few of the topics were not discussed. In other cases the interviewees avoided answering some questions saying they didn't know or were uninformed about the issue. One military officer who was known to be well informed on nuclear research issues answered that he didn't have that information and it was not possible during the interview to pursue the matter further.

Most of the interviews were conducted in Portuguese and were taped. Nine, however, were done in English because these people were fluent in English and they preferred to speak English. One interview with a Brazilian nuclear physicist was done half in English and half in Portuguese because knowing that the interviewee spoke English it was requested that a few complicated nuclear questions be discussed in English. A few of the interviews were not taped because the circumstances of the interview were not conducive to taping. A few interviews were done under conditions

which were noisy or there were interruptions by staff, etc. In one case in order to have enough time to talk to a particular individual the interview had to be conducted in his car on the way to the airport. So, that part of the interview was not taped. In such cases notes were taken and the interviews were written up shortly thereafter.

After returning from Brazil all the interviews were transcribed and translated into English. The researcher did all of the translations. This was particularly important so that the researcher could be confident that the translations were done very carefully. Particular effort was made to select words in English that accurately conveyed the meaning that the respondent intended. All the interviews were translated before any formal analysis of the data was undertaken in order to avoid any inclination to form a bias in the selection of English words that might carry a different connotation than those which were intended by the interviewee.

For the purpose of analysis, the interview responses were coded. Every time a topic was mentioned that was relevant to the study it was marked and counted. In analyzing the responses to the questions on conflict and harmony, for example, a scale was developed along which to locate what the respondent said specifically about the balance between the two concepts. The range off the scale was: extremely harmonious, more harmonious than conflictual, equally harmonious and conflictual, more conflictual than harmonious, and extremely conflictual. Many times the

respondent said it in such words as, "I think the world is equally conflictual and harmonious," or "with the end of the Cold War the world has become more harmonious."

Other times the person would start out by saying it was a hard question to answer but then would go on to list the conflicts in the world without mentioning anything harmonious. These cases were harder to code. For example, in this case the response would be coded "more conflictual" because the focus was on conflict. It was not coded "extremely conflictual" because there was some hesitation which indicated some reluctance to give an extreme answer. The coding of conceptual discussions like these is complicated.

Such coding is to some degree subjective and has its flaws. However, it enables some generalizations to be made about the collective responses and some comparisons to more objective data to be considered. The analysis must be understood for this reason to be only suggestive and illustrative and not conclusive.

V. The Questionnaire

The written questionnaire has 82 questions and in most cases was delivered to the respondent prior to the interview and was collected at the time of the appointment. When this was possible the return rate was much better. In some cases this was not possible and the questionnaire was then handed to the respondent at the time of the interview. Later the questionnaire was picked up or mailed back. This method was less successful in terms of a return rate.

Overall, 46 of the 58 questionnaires were returned, a rate of 79%. The missing questionnaires do not relate significantly to any particular sector but are more or less evenly distributed among the different groups. The problem related mainly to trying to retrieve them after the interview and after having left the country. A few were mailed to the United States, however, after having written a series of letters requesting them. After three letters containing new questionnaires were sent out it was determined that the remaining questionnaires were not going to be forthcoming.

The structure of the questionnaire contains four spheres of beliefs: 1) personal beliefs, 2) beliefs about Brazil's political environment, 3) international political beliefs, and 4) beliefs about nuclear weapons policy in Brazil. The first three spheres of beliefs form the independent variables. The fourth sphere, which represents policy thinking on nuclear weapons related issues, formed the dependent variable. Each of the four segments of the questionnaire was further broken down into 8 concepts which cross all four spheres. Each of the 8 concepts has a question or series of questions within each of the four spheres. For example, the questions on "trust" asked 1) at the personal belief level: "Are people generally trustworthy or untrustworthy?" 2) at the Brazilian political level: "Should Brazilian leaders trust the Great Powers not to violate Brazil's interests?" 3) at the international level: "Should nations be trusted to abide by agreements or should they not be trusted?" and 4) at the nuclear weapons policy level: "In your opinion should Brazil trust that the

nuclear powers would never attack Brazil with nuclear weapons?"

The 8 concepts are: 1) conflict/harmony; 2) trust; 3) status; 4) threat; 5) control; 6) power; 7) moral considerations; and 8) competition/cooperation. The conflict/harmony, control, and competition/cooperation questions were derived from the operational code literature, according to the five philosophical questions and the five operational questions. (George, 1969) Some questions on zero/sum are included in the section on competition and cooperation. These were derived from a study done by Lock Johnson on Senator Church (1977). The trust and threat questions were derived from Rokeach's questions on the "Dogmatism Scale" (1960). The power, moral, and status questions were created by the researcher.²

Of the 82 questions, 68 deal with the 8 concepts just discussed in the four different spheres. The remaining 14 questions deal with specific nuclear policy questions, e.g., "Should Brazil have nuclear weapons?"

There were basically two methods for the respondent to mark an answer to a question. Each of the 68 questions dealing with the 8 concepts was to be answered by marking a number on a 9 point scale which represents a continuum between two polar opposites giving a range of choice between the two extremes. For example, harmony was represented by one end of the scale and conflict by the other end. Question one asks:

²) The concept of the need for power was derived from earlier studies by Winter, 1973; and Winter and Stewart, 1977.

Is the nature of international politics more one of harmony or more one of conflict?

Harmony

Conflict

1-----2-----3-----4-----5-----6-----7-----8-----9

If the respondent circled the number one, he or she was expressing a belief that the world is extremely harmonious. If the five were circled the respondent believes the world to be equally conflictual and harmonious. A mark on the seven would indicate that the respondent sees the world as more conflictual than harmonious but not extreme. A nine, however, would mean that the respondent believes the world to be extremely conflictual. The nine choices offered a wide range of possibilities.

The remaining 14 questions, those on nuclear policy, required a simple yes/no answer. These were questions like should Brazil have a nuclear submarine or should Brazil sign the Non-Proliferation Treaty. An example is question number 57:

Should Brazil continue its research on weapons-grade nuclear explosive material? Yes/No

These are really either/or questions. One either signs the Treaty or one doesn't, and one either continues the research or doesn't continue it.

Four of the yes/no questions asked the respondent to explain his or her response and a space was left for something to be written in.

For example, question 55 reads:

Are there reasons for Brazilian leaders to fear internal threats to Brazil's security? Yes/No If the answer is yes, please explain what those internal conditions are.

The questionnaire was initially written in English and then translated into Portuguese. It was then pretested on a few US subjects and then with a small group of Brazilians after arriving in Brazil and prior to administering it to the sample. A few minor language changes were made.

VI. Accessibility of Subjects

Unlike subjects in some cultures, Brazilians tend to be open and accessible. The researcher had lived in Brazil previously, speaks Portuguese, and has maintained contact with several Brazilians. People were very helpful in introducing new people and giving out names and offering their names as an introduction. People from the various sectors were equally accessible except the military.

It was much harder to achieve initial introductions to persons in the military. However, several approaches were used and once a few contacts were made the process opened up considerably. All three branches of the military, the navy, army, and airforce, are represented in the study and at various locations in the country, i.e. the Army War College in Rio, the Naval Center for Research in Rio, the Ministry of the Airforce in Brasilia, the Naval Center for Research in Sao Paulo, the Center for Strategic Studies in

Campinas.

Refusals to be interviewed were mainly because of time schedules. The people were either traveling or were booked on the days that I could be in their geographic area. People were in general extremely accommodating and hospitable. The secretaries and staff were extremely helpful in trying to get appointments. No one refused to be taped when asked.

VII. Content Analysis vs. a Direct Questionnaire and Interview

The operational code methodology generally has been one of content analysis. Speeches and other writing samples of specific political leaders were selected and examined for patterns of beliefs pertaining to the ten philosophical and instrumental questions established by Alexander George. (George, 1969) Systems of coding were established to give greater standardization for analysis and comparison. Ole Holsti developed a coding guide to be used for content analysis in operational code studies. (Holsti, 1977) This process has been used in many research studies (Anderson, 1973; Holsti, 1970; Johnson, 1977; Kavanagh, 1970; McLellan, 1971; Putnam, 1973; Starr, 1984; Stuart, 1979; Stuart and Starr, 1981/82; Tweraser, 1974; Walker, 1977; Walker, 1986; Walker and Falkowski, 1984a; Walker and Falkowski, 1984b; Winter and Stewart, 1977).

The problem with this approach is that the subjects were not asked directly what their beliefs were across a range of topics that the researchers were studying. The subjects' beliefs were

extrapolated from written material which focused on a variety of topics. This researcher wanted to examine what the responses would be when the subject was asked directly his or her beliefs on specific topics and in predetermined spheres of thought. Therefore this research was structured along the Rokeach model (the dogmatism studies) using a direct approach instead of the more indirect manner of content analysis. ³

³) For guidance in formulating the questions and the interview schedule see Howard Schuman, 1979-80; Howard Schuman and Stanley Presser, 1981; and Delbert Miller, Handbook of Research Design and Social Measurement, 1983.

Chapter Four

BELIEFS ABOUT CONFLICT AND HARMONY

This chapter seeks to examine beliefs about conflict and harmony¹ held by members of the Brazilian elite. The data were gathered from personal interviews in which people were asked direct questions about their beliefs.² The study also examines the relationship of these beliefs to specific policy preferences and thinking on questions dealing with the development of nuclear weapons in Brazil.

This study contributes to existing research on beliefs systems in the field of political psychology in two significant ways: 1) methodology and 2) conceptual development. The methodology of this study differs from previous work by the use of interviews in combination with an extensive 82 item questionnaire. As mentioned earlier, most work on belief systems has been done through the method of content analysis. By going to the respondent and asking

¹) I am aware of the difficulties in the usage of these two terms, conflict and harmony. Here they are intended to mean a conflict or harmony of interests and in this sense are polar opposites. I have chosen to use this language to maintain continuity with the literature on the operational code.

²) Previous research has tended to use a method of content analysis of statements made on various topics by the person prior to the study. Some notable exceptions are Lane (1962) and Tetlock (1984) who did conduct interviews on beliefs. However, they examined beliefs in relation to ideology and did not explore the relationship between beliefs and a specific policy issue.

direct questions about beliefs and policy preference, the researcher can have a greater opportunity to discover thought patterns and conceptual linkages between beliefs and policy choices. Instead of having to rely on what a subject may have said in a speech or prepared statement, this direct method asks specific questions which elicit answers on beliefs which this research seeks to examine. The results of the interviews show that this method has been very productive in revealing conceptual steps in the thinking process. Not only do the respondents offer a broad description of their beliefs on issues relevant to the research, but they also have provided expressions of the complexity which enters into their thinking process. This complexity which the interviews reveal highlights the weaknesses in the operational code assumptions. The operational code assumptions appear a) to be too simplistic and b) to have missed the importance of values in determining policy choice.

I. WORLDVIEW AND THE "MASTER QUESTION"

A. The Operational Code Assumptions

Whether the world is perceived as conflictual or harmonious, is the essential component of the "master question" in the operational code literature. Political scientists who study the operational code, as discussed in chapter one, posit that "the way national leaders view the

world and each other fundamentally affects their policy choices." (Walker, 1990, p. 407) It is assumed that beliefs about the extent and nature of conflict and harmony in the world, as elicited by the "master question," reveal the basis for a general worldview by the individual. According to the operational code logic, then, this worldview would significantly shape policy choices. This research study set out to test that hypothesis. It was found, however, that when subjects were asked directly about their beliefs on worldview and policy thinking, there was no significant relationship between the two variables. Why did this discrepancy occur? It has been assumed throughout the operational code body of literature, as discussed in chapter one, that how a political decision maker viewed the world, be it realism, global order, or some other view, directly molded a pattern of policy preferences. The results of this study call into question that basic assumption.

B. Problems With the Operational Code Assumptions

While people do seem to have a worldview, the operational code questions, which were formulated during the Cold War era, may focus too narrowly on nation/state rivalry and may not reflect the complexity and changes that have occurred since that time. During the Cold War, the U.S.-Soviet conflict was the focal point of foreign policy thinking. Today, a kaleidoscope of multiple issues has replaced that singular

focus.

The problems with the operational code theory fall into several categories: 1) the definition of the concepts raised in the operational code questions may not be universal or carry the same interpretation across individuals or across cultures; 2) the world is complex and answers to questions on worldview have to be taken within a specific context and may not be generalizable; 3) today's concerns and conflicts do not solely relate to an opponent, but may be collective problems like pollution, terrorism, etc.; and 4) other values like the importance of power may supersede beliefs about worldview. Evidence of these issues are found in the interview material and will be discussed in the following pages.

II. EVIDENCE OF WORLDVIEW FROM THE INTERVIEWS

The complex responses to the questions in the interview demonstrate that this group of people has thought carefully about the nature of conflict and harmony in the world and has formed differentiated sets of beliefs on this issue. Personal interviews were conducted with 58 members of the Brazilian elite.³ They were asked as a part of the interview if the world is more harmonious or more conflictual. Of the 58 people interviewed 42 responded to the question on conflict

³) In this study "members of the Brazilian elite" will also be referred to as "elites" for reasons of brevity.

and harmony.

A. Conflict and Harmony on a Global Level

There were 39 members of the elite who discussed conflict and harmony on a global level.⁴ The responses are broken down into five categories. Table 4A shows how many people responded in each manner.

Table 4A

(N=39)

Views on Conflict and Harmony in the World

- 1 - world is extremely conflictual
- 14 - world is more conflictual than harmonious
- 7 - world is equally conflictual as harmonious
- 17 - World is more harmonious than conflictual
- 0 - world is extremely harmonious

The sample of elites was about evenly divided on this issue. The somewhat larger group thinks the world is more harmonious than conflictual, but that slight difference ought not to be taken seriously in a sample of this size. A military officer who was interviewed had this response:

I think the world is basically more harmonious due to the end of the Cold War and communism and the opening up of the Soviet Union. This ended the conflict between East and West but, there are conflicts that will continue, for example, the Arab-Israeli conflict. (interview #53)

⁴) Some of the interviewees when asked about conflict and harmony only focused on domestic issues and not global issues.

Like this response by the military officer, many of the interviewees who believe the world is more harmonious cited the end of the Cold War. This harmony is qualified, however, by continuing conflicts like ones in the Middle East or, as others mentioned, Yugoslavia, Cambodia, and South Africa. Because of these kinds of observations, no one in the sample believes that the world is completely harmonious.

An interesting phenomenon is that, while the military feel the world is generally more harmonious or equally harmonious and conflictual, the priests that were interviewed tend to believe that the world is more conflictual. Their focus was on social issues.⁵

One priest explained it this way:

I think the world is more conflictual. This is a judgement according to fact, objective. I think the world is more conflictual because there are always military threats. . . . In second place I see a lot of conflict in the economic war, the manipulation of natural resources in one dimension or another or a boycott of products, this game of pressures of exportation and exploitation because of oil. (interview #23)

The most extreme view about conflict was expressed by a member of the business community:

In terms of conflict and harmony, I think the world is getting worse and worse. I think we are approaching the end of civilization. . . . There are conflicts all the time. They are not necessarily armed battles or wars, but there is a

⁵) In a later chapter the different sectors are ranked according to their beliefs and policy issues.

permanent conflict which is an enormous waste for society. (interview # 25)

Seven people explained that the world was about equally harmonious and conflictual. The response of this journalist is representative of this group.

In regards to harmony and conflict, the world is in the process of adapting. From the point of view of conflict, things could become more dangerous. However, I calculate that this process of adaptation should take about a decade or until the end of the century. At that time, the world could become more harmonious. It is a dangerous time for certain societies and for humanity in general. It could go either way. It is a time of opportunity. (interview #45)

B. Beliefs about Conflict and Harmony in Brazil

Many of the respondents (N = 27) ⁶ talked about conflict and harmony in Brazil. Beliefs about Brazil's political environment show a slightly different trend than beliefs expressed about the world. The same range of categories was applied to these answers. Table 4B shows how many people responded in each manner.

⁶) The question in the interview on conflict and harmony was open ended and the respondents were free to talk about any aspect of that question that they wanted. Therefore, some found it important to talk about Brazil and others did not. Time constraints were also a factor in the lower response rate on this aspect of the question.

(N=27)

Conflict and Harmony in Brazil

- 2 - Brazil is extremely conflictual
- 19 - Brazil is more conflictual than harmonious
- 0 - Brazil is equally conflictual as harmonious
- 6 - Brazil is more harmonious than conflictual
- 0 - Brazil is extremely harmonious

In this case many more of the elites interviewed believe that Brazil is experiencing a lot of conflict. This is in contrast to beliefs on the global level where the answers were split between harmony and conflict. An interesting phenomenon in the interview responses is that, in general, those who described Brazil as being more harmonious referred to Brazil's relations to other nations and did not mention internal social issues. A high level government official discussed harmony for Brazil in this manner:

Brazil has no enemies and no conflicts with other countries. Brazil is peaceful and can and should have harmonious relations with the world. (interview #47)

Those who believe that Brazil is more conflictual than harmonious focused on socio-economic issues in Brazil, like the gap between the rich and poor. A priest explains:

We have a society which is extremely unequal. In the big cities we have a mass of disinherited people who are regularly exposed to seeing how those in power live. This creates a very high degree of conflict. (interview #57)

A member of the Workers' Party also explains:

Here in Brazil, there is more of a feeling of conflict because, although there are no

international military problems here, the people are dying of malnutrition and the death is slow. (interview #56)

According to these interviews, beliefs about conflict and harmony for Brazil depend on what aspect of Brazilian life the respondent is taking into consideration or how he or she views the balance of these issues.

C. Future Trends in Conflict and Harmony

Asking the respondent to express views on conflict and harmony as they are today may not reveal whether the subject believes there to be a trend in one direction or the other. A leader may view the world as conflictual at the moment, but actually believe the trend is toward greater harmony. In analyzing policy makers' views on conflict and harmony Holsti (1977, p. 157) suggests:

Because we are unlikely to find many policy makers who regard the contemporary situation as anything but conflictual, it may be useful to restate the question slightly, while still maintaining the basic conflict-consensus distinction. Thus, those who regard the political universe as basically harmonious will tend to view contemporary conflict as a temporary or abnormal condition capable of being remedied. At the other end of the spectrum are those who believe conflict is an inherent and inescapable aspect of the human condition.

Holsti suggests that most policy makers view the world as conflictual. So, by simply asking whether the world is harmonious or conflictual, one may not be able to ascertain more subtle beliefs about the human capacity for either conflict or harmony. It appears that it would be useful to

expand the question. Therefore, in this study it was asked if the balance of conflict and harmony would stay the same or change in the future. Holsti points out (1977, p. 157) that those who tend to believe the world to be more harmonious will focus on those aspects and tend to see conflict as temporary while those who view the world as conflictual will see harmony as temporary. This hypothesis does find support in the interview data. For example, a Brazilian business leader interviewed for this research believes that the world is basically on the road to greater harmony:

I think in the confusion of everything, the number of people who have become people of good will has grown a great deal. It is because they understand that survival depends on cooperation. . . . The Gulf War seemed to us inevitable. I know a few of the Gulf nations and they have grave social and economic problems as well as poor sanitation standards. There are high levels of illiteracy and religious fanaticism. So, it is a problem and a very difficult region with little tolerance between groups. It is in a primitive phase of national coexistence which the West has overcome after many years of wars as in Europe with all its Franco/German wars. It has overcome this conflict because the level of literacy in the population and the system of democracy is better. The people vote there. This is to say that people who have a higher level of schooling have better reasoning and understanding, a better view of reality. . . . We have to have a more constructive posture. The basic position that Brazil favors is peace through negotiation. There is no other road. I think that the Gulf War is a war that the people had to accept. It is not a desired war but, it was imposed. They were circumstances that could not be allowed. It could not be permitted that Saddam Hussein occupy Saudi Arabia. People did not have a choice. We had to accept it and go forward." (interview #49)

It is important to note that this business leader

emphasizes the growth in the number of people of good will but then he somehow feels he has to integrate the Gulf War into this belief system. The War had just ended a few weeks before the interview. He does this by justifying the war in terms which tend to stress world order and the curbing of aggression. It was regrettable but we have to "go forward." He also emphasizes the importance of education and the development of understanding which he seems to believe leads to a kind of evolutionary progress towards peaceful coexistence. The Gulf nations would be very low on his evolutionary scale so, in that case the war fits into his system of beliefs about the evolutionary character of harmony.

In contrast an interview with a leading Brazilian anthropologist reveals a belief that conflict is the norm and harmony is temporary.

"Human history is obviously full of conflict. . . . In social life there is always tension between different kinds of interests, a kind of negotiated reality. Different actors have always negotiated reality. Harmony would be a certain period of time while the negotiations are working. In some way or the other the actors are agreeing explicitly or unexplicitly on certain subjects. It is not necessarily conscious that I am going to do this or that. Social life is a constant interaction. It is a permanent negotiation. There will be moments when negotiations will not work. Then there will be conflict. Conflict is always a possibility. Here when we are talking we have a possibility of conflict. It is the spirit of tension which defines social life." (interview #2)

As Holsti suggests, beliefs about the human potential for harmony or conflict are important (1977, p. 157). Despite

present conditions, a belief in the possibility for harmony could be a factor in shaping other beliefs. Many of the elites in this study (N=36) talked about future trends and expressed their beliefs about the future for conflict and harmony in the world and in Brazil. Table 4C shows how many people described future trends in each manner.

Table 4C

(N=36)

<u>Future World Trends</u>	<u>Future Brazilian Trends</u>
7 - more conflictual	18 - more conflictual
20 - stay the same	16 - stay the same
9 - more harmonious	2 - more harmonious

The results show that while there is a relatively balanced range of views about the world, most of the Brazilian elites interviewed believe that the political environment in Brazil is more conflictual and many believe it is getting even more so.⁷ These results emphasize the point that views about conflict may vary depending on what political level the respondent is focusing.

Many of the interviewees have different feelings about the world than about Brazil. Some see the world as more harmonious but see Brazil as more conflictual. Even some of those who think the world is basically harmonious mentioned

⁷) For a breakdown by sector on beliefs about conflict and harmony, see Table 3F.

that certain regions are conflictual. A few mentioned that Latin America has little or no conflict between nations. Some stated that Brazil has no national enemies nor conflicts with other nations.

However, some explained that there is widespread conflict between the rich and the poor throughout Latin America. Of the 19 people who believe that Brazil is more conflictual (see Table 4B), all focused on social issues and not on conflicts between nations. Poverty, hunger, and crimes like mugging and carjacking have been on the rise in Brazil for over a decade and there is a very large number of homeless and abandoned children in the major cities. Those who focused on these issues tended to see Brazil as more conflictual.

The interviews demonstrate in a substantive way that this group of elites has thought about the world in terms of conflict and harmony and have formulated distinct beliefs about the balance of these qualities.

III. Evidence of Problems With the Operational Code Assumptions

While people appear to have developed a worldview around the concepts of conflict and harmony, using that set of beliefs to predict policy thinking presents several problems for the operational code assumptions.

A. The Definitions May Not Be Universal

The first problem is that people may or may not believe that there is any "essential nature" to the political universe. The political world may have no natural form at all, but the question assumes that there is one and asks the respondent to describe something that he may or may not believe exists. One woman who was interviewed explained that, "there is no natural way of being in terms of conflict and harmony. There is no natural condition. It is a matter of negotiation." (interview #16) Two others expressed the same view. While these people were reluctant to express a view on the nature of conflict or harmony, they still have a worldview. Their worldview is that these qualities are always negotiable.

While some people disputed that there is any natural state of harmony or conflict, others challenged whether there is a commonly understood definition for the concepts of conflict and harmony. Harmony to some may mean a legitimate and accepted commonality of interests, while to others it may mean imposed order. In Brazil, during the 21 years of military rule, the imposed order by the military regime may have appeared on the surface to reflect a harmony of interests, while it may actually have been a result of the repressive nature of the government's policy. The mayor of a town in Brazil had this to say about the perception of harmony:

"Harmony as such does not exist, does not exist.
Looking at history I see that harmony has not

existed, in any land. Where you might perceive a certain harmony you would find deep down that it was not harmony. It was the domination of one over the other. The domination of one idea over another idea. Order. Depending on the moment it might be physical force or at another moment it might be the force of ideology. Another time it might be the force of capital. It might be religious ideology. Here in Brazil people are good to each other in order to gain entrance into the kingdom of God. It is a form of threatening people. So, many people might be suffering but it appears to be harmony. It is not true harmony. So, I believe there is a difference in form, the same for history as for mankind. Up to now harmony as I think of it does not exist. Disharmony exists only in different ways and not just here but in the whole world. My hope is, and my political work as mayor is, to work for greater harmony in the future. And I hope that in time humanity will mature toward harmony and I believe in this. . . . What I hope for is true harmony which comes from the free conscience of the people and not simply order on the surface which underneath is really domination either ideological or authoritarian." (interview #51)

This is a rich and fascinating passage. Of all the interviewees his response was the most extreme on this question saying that essentially there is no harmony at all. He also offers here another definition of harmony, that of imposed order. This further complicates the notion that there is some common understanding or meaning for these concepts. He also expresses a hope that people can mature and can achieve what he describes as "true harmony." Even though, for him, harmony does not exist today, the value that he places on it and his hope for achieving it, has become a strong motivating factor in his work as mayor.

Conflict to some may convey violence and force while to others it may mean open expression and the necessary exertion

of will. A Brazilian priest had some comments to make about conflict and harmony and his view, similar to that of the mayor, that harmony is imposed order:

"Our world is richer, and perhaps with this human richness of liberty and of possibilities evidently also grows a conflictual part of the world. We are leaving an era of society in which the father represented the father of the family, of the school, and of the church. This father was a bit authoritarian. He ordered and he was obeyed. And when this is done you have a harmony. There was superficial order which hid the conflict. Today is a time when I think we have less order in the world but, perhaps we have even more chance for harmony because a person has more possibility to grow. But, at the same time people have more possibility to go off the road, and this goes for societies as well as people. Today what is happening in society and with the individual is that they are facing normal conflicts and they have to conquer this conflict and not give up. Conflict is beneficial. It is a good venture. I think that a person that does not have conflict, that only obeys, is not going to grow sufficiently. Conflict reaches the point of solution after suffering and giving pain. What happens during that period is that you have pain without perspective. You have a cross that does not redeem you. But when this cross is the redeemer it is worth the trouble. You have to have a rebirth, a tomorrow." (interview # 63)

This interviewee emphasizes that conflict can be beneficial and is a healthy part of growth. The priest believes that conflict is not to be avoided or repressed but is an experience that should be valued. This belief adds a new dimension to the concept of conflict which does not appear to be a part of the original assumptions of the operational code. The mayor and the priest both believe that harmony which is merely order is not to be valued. These two people then have completely reversed the traditional understanding of

these two polar concepts. In a country like Brazil which is just now emerging from a repressive military dictatorship, openly expressed conflict might be welcomed as a sense of new freedom and expression. This suggests that the cultural/historical context of beliefs and perceptions should not be overlooked in the analysis of belief systems.

Consequently, the value of conflict and harmony in a society may vary from person to person. The definition and the value placed on these qualities are not necessarily fixed as seemed to be assumed by the operational code research.

B. The Complexity of Multiple Contexts

The complexity of political issues also presents problems in pinpointing a worldview that would hold up under all circumstances. Beliefs about conflict or harmony may or may not stay the same across multiple issues and at various levels within an issue. There are geographic, historical, and temporal aspects to these two concepts, as well. For example, Europe, which has had a history of conflict, is in the process of formulating a harmony of interests through the efforts of the EEC (European Economic Community) and the CSCE (Conference on Security and Cooperation in Europe). However, even within Europe, violence and conflict have erupted in the former Yugoslavia. Other regions like the Middle East also show high levels of conflict. On the other hand, the nations of Latin America have had little inter-state conflict but, have

undergone severe internal conflicts. Because of this complexity, reflections on conflict and harmony in the world tend to be very context specific.

The study demonstrates that beliefs about conflict and harmony are extraordinarily complex. The sample of Brazilian elites (N=39) mentioned 49 different issues when discussing the causes of conflict and harmony in the world and in Brazil. The two most frequently mentioned were broadly described as military-political issues and socio-economic factors. The next most frequently mentioned were first world/third world relations, and cultural and historical issues. Others that were mentioned were more specifically described as territory, ideology, religion, East/West relations, poverty, domination, competition, racism, inequality, development, class conflict, technology, and nationalism. As sources of harmony people mentioned issues like brotherhood, neighborliness, education, good will, tolerance, negotiation, information, order, ecology, communication, and freedom of expression. Their beliefs in general depended on which issues were the focus of their discussion. (see table below) The extensive list indicated in this table is a further illustration of the complexity of beliefs about conflict and harmony and emphasizes that these beliefs are extremely context specific.

Table 4D

(N=39)

<u>Type of issue mentioned</u>	<u>Frequency mentioned</u> (one respondent could mention several issues)
Military/political	26
Socio/economic	26
Cultural/historical	8
1st world/3rd world	8
Domination	4
Competition	4
East/West conflict	4
Ideology	4
Territory	4
Misery/hunger/poverty	4
Class conflict	3
Development	3
Religion	3
Racism	3
Inequality	3
Nationalism	3
Communications	2
Explicit/latent	2
Ethnic	2
US intervention	2
Ecology	2
Nuclear threat	2
Democracy	2
Technology	2
Education/illiteracy	2
Speed and glut of information	1
Rapid transportation	1
Goodwill	1
Arms sales	1
Volunteer work	1
Adventuristic dictator	1
Tolerance of differences	1
negotiation	1
Civil/military	1
Abandonment	1
unpredictability of conflict	1
Between species	1
Character	1
Media	1
Pax Americana	1
Crime	1
Gender	1
Free expression	1
Power	1
Order	1

Disintegration of cities	1
Violence	1
Brotherhood	1
Neighbors	1

An anthropologist who was interviewed for this study explains the complexity of some of the social tension and conflicts within Brazil today:

"Inside Brazil there are different systems operating. Brazil has a modern more individualistic system and a more traditional hierarchical system operating alongside each other. So, you have certain populations which will be operating under a basically modern system and others will be traditional. You have situations and conflicts that will operate through an individualistic code and others that will operate through a traditional hierarchical code. At certain moments the kinship and family pattern will be basic and in other situations it will be the individual himself. You have these different combinations. I think that this happens all over the world but in Brazil this living together of these different cultures is very tense. One person can be living one moment a modern code and in another moment a traditional code. It does not mean that it will necessarily evolve from the traditional to the modern, no. . . . It is not an inevitable process. There is a feeling of conflict and tension in general in Brazil more so than at other times because the development of modern life is in clear conflict with traditional values. I think that Brazil is living in a kind of anarchy."
(interview #2)

His explanation of Brazil's inner social tensions illustrates the addition of another layer to the already complex system of beliefs on the concept of harmony and conflict. He points out the conflicts that go on within an individual as he copes with the confusion of mixed cultural values. He emphasizes that it is not an evolutionary process. It is not going to get better. Another Brazilian anthropologist explains:

In talking about harmony or conflict people may answer differently depending on whether they are thinking about personal relationships like in the family or whether they are thinking on a national level or an international level. I think that conflict is the center of perceptions, of anguish, of anxiety, and of symbolic representation.

Conflict is at the center of American culture in the liberal tradition. It is a natural part of the social dynamic. Therefore, it is always present because the idea of plurality is always present. It is a part of the dynamic of the political process which is in general the outcome of the collective life.

In Brazil, however, conflict is at a crisis level. There is nearly a collapse of order. The perception is that life is not flowing normally as it should flow. Conflict does not appear to be as an integral part of life like the normal polarity of conflict and harmony in the United States. There is greater harmony on a global level but, in Brazil it is the contrary. . . .

It is difficult to generalize but, there have been studies of Brazilian culture along with the study of Ibero-American cultures in general that show a fear of conflict on the part of the people. It seems to be a general characteristic. It is manifested in a practical sense in political affairs, for example, the conciliation of the elites. The negotiated solutions, however, are not democratic negotiations. They are shielded negotiations by the small elite which are always evidenced by the fact that the conflicts are not really resolved. . . .

But it is important to have an understanding that conflict is normal. When conflict appears more frequently it is a productive means for democratic institutions to be implanted. It is a normal aspect of collective life."
(interview #9)⁸

This anthropologist emphasizes how in Brazil the fear and repression of conflict has kept society from utilizing

⁸) For further reading in this area of Brazilian culture see Gilberto Velho (1987) and Viola Sachs et al. (1988) This study is focused on belief systems and nuclear policy and must stay within those constraints. However, this area might suggest future research.

conflict to resolve the issues of collective life. While he may believe conflict to be healthy and productive he acknowledges that others do not share that belief and that has had an impact on Brazilian policy. His comments further emphasize the complex layers of beliefs on conflict and harmony as they cross different spheres of thought and focus on different issues.

C. The Concept of an Opponent is Too Narrow

A problem arises in the third part of the "master question" dealing with "political opponents." Political conflict today does not arise only out of competition with a rival or opponent in the traditional sense. Today's problems often involve global issues like pollution, the distribution and preservation of global resources, and complex economic and monetary interactions. While there still are political rivalries between nations, many conflicts are more complex and diffuse and may not involve a specific opponent. Many Brazilians mentioned problems with inflation, corruption, and hunger. A businessman points at hunger as a universal problem and source of conflict:

There are millions of people dying of hunger each year, millions, with food grown nearby which goes to Switzerland to feed cows in the winter. This is big conflict. (interview #25)

These problems cannot be easily attributed to an opponent. Therefore, asking what is the nature of one's opponent may miss the possibility that a whole set of beliefs

about conflict does not pertain to an opponent as the source of conflict. The sources of conflict play an important role in policy choice. Policy solutions to conflicts involving inflation, pollution, corruption, or hunger would most likely not incorporate military security prescriptions.

D. Intervening Variables May Supersede Beliefs About Worldview

The problem of intervening variables also must be examined. Operational code researchers posit the hypothesis that world view shapes policy preference, but it must be recognized that there may be other values that interfere with this direct relationship.

1. Values As Intervening Variables

A leader may see the world as generally harmonious, but may, for reasons of personal goals or professional responsibilities, place a high value on power and competition and choose policies that are highly militaristic and aggressive which one might expect to be the result of a conflictual worldview. On the other hand, someone may believe the world to be highly conflictual but may feel a moral obligation to work for harmony despite the odds against it.

This mayor explained that he believes that there is no real harmony at all, only imposed order. Yet, his reaction to this belief is not to prepare to fight and defend himself but, on the contrary to dedicate his work to developing true

harmony in the future. He also said:

Brazil should not have nuclear arms. . . . I think it is important to be an example to not have nuclear weapons and to work for humanity not to have them. (interview #51)

The mayor's belief that there is a high level of conflict in the world, ought to predict a military defense approach to policy thinking. Yet, he thinks, on the contrary, that Brazil should not have nuclear weapons and should work for universal nuclear disarmament. His emphasis on working toward a kind of human consensus on nuclear disarmament does not seem to logically follow his conflict oriented worldview. Even if one looks at the mayor's beliefs about the human potential for harmony, one would not be able to predict his policy preference. This is what he says about where the world is going:

"We are returning to the cave era. We grow technologically and scientifically but, we don't grow in conscience. Like in the cave days one wants to kill the other person." (interview #51)

There appear to be intervening variables like moral issues in this case which become more important to the respondent than a worldview.

2. Fears From the Past Which Shape Beliefs about the Future

A belief in the unpredictability of conflict and the fear that it evokes may also be an important intervening variable in the relationship between world view and beliefs about policy preference. When hostilities erupt without previous

warning, this unexpected conflict can elicit feelings of loss of control and defenselessness. Unpredictability appears to be a more salient phenomenon for some than for others. An admiral who was interviewed explained his beliefs about the unpredictability of conflict. While he also believes that the world is equally harmonious as conflictual, he had this to say about conflict:

"The Malvinas War has meant several things for Brazil. First is an enormous logistical problem. . . . The other thing that this calls into attention is the unpredictability of conflicts. . . . The problem of the unpredictability of conflict is something which is somewhat frightening. It is the same with the Gulf War." (interview #48)

Though he views the world as equally harmonious and conflictual the salient factor for him is the "unpredictability of conflict." This aspect is "frightening." This becomes an important intervening factor. If conflict is unpredictable and it is frightening then one must always be prepared because you never know when it is coming. This aspect of conflict seemed to be a important factor for several of the people in this category who advocated greater security measures. This also suggests that professional role may also influence responses to the "master" question. It is the job of a military officer to prepare for conflict.

3. Lessons as Intervening Variables

The admiral uses the Falklands/Malvinas War as a lesson of history to demonstrate the unpredictability of conflict.

Lessons of history whether they are applicable to new situations or not are an important method that decision makers use to as an aid to dealing with complex decisions. (George, 1992, p. 464) Lessons are a cognitive tool for organizing cause and effect relationships that can be essential for survival. Human beings do not have to directly witness an event to learn the consequences of certain actions. Learning can take place through reading or hearing about something that has happened. It would seem that the closer one is to witnessing the event first hand, however, the more powerful the linkage between the cause and the effect might be. The admiral mentions in the interview that he had been in Buenos Aires a week or so before the war broke out and he had seen no evidence of the impending conflict. It had been a complete surprise.

Another military officer also talked about the lessons of history:

It is a lesson of history that those who have more advanced technology have better conditions in every aspect of life. Those who have better technology have power." (interview #30)

This respondent focuses on the importance of technology and the lesson of history that technology brings power. In these cases other variables have intervened in the direct relationship between world view and policy preference. The cognitive leap from worldview to policy preference may be too great to form any assumptions about the capacity of worldview to shape policy thinking.

IV. The Usefulness of Worldview in Predicting Policy Thinking

A. The Operational Code Typology

The purpose of the operational code studies has been to study the link between beliefs about worldview and policy choice. Ole Holsti (1977, pp. 165-178) has developed a typology which attempts to link in a logical manner beliefs on conflict and harmony and policy prescription. The types range from Type A who believes in the potential for a harmony of interests to Types E and F who believe that conflict is permanent and there is no effective means for peaceful change. In terms of policy prescription, Type A searches for choices which are based on "areas of common interest" and "broader values than narrow national ones." (Hostli, 1977, p. 167) Types E and F select goals "within a framework of national interests" where "military capabilities are important." (Hosti, 1977, p. 176.)

B. Results of the Interviews and Predictive Usefulness

The interviewees were asked several questions about their beliefs on issues dealing with nuclear weapons. No one in the study completely advocated the acquisition of nuclear weapons. It must be explained that approximately 8 months before the interviews, the president of Brazil, in November 1990, had condemned the secret military nuclear weapons research program and had publicly closed down the test site. It, therefore,

may have been politically unacceptable to support the program, particularly among these selective and highly visible elites who were included in this study. However, some of the interviewees did support continuing the research on the enrichment of nuclear material to the weapons grade level and advocated the development of a nuclear powered submarine even though the process of enriching nuclear material for propulsion is the same as that for weapons. The facility at Aramar is enriching uranium to the 20% level. The nuclear physicists who were interviewed explained that once the 20% level has been achieved, increasing it to 90%, the level required for weapons, is basically a political decision.

A former national senator had this to say:

"There is not the slightest need for Brazil to have an atomic bomb. . . . What you can say here is something about the major military desire to build an atomic submarine which would only add a small amount of power. It will always be an instrument of defense and not of attack. But it is important. They should continue with the research on the submarine. We have to master the technology and we have to have the submarine. One must think about the fact that the life of nations is not a harmonious thing. One lives fully in a history which creates problems. Look at the case of Argentina with the Malvinas Islands. If Argentina had had competent submarines the English fleet would not have arrived at the Malvinas."
(interview #33)

Here he emphasizes the lack of harmony but later he goes on to say:

"I think the world is equally conflictual and harmonious, neither more nor less. It is that at certain moments conflict turns different colors. Like Clausewitz said, 'war is like a chameleon; it changes color depending on the epoch.' . . . It is

very difficult to predict the future." (interview #33)

Though he states that harmony and conflict are equal he seems preoccupied with conflict and the unpredictability of conflict like the Malvinas War and the need to be prepared. He also seems to believe that "mastering nuclear technology"⁹ is extremely important. This is a very common theme running through all the interviews.

These intervening variables appear to have more saliency for the senator than his rather balanced worldview. The direct link between his worldview and his policy preference is interceded by more important needs like technology and being prepared.

The importance of developing nuclear technology for Brazil is also supported by a high ranking military officer in a central policymaking position on nuclear issues in Brazil:¹⁰

"The research here is to develop a capacity. The navy has two types of research: 1) COPESP in Sao Paulo and 2) the Center for Research in Rio. Within the scope of naval research falls the study of nuclear propulsion, which is handled at COPESP.

⁹) This phrase is frequently mentioned in the interviews and basically means to have the capability to understand and develop nuclear technology, both fuel enrichment processes and application.

¹⁰) Steps have been taken to protect the anonymity of the interviewees. The roles that they play in Brazil are important and I have tried to indicate those roles while still protecting their identities. The thinking of those directly connected to policymaking on nuclear issues is particularly important for this study.

Today there exists an enormous number of possibilities for nuclear propulsion in the world. We cannot remain within this century without nuclear propulsion, because in the next century we would be permanently in the position we have been in during this century. It is possibly the most important research program there is." (interview #30)

He also talks about the meaning of the Gulf War for Brazil:

"The Gulf War was meaningful not only for Brazil but for the whole world. For us there was the shock that the rest of the world felt from the war. High tech weapons like the ones that were used always function very well. In the war with Egypt, for example, the Israelis had better technology and they won. This a matter of history. Those that have the better technology win. . . .

The military officer believes very strongly that high technology is the solution to winning and to power, but he extends the importance of technology even further:

"Those countries that have technology do not have a hunger problem. Those who lead their country to high technology keep poverty under control." (interview #30)

He has this to say about conflict and harmony:

"I would judge that the world is more harmonious, but only a short time ago we had the war in the Gulf. That is an example that things are not as harmonious as we would like it to be. I think that we are arriving at a greater level of harmony but not in the entire world, in reality, not a total harmony. . . . In seeing conflict there are things that one must do, at the minimum to have the capability of defense.

The day that you arrive at home with a cake and the children don't argue about the size of their piece, on that day there will be no more conflict for humanity." (interview #30)

From the information in this interview the following thought progression reflects a system of beliefs held by the admiral:

- 1) conflict is basic;
- 2) no matter how much conflict there might be one has to have the capacity for defense;
- 3) technology provides the best defense and the highest technology wins;
- 4) nuclear technology is the highest form of advanced technology;
- 5) research on nuclear technology is a high priority for Brazil.

As previously stated, this military officer is in a central policymaking position on nuclear issues. His policy thinking plays an important role in his decision making and in the implementation of those decisions. He has said that "the world is more harmonious" and "we are arriving at a greater level of harmony." However, the belief in technology as the solution to Brazil's needs has become for him a driving force more important than his view of the world as captured by the "master question." The danger of enriching uranium to the weapons grade level appears to be acceptable to the officer when compared to the highly preferred value of nuclear technological advancement. The importance of technology and of winning have taken on a greater value than the development of harmony through cooperation and negotiation.

He also states that one must at the minimum have "the capability of defense." The military is in the business of defense. It is his responsibility to make military decisions

according to his professional role. It may be in his professional interest to advocate nuclear propulsion.

How people view the issue of a nuclear submarine and shape their arguments for or against it may depend on what stand they take on nuclear issues in general or what interest they may have in the project. Some of the respondents argued that a nuclear submarine in the hands of the navy is a military weapon whether it is used for defensive or offensive purposes. Classifying the submarine as a nuclear weapon makes its development against the Constitution. Making it unconstitutional bolsters the argument against the nuclear submarine.

Emphasizing that it is an advanced form of nuclear propulsion technology bolsters the argument that it is a symbol of technological achievement and downplays the view that it offers any danger i.e., stealth, as a weapon. In this way people take advantage of the complexity of an issue to interpret the facts in a way that supports their argument and gains the backing of others. Robert Jervis (1992, p. 476) explains that people often interpret the evidence to support their previously held position. In this case, arguing for or against the nuclear submarine may not be based on the advantages of the submarine itself, but on pro or anti-nuclear positions in general.

Another military officer in the Brazilian army had this to say about conflict and harmony:

"National interest continues to be a great motivator of international politics. Governments must be able to understand and observe national interests even when a conflict is on-going. The use of military force should be avoided unless absolutely necessary but, conflict is a reality in the world scene as well as the hope for harmony, particularly with one's allies. Conflict is a part of social reality, but it is not the key nor the thing that motivates history." (interview #60)

This officer seems here to have a balanced view of conflict and harmony in the world. He does not believe the world to be highly conflictual. According the operational code hypothesis he should have a moderate view toward security issues. (Holsti's type A) Let's see. The military officer goes on:

"Brazil cannot either directly or indirectly be the victim of nuclear blackmail. Direct blackmail would be the threat of using a nuclear device against national territory. . . . Brazil's geopolitical position in the southern hemisphere is isolated from world interests. This increases its responsibility to its own and regional security. . . . Brazil is traditionally peaceful, non-aggressive, with good will but nonetheless geographically isolated. In the absence of collective defense pacts, Brazil cannot afford to be incapable of producing nuclear arms. The political decision of doing this will occur by an elaborate process if any adverse event happens. Brazil should become a world power in order to avoid blackmail from an extra-continental power. National sovereignty must be preserved without exaggerated nationalism. Nuclear technology will give Brazil much more control over its needs. Nuclear weapons give a nation additional power through mastering this technology." (interview #60)

This officer seems to believe that there could be an external threat to Brazil which could even be a nuclear threat. He believes that Brazil is isolated and, therefore,

on its own to protect itself from the possibility of this threat. He therefore believes that Brazil must have the capacity to build nuclear weapons because it cannot afford to be a victim as he says of "nuclear blackmail." (11)

This is an unexpected response given his views on conflict and harmony. The intervening variable here seems to be the major's belief that Brazil could be in a highly threatened position despite what is going on in the rest of the world. Nationalism and sovereignty are for him highly valued qualities and national interests are a high priority. These beliefs are more salient in the major's system of beliefs than his views on conflict and harmony.

A businessman¹² from a leading Brazilian family echoed some of the military officers' views:

"It is important for Brazil to continue its work on the nuclear submarine. The Falklands/Malvinas War was a very important event for Brazil. It showed us that we have to be prepared to defend ourselves. It was always thought that it would be the communist guerrilla fighters from within the country that would be the great danger to security. But, it was a Western power, Britain, that attacked us. And where was the US and the great Monroe Doctrine? The US supported Great Britain with logistics and material support. The US did not support Latin America. The British nuclear submarine sank one of Argentina's ships killing over a thousand people. Brazil and Argentina since then have been working closely together to develop a nuclear powered submarine." (interview #7)

¹¹) He did not mention any support for an international ban on nuclear weapons to eliminate this threat which might have been considered another option.

¹²) His business is not in the defense industries. He runs a consulting firm.

This Brazilian businessman reveals a sense of betrayal on the part of the US which was believed to be an ally. Once again, historical lessons, as Alexander George has suggested, play an important role. This businessman describes the war, as many others did, as a lesson of history which shapes his belief system. The belief that the US was an ally appears to have been shattered and a sense of isolation without a powerful ally has replaced the earlier belief that the US would come to the defense of Latin America. He believes now that Brazil must be capable of defending itself.

In contrast to the military officer, the businessman sees the world as more conflictual, yet they both have the same policy prescription which places a greater value on self-defense and self-reliance.

One of the anthropologists interviewed feels that Brazil is on the verge of anarchy. This scholar has some ambivalent feelings about nuclear weapons:

"I don't see why Brazil should not have nuclear weapons when the United States, England, France, the Soviet Union, Israel, India, and China have them. There should be a general universal banning of nuclear weapons. That Treaty [Non-Proliferation Treaty] is strongly unequal and not enough. It is unacceptable. Why should we not have nuclear weapons and the United States should have them? To maintain inequality? No. I am strongly in favor of a universal banning, prohibition, of nuclear weapons." (interview #2)

There seems to be some ambivalence which is reflected in his question "why should Brazil not have nuclear weapons" when others have them. He seems to believe strongly in equality

and faced with nuclear inequality, his choice is for everyone to be equally without nuclear weapons. However, there is a skepticism built into his questioning which indicates that he believes that Brazil has the right to have them if no one else is going to give them up. There is some conflict here in his value for equality and his value for being nuclear free. To not have nuclear weapons at this point would keep Brazil in an unequal position in relation to the nuclear states. To be equal would mean to develop nuclear weapons. For him, the trade off of these values, equality and being nuclear free, appears to create some tension. Strong beliefs about these kinds of values can become important factors in policy thinking and may outweigh beliefs such as those on conflict and harmony.

A political analyst had this to say about nuclear technology and leverage:

The "A bomb" is obsolete. It is not practical. It has no deterrence capability. The bomb is more a political device for influence, but it cannot be used. The military and a few others may think that it is important, but their thinking is behind the times. It is important to have the knowledge and understanding of nuclear technology in order to have the capacity to participate in the dialogue with other countries. . . . Brazil is using the bomb as leverage against the debt. . . . The military will continue with the nuclear research. It is not very expensive. One Stealth bomber costs more than 3 times the parallel program." (interview #22)

He also says in the interview that he sees the world as highly conflictual as a natural condition. It appears that he believes that nuclear weapons should be viewed in a practical

manner. So, while he believes that they cannot be exploded they can be used as a threat to gain influence on such things as the debt. He states that "the military will continue with the nuclear research" and seems to justify it by explaining that it doesn't cost very much. So, there doesn't seem to be in his view any practical economic problems to continue the program. Practicality and leverage play an important role in his belief system and these values seem to shape his policy thinking more than views on conflict and harmony.

He seems to believe that if nuclear weapons are useful then it is okay to have them, if not, then it isn't practical. He shows some ambivalence about their usefulness, saying that you can't use them. But then he suggests that you might make political use of them. He also believes that it is important to have the knowledge of nuclear technology in order to participate in international dialogue. In the questionnaire, this respondent answered that he favored continuing the research on nuclear weapons grade fuel. His argument that it is needed to participate in the dialogue with other countries seems to be used to bolster⁽¹³⁾ his support of the program. One could enter the international dialogue on technology in other fields. The importance placed on nuclear technology seems to rest on the prestige this field has been given, the idea of entering the "nuclear club." This emphasis on

¹³⁾ For further reading on the concept of bolstering, see Janis and Mann, 1977.

technology is also a common theme in many of the interviews, even those who do not advocate nuclear weapons. Knowing that many Brazilians feel that technology is the means to enter the first world and it is important to be a part of that world, this respondent can couch his argument in those terms and gain greater support.

A political journalist for a major newspaper who was interviewed for the study also believes the world to be more conflictual than harmonious. He had this to say about nuclear development:

"Why shouldn't Brazil pursue knowledge of the nuclear cycle? It is a type of knowledge that opens the door to other knowledge. It is important. If you ask should Brazil only pursue peaceful ends and not weapons then I wonder how can one stop in one spot and not continue on the logical path of knowledge. . . . But Brazil should not develop a nuclear bomb. That would be really a bad idea. It would be very bad for political relations. . . . The submarine is a good idea, however. It is an excellent means of defense. . . . There was a time when the military wanted the bomb as a symbol of being an important country, just like the US or the Soviet Union. It is a matter of military logic and they are not going to stop thinking in this manner." (interview #24)

He believes as do many of the people who were interviewed in this study that Brazil ought to have the knowledge of the nuclear fuel cycle, or as many stated, should master the nuclear fuel cycle. He acknowledges though that it is hard to stop there. He seems to believe that there can be no control of this process. He continues:

"On the nuclear research subject, one cannot run a film backwards so, of course, Brazil will be able to build a bomb. So, the real question is what do

they want to do. As I see it now there is no motivation to have the bomb. However, if Argentina were to acquire a bomb, Brazil would have to have it. This is clear." (interview #24)

He states that a film cannot be run backwards, in other words, you can't put the nuclear genie back into the bottle. But, a film can be run backwards just as civilian controls can be placed on the nuclear research instead of leaving it in the hands of the military. Time cannot be run backwards and the knowledge of nuclear explosions cannot be erased. He uses this observation to bolster his position that Brazil has to move ahead with this research. He implies by this statement that you have no choice. There is a choice, but one may not accept the trade off of values contained in that choice. Other countries, like Sweden, have stopped their nuclear program and not pursued this avenue of research. South Africa recently announced that in 1989 they had made the decision to completely dismantle their program. (Keller, 1993)

Like South Africa, Brazil's facilities or those of any nuclear nation, could be dismantled permanently¹⁴ and all other facilities including power plants and all nuclear material could be placed under international safeguards. They may prefer not to take this course, but the choice does exist. This interviewee uses the "film" or "genie out of the bottle" argument to bolster his position.

¹⁴) The Abolition, a book by Jonathan Schell puts forth the argument that the nuclear nations could completely dismantle their nuclear arsenals and simply retain the ability to make a bomb as a latent deterrent.

He also places a high value on competition with Argentina. Others in the study feel that even if Argentina had the bomb Brazil did not need it. So, these statements are a part of his belief system. If he believes, as he states at the end, that Brazil would have to have the bomb if Argentina had it, then it would follow that Brazil would need to continue its nuclear program until it had the capacity to build the bomb when and if it were necessary. His belief that you can't stop it may be a rationale for a less politically acceptable belief that the weapons research ought to be allowed to continue. Competition with Argentina is a high value for this interviewee and becomes an intervening variable in his policy thinking.

In the last few cases just discussed, the respondents believe that the world is conflictual and either advocate a nuclear capability or have some ambivalence about it. A priest who was interviewed also thinks the world is conflictual but is totally against nuclear weapons. He explains it this way:

To me it is a moral question, fundamentally moral. Peace is not an intermediate value. It is a goal - overall from a theological point of view, biblical. Peace represents harmony in relation to mankind, of mankind with nature, and of mankind with itself. This is harmony. It is not for another thing. Peace is good in itself. (interview #23)

While the priest sees the world as highly conflictual, he also sees his role in that world as driven by what is moral and responsible. A sense of moral responsibility becomes an

intervening variable in the priest's belief system.

As these examples illustrate, knowing a person's worldview does not necessarily predict policy preference. Some of those who believe the world is harmonious support a nuclear weapons capability and some do not. In addition, some who believe the world is more conflictual than harmonious do not support a nuclear capability and others do support it.

V. Conclusion: Worldview Does Not Predict Policy Thinking

In summary, an analysis of the data collected through the interviews in this research study appears to contradict in several ways the hypothesis previously upheld by the operational code literature. The data appear to demonstrate that responses to the "master question" do not determine other beliefs. Nor do beliefs about the condition of harmony or conflict in the world necessarily predict policy thinking on a major issue. The data suggest that beliefs about conflict and harmony are complex. They appear not to determine overall political beliefs in other conceptual areas.

There does not seem to be a standard definition for the concepts, conflict and harmony. In addition, beliefs may fluctuate depending on the focus and level of the issues being taken into account. Some people viewed harmony as good while others saw harmony as imposed order and only superficial. For some, conflict is bad even unpredictable and frightening. For others, conflict is healthy and necessary for growth. As

stated earlier these participants named 49 different issues when asked this question on conflict and harmony. As demonstrated in the interviews described above, intervening variables and values intercede in the linkage between beliefs about the nature of the world and policy preference. The importance of competition with Argentina and the belief in technology as a solution, tend to influence and shape policy more than views on conflict and harmony.

There also appear to be cultural and historical differences in beliefs. The anthropologists pointed out a cultural fear of conflict and inner conflicts between competing cultural values in Brazilian society. Others referred to historical events like the Malvinas War and now the Gulf War as important lessons for Brazil in the unpredictability of conflict, the need to be prepared, and the need for high tech weapons. The unpredictability of conflict and a focus on conflicts between nations tended to be important factors for those whose policy thinking was more oriented toward military solutions despite their stated beliefs on the balance of conflict and harmony in general.

Those respondents who focused on social issues, even if they saw the world as full of conflict, did not tend to advocate military security solutions. Hence, seeing the world as conflictual is not automatically linked to military prescriptions as the operational code literature suggests. The identification of the source of the conflict, as it is

perceived by the viewer, may have greater linkage to the preferred policy solution than simply a recognition that there is conflict. Responding to the operational code "master question" does not provide enough nor the right kind of information to predict policy choice.

Other personal differences may also enter the picture and guide policy thinking in ways unrelated to the "master question." A few of those who advocated a nuclear capability as an important part of a strong national security policy also expressed feelings of isolation, threat, and a need for self-defense. For others a high value for equality proved to be an intervening variable. The importance of these findings is that certain aspects of experience take on a different meaning for each individual. It is not so much what their view of the world is, but rather how they decide to cope with those experiences for the future. Preference for a particular approach to coping seems to be grounded more in values and goals than in a description of the world. Those who believed the world to be conflictual did not necessarily advocate defense oriented security measures as the operational code literature suggests. Those that did advocate such measures had differing world views.

The conclusion is that: 1) there is not a common universal meaning for conflict and harmony 2) the concepts are extraordinarily complex with multiple layers of saliency for each individual, 3) the concept of an opponent is too

narrow, and 4) there are many intervening values and variables which take precedence over a world view of conflict and harmony. Belief systems appear to be highly individualized and the "master question" does not appear adequate to predict policy thinking according to the results of this set of interviews.

It must be remembered that the operational code was developed during the Cold War era and was derived from Nathan Leites' writings (1953) on the Bolsheviks. The operational code assumptions are heavily rooted in that era when US-Soviet rivalry was the central preoccupation of US national security interests.

In general, the operational code research has not attempted to ask leaders directly about their specific policy preference¹⁵ and has not dealt with the process of how people make the connection between beliefs and policy. The present research looks at the linkage in thought processes which move from beliefs to policy preference. The method used in this study, to ask direct questions to the subjects about beliefs and probe for thought patterns, has been able to flush out linkages in thinking that content analysis seemed unable to do. Content analysis has its advantages. Statements by major leaders are readily available for analysis and the researcher can then look at that leader's policy decisions on certain

¹⁵) An exception to this is Walker (1977) in his study of Henry Kissinger and the Vietnam War. However, the research still used content analysis to gather the data.

issues. However, content analysis does not offer the researcher the ability to probe nor to ask the subject to focus on expressing beliefs that could fill in the gaps in the thinking process. While the operational code questions continue to have validity in establishing a framework for the examination of political beliefs, there have been changes in the international environment since the time that George originally formed the questions. These changes may have rendered them too narrow and limited in their ability to expose more diverse belief systems. Conflict and harmony, the two ends of a continuum, though polar counterparts, need not be mutually exclusive. While one may predominate for a particular policymaker, beliefs concerning the two qualities can exist simultaneously without necessarily diminishing the intensity of either.

The problems with the operational code assumptions as listed here appear to interfere significantly with the ability to predict policy choice from beliefs about worldview. However, the results of this study will show in the following chapters that beliefs are important in shaping policy thinking. Beliefs about the importance of power, competition, status, and moral considerations correlate significantly with policy preference. However, these qualities were never a part of the operational code framework.

CHAPTER FIVE

CONFLICT AND HARMONY

RESPONSES TO THE QUESTIONNAIRE

The previous chapter discusses beliefs that describe the world outside the viewer as expressed by the respondents through the interview process. An analysis of the interviews reveals that people tend to have a developed set of beliefs regarding the extent of conflict and harmony of interests which exists in the world at various levels of thinking.¹⁶

However, contrary to what was previously posited in the operational code research (Walker, 1990 p. 407), these beliefs do not appear to predict policy thinking. The results of the questionnaire appear to support a similar finding.

As stated in the chapter on methodology, the questionnaire¹⁷ has 82 questions which are divided into four

¹⁶) The reader can refer here to discussions above in chapters one and four regarding the operational code and Alexander George's development of the "master question" (1969, 1979).

¹⁷) Of the 58 people included in the study, 46 returned the questionnaire. In calculating percentages of people who responded in a certain manner on the questionnaire the total number of respondents forming the basis for the percentage is 46 or N=46. Occasionally a respondent has left a question unanswered. So, the total number of responses for a given question may vary slightly from item to item. In those cases the results expressed as percentages are computed based on the total number of responses for that question, e.g., N=44, etc.

sections representing four spheres of beliefs:

1. Personal beliefs
2. Beliefs about Brazil's political environment¹⁸
3. International political beliefs
4. Beliefs pertaining to policy thinking

Of the 82 questions, there are 55 questions which represent the first three spheres. The remaining 27 questions relate to beliefs on policy thinking. (for exact wording of questions, see questionnaire in the Appendix)

I. Beliefs in the International Sphere

There are seven questions which elicit responses on beliefs about conflict and harmony in the four different spheres of beliefs described above. The first three questions relate to beliefs about conflict and harmony in the international political sphere. The first question asks for **a description of the nature of international politics in terms of conflict and harmony**. The respondent was asked to mark a number on a scale from one to nine between the two extremes. Table 5A illustrates the percent of respondents who marked each number on the scale.

¹⁸) These questions deal with a combination of Brazil's domestic politics, i.e., military spending, and with Brazil's relationship to other countries and how Brazil's leaders should handle foreign policy issues.

Table 5A
 Question # 1
 (N=45)

Harmony									Conflict	
1-----	2-----	3-----	4-----	5-----	6-----	7-----	8-----	9		
0%	0%	7%	2%	7%	17%	35%	13%	17%		
(mean score = 6.8)										

The number chosen indicates a description of international politics in terms of the balance of these two concepts from extremely harmonious to extremely conflictual.

In answer to question one, none of the respondents marked the 1 or the 2. Therefore, none of the elites who returned the questionnaire believe the world to be extremely harmonious nor very harmonious. Every respondent believes there is at least some conflict in the world.

In general, 84% of the respondents believe the international arena to be more conflictual than harmonious to varying degrees. Only 7% feel it is about equal and only 9% see it as more harmonious with some amount of conflict. It is easily apparent that from the Brazilian elite point of view, at least according to this question, the world of international politics is more conflictual than harmonious.

By sector, the breakdown of question number one shows a fairly even distribution of responses:¹⁹

¹⁹) See chapter on methodology for total number of respondents by sector.

Table 5B

(N=45)

Conflict/harmony in World by Sector

(mean score for each group from the scale 1-9)

Military: 7Media: 5.4Church: 7Government: 6.3Artists: 8Environmentalists: 7.5Labor: 7Business: 7Scientists: 7.3

Taken as a whole, all the groups believe that the international world has more conflict than harmony. However, some of the groups show more variation than others. For example, while the media has a mean score of 5.4, there was a range of scores from 9 (extremely conflictual) to 3 (more harmonious). Government also showed a range of scores with one official marking a 4. The group of scientists marked primarily 8 or 9, but one scientist marked 3 (more harmonious). In general, 7 was the most frequent response indicating that the total group views the international world as having more conflict than harmony.

The second question asks the respondents to express their beliefs about the future trend of conflict and harmony. There

is a slightly more even distribution across the continuum for these responses, but the majority, 52%, still see the international world as continuing to be more conflictual than harmonious in the future. The precise breakdown of answers is as follows:

Table 5C

Question #2

(N=42)

Harmony					Conflict				
1-----	2-----	3-----	4-----	5-----	6-----	7-----	8-----	9-----	
7%	7%	7%	7%	19%	12%	21%	10%	10%	
(mean score = 5)									

So, while 84% of the respondents believe the world of international politics is more conflictual than harmonious at the present time, only 52% believe it will stay that way; 19% feel it will be equally conflictual as harmonious; and 28% believe harmony will emerge as the normal state in the future.

The third question takes into account regional differences in regard to conflict and harmony. Question three asks whether it is necessary to take into account different regions of the world or does the same basic rule of human nature apply overall? ²⁰

²⁰) The question is asking the respondent if he believes that human nature in regard to conflict and harmony is universal or if he believes that variations in the rate of conflict and harmony are due to regional differences? These are considered here as two opposite concepts and are marked at each end off the continuum.

Table 5D

Question #3

(N=44)

Regional differences					Same over all			
1-----	2-----	3-----	4-----	5-----	6-----	7-----	8-----	9
23%	16%	14%	11%	14%	2%	7%	4%	9%
(mean score = 3.9)								

Of the sample, 64% believe that there are regional differences regarding conflict and harmony; 14% believe that regional differences and universal tendencies play equal roles; and the remaining 22% believe that regional differences play a lesser role and that the same basic rule of human nature applies over all. Of the 22% who believe that the same rule of human nature regarding conflict and harmony generally applies no matter what the region of the world, it is important to know whether they believe that trend to be conflictual or harmonious. Therefore, it is necessary to look at how they answered the first two questions.

Of the 22%, 16% see the world as more conflictual; 2% more harmonious; 2% equally conflictual as harmonious; and 2% said things were more harmonious now but getting more conflictual. Therefore, 16% of the sample believe that regional differences do not matter and they believe that conflict is the overall trend in international politics.

This group would appear to have the highest orientation towards a conflictual world view. Taking into account the first three questions this group believes: the world is

conflictual; it will stay conflictual; and conflict is a basic, universal rule of human nature. If the operational-code hypothesis is correct then this group should be more likely to have a military oriented national security pattern of thinking and not pursue cooperative efforts toward common interests. In other words, this group (Holsti's type E or F) would be the most likely to advocate decisions in support of a national defense policy which would be prepared for the inevitable event of conflict, i.e. high degree of military preparedness, pre-emptive strategies, demonstrations of power, etc. Later we will take a look at how this group answered the policy thinking questions in the questionnaire. (See below, this chapter, section IV, D.)

Before the relationship between the policy questions and those on conflict and harmony are discussed, however, it is important to examine the remaining four questions on conflict and harmony.

II. Beliefs in the Personal Sphere

Question #18 (N=45), from the section on personal beliefs, asks whether **the world is essentially harmonious or conflictual.**²¹ Again, the response is heavily weighted

²¹) This question is very similar to question #1 which asks the respondent to describe **the nature of international politics.** The difference is that question #18 is in the section on personal beliefs and asks for a description of the "world" not restricted to "the nature of international politics."

toward conflict, with 75% of the sample marking 6 or greater on the scale. Of the group, 18% believe the world is equally conflictual as harmonious and only 7% describe the world as harmonious.

III. Beliefs in the National Sphere

Question #32 (N=46), a part of the section on Brazil's political environment, asks whether Brazil's regional political environment is harmonious or conflictual. The responses to this question demonstrate the most dramatic expression of conflict in the entire questionnaire. Of the sample 98% believe that Brazil's regional political environment is conflictual; and all 98% marked 7 or greater. Not only that, but the most frequent answer was 9: extremely conflictual. The remaining 2% think that Brazil's political environment is equally harmonious as conflictual. Not one respondent sees Brazil's political environment as harmonious.

Question #33 (N=46) asks whether **Brazil's relations with other nations is best characterized by harmony or conflict.** By contrast to the previous question, the answers here form an almost perfect balance of distribution across the continuum.²²

²²) I did not round off the percentages because they would all have to be rounded up and that would bring the total to 102%.

Table 5E
Question #33
(N=46)

Harmonious									Conflictual
1-----	2-----	3-----	4-----	5-----	6-----	7-----	8-----	9	
11%	9%	22%	8%	9%	8%	22%	0%	11%	
(mean score = 4.7)									

The even distribution of the responses to this question is perplexing. If 98% of the sample believe Brazil's regional political environment is filled with conflict, why are the answers to this question on Brazil's relationship with other nations so evenly distributed along the continuum with 50% believing that Brazil's relations with other nations is generally harmonious? Where is all the conflict coming from?

Question #53 appears to solve the dilemma. It asks how much Brazil's problems are due to conflictual relationships with other nations and how much are they due to other causes like inflation, pollution, productivity, etc.

Table 5F
Question #53
(N=46)

Conflictual relations w/nations									Other causes
1-----	2-----	3-----	4-----	5-----	6-----	7-----	8-----	9	
0%	0%	4%	2%	13%	11%	13%	20%	37%	
(mean score = 7.3)									

Of the sample, 80% feel that Brazil's problems are not due to conflicts with other nations but are due to other causes like inflation, pollution, productivity, etc. Even 37%, those who marked 9 the most frequent response, believe that Brazil's problems are due completely to other causes.

Therefore, while 98% of the respondents believe that Brazil's regional political environment is predominated by conflict, they also believe that the source of that conflict is primarily causes other than relations with its neighbors. The sources of this conflict are believed to be other causes like inflation, pollution, productivity, etc. These findings reflect the writings of several Brazilian social and political analysts. Roberto DaMatta, a Brazilian sociologist, uses Brazil's famous carnival celebration as a means of analyzing the conflict between the hierarchical, authoritarian aspect of Brazilian society and the search for individual freedom of expression (DaMatta, 1990). The few days of carnival festivities become a focus for releasing the frustrations that have built up over the year as a result of the poverty, misery, and marginalization that face the Brazilian lower classes (DaMatta, 1990, pp. 125-204). Helio Jaguaribe, a Brazilian political analyst, ascribes the social crisis in Brazil to its duo-society, rooted in colonial tradition, in which the elite upper 10% get 50.6% of the wealth and the lower 20% of the people get only 2% (Jaguaribe, 1989, pp. 26-30). Jaguaribe also points to the chronic problem of

hyperinflation as a major contributor to Brazil's present state of crisis (Jaguaribe, 1989, p.7).

In summary, the Brazilian elites who make up the sample believe that international politics is primarily conflictual (84%). While answers were more varied on future trends still 52% believe it will stay more conflictual, leaving 29% who believe harmony will emerge and 19% who feel it will stay about equal. It is necessary to take regional differences into account in viewing conflict and harmony for most of the respondents (64%), while 14% think that both regional differences and general trends play an equal role. The remaining 22% generally feel that regional differences play only a minor role if any and that the basic dominance of conflict is the rule of human nature over all.

The tendency to view the political environment as conflictual continues in the remaining questions. Ninety-eight percent expressed that Brazil's political environment is highly conflictual. However, when asked about Brazil's relations with other nations, 50% said it is primarily harmonious. The dilemma about the source of conflict appears to be resolved by question #53 in which 80% of the respondents attribute Brazil's problems to other causes like inflation, pollution, productivity, etc. rather than to conflicts between nations. As discussed above, this observation is substantiated by political analysts like Hélio Jaguaribe (1989) who ascribe Brazil's problems to social and economic sources.

These results underline the problem with the operational code's focus on the "opponent." The sources of today's conflicts are often complex and diffused and require a broader form of inquiry if we are going to flush out a more complete system of beliefs.

IV. The Relationship Between Beliefs on Conflict and Harmony and Policy Thinking

A. Questions Which Pertain to Policy Thinking

The underlying hypothesis of the operational code literature is that beliefs about conflict and harmony set the tone for the rest of the political belief system and play a primary role in shaping policy thinking. (George, 1969) In order to explore that relationship for this study, it is first essential to establish the dependent variables: policy preferences as expressed by the respondents.

The policy which is the focus of this study evolves around the issues of nuclear weapons development in Brazil. As stated earlier, 26 of the 82 questions on the questionnaire relate to policy preference thinking. Questions #55-67 are policy questions which require a Yes/No answer. Questions 68-81 are also policy related questions and require answers that are marked on a continuum scale ranging from 1-9 like the questions already discussed. The last question, #82, asks the

respondent if he or she is a member of a political party.²³

The policy questions in general are: should Brazil have a nuclear weapon; continue with research on weapons grade nuclear fuel; undergo IAEA inspections on this research; sell nuclear technology; build a nuclear powered submarine; sign the Non-Proliferation Treaty; or put the Treaty of Tlatlelolco into effect which designates Latin America as a nuclear free zone.

Other questions ask: are nuclear weapons needed to insure peace; does Brazil need nuclear weapons for its national security; would nuclear weapons give Brazil more control than not having them (more control in the sense of less foreign influence on its policymaking process); and if Argentina had the bomb how important is it for Brazil to have it, too.

B. Two Distinct Profiles of Policy Thinking

To make the analysis more manageable, 10 of the more salient questions from these 26 policy questions have been selected for comparison.²⁴ These particular ten questions cover a scope of policy issues which begin to paint a profile of policy thinking which is helpful in clarifying a link between beliefs and thinking on policy preferences. Answers

²³) See appendix for the questionnaire.

²⁴) The ten policy questions selected are representative of the 26 and are consistent with the remaining 16 questions.

to these ten questions appear to create two contrasting profiles: 1) a national interest-military defense pattern of policy thinking (for this study this group will be referred to as the NIM group which correspond to Types E & F in Holsti's typology study on policy prescriptions) and 2) a common interest-conciliatory pattern of policy thinking (for this study this group will be referred to as the CICON group which corresponds to Holsti's Type A).

The 10 questions used for this profile are numbers: 57, 59, 60, 61, 62, 63, 65, 66, 67, and 79. National interest-military defense policy thinking on these questions forms the following profile if a person were to respond consistently in a pro-weapons/non-conciliatory pattern on all ten items. The NIM respondent:

- 1) advocates continuing research on weapons grade nuclear material
- 2) feels no IAEA inspections at all should take place on nuclear fuel research, or
- 3) feels Brazil should not put some of its nuclear facilities under IAEA inspections
- 4) believes Brazil can afford to build nuclear weapons
- 5) supported nuclear weapons research previously
- 6) feels Brazil should be able to sell nuclear technology to non-nuclear states
- 7) supports Brazilian efforts to build a nuclear submarine

8) believes that Brazil should not sign the Non-Proliferation treaty

9) feels Brazil should not put the Treaty of Tlatelolco into effect

10) believes that if Argentina were to get the bomb Brazil would have to have it, too

In general a person with this profile of policy thinking is one who does not believe that entering into international cooperative agreements leads to mutual benefit to all those who participate. International cooperation is represented in this study by agreements like the Non-Proliferation Treaty and the Treaty of Tlatelolco which designates Latin America as a nuclear free zone. It is believed by the NIM group that Brazil's cooperation in these kinds of international arrangements would put Brazil's national security in jeopardy.

This policy thinking reflects the belief that the world is anarchic and each nation must rely on self-help. Anyone, therefore, could be one's enemy and there must be a defense that can counter whatever means of aggression that might come from any source. Weapons must, therefore, be as advanced as whatever a potential enemy might have. Since nuclear technology is believed by this group to be the most advanced form of weapons defense (defense through threat of offensive use), it follows that research must continue on nuclear weapons grade fuel and nuclear propulsion unincumbered by

inspections which might interfere.

This group believes that if Argentina, Brazil's traditional rival, were to acquire a nuclear weapon capability, then Brazil would have to have it, too. It would be needed for defense and to deter attack through the threat of equal retaliation. This political view based on the notion of self-help in an anarchic world has often been called "political realism." The theory of "political realism" has been carefully defined by Hans J. Morgenthau in his book, Politics Among Nations. (Morgenthau, 1985) Morgenthau's theory is based on a view that human nature is permanently competitive and self-interested; moral issues are culturally bound and should not play a role in international politics, and that politics is primarily a struggle for power. This view has predominated international political theory since the end of the Second World War (Art and Jervis, 1992, pp. 1-112).

There is an opposite worldview to that of the NIM profile. The opposite belief system held by the CICON group claims that cooperation is necessary and beneficial to those who participate in international arrangements. Interdependence rather than anarchy is the prevailing dynamic of international relations and common interests can be addressed successfully through cooperation. The best interest of any nation is to seek agreements which lessen the need to invest resources in weaponry so that scarce resources can be used to enhance other aspects of society. In international

political theory this view is represented by a school of thought often termed global or world order. This school of thought is sometimes referred to also as idealism or utopianism by those who support realism and who believe that global cooperation is unattainable.²⁵ According to the global order pattern of thinking, if Argentina were to get the bomb Brazil would not need it. Argentina could not drop the bomb on Brazil without suffering from radioactive fallout itself. In this way nations are not isolated. What happens to one nation affects the other. In this case, the lesson of Chernobyl, where radioactive fallout spread its effects far beyond the Soviet Union, may play a role in thinking. The potential damage to Argentina itself would deter it from using the bomb. This view reflects the belief that nuclear weapons are qualitatively different than conventional weapons and are not just bigger.

These are polar views and few people would hold strict adherence to every aspect of one or the other. In any population, as in this sample, there would be a range of views. However, it is useful to describe a model type, i.e., anti-nuclear or pro-nuclear, and compare these policy prescriptions to beliefs which constitute the independent

²⁵) A third theory of international politics called "complex interdependence" formulated by Robert Keohane (1977) acknowledges that nations are interdependent like global order theory, but also explains that nations are not equally powerful and will continue to compete and argue over how to solve global problems and who will pay for the solutions.

variables in the study.

C. General Responses to the Policy Questions

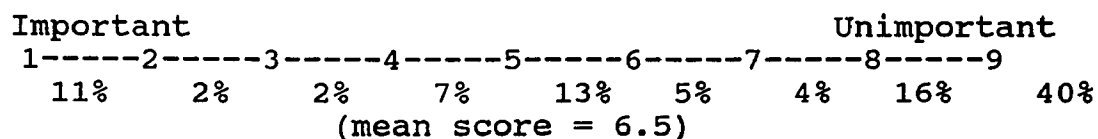
First, let's look at the general responses and then we can examine the profiles of some of the respondents and how those profiles relate to their belief systems.

Table 5G

Responses to Policy Questions

Question	N	%Yes	%No	% I Don't Know
#57	(N=45)	13%	87%	
#59	(N=38)	10%	80%	10%
#60	(N=45)	11%	89%	
#61	(N=46)	7%	93%	
#62	(N=45)	24%	76%	
#63	(N=45)	64%	36%	
#65	(N=44)	69%	29%	2%
#66	((N=42)	77%	16%	7%
#67	(N=41)	85%	15%	

#79 (N=45)



Question #57 asks whether Brazil should continue its research on weapons grade nuclear material. It is important to notice the use of the words "weapons grade." Nuclear weapons require very highly enriched uranium to levels of 80-90% or greater. Other uses for nuclear material including

propulsion do not require this level of enrichment. The enrichment requirements for other nuclear energy purposes even propulsion fall into the range of 3-5%.⁽²⁶⁾ Therefore, anyone advocating the continuance of weapons grade or 90% enrichment research would be advocating that Brazil at least have the capacity to build a nuclear weapon. That high level of enrichment is not necessary for any other purpose. Thirteen percent of the respondents answered "Yes" to this question and 87% answered "No."

Question #59 asks whether nuclear enrichment research ought to continue at the facilities which do not undergo inspections by the International Atomic Energy Agency. In developing its nuclear energy program to create electrical power, Brazil participates in IAEA inspections on facilities related to this power program. The weapons program developed secretly by the Brazilian military during its years of dictatorial rule does not undergo IAEA inspections as yet, although there is a recent accord signed with the IAEA to begin such inspections if the Brazilian Congress approves the agreement (Brooke, December 13, 1991; Redick, 1992). Ten percent feel that this research should continue without IAEA inspections; 10% say "I

²⁶⁾ It may be important to clarify here that while the enrichment level necessary for propulsion is only 3-5% the process of enriching nuclear material is basically the same whether it is 3% or up to 90%. When a facility like Aramar has already enriched to 20%, then it has the capability to enrich to 90%. All that remains is to make the decision to do so. The Brazil case is explained in a publication by the Brazilian Physics Society. (See Sociedade Brasileira de Física: Comissão de Acompanhamento da Questao Nuclear.)

don't know"; and 80% think it should not continue without IAEA inspections. On these first two questions there seems to be emerging a small group who advocate some kind of weapons grade fuel development. The large majority, however, think it is not desirable.

Question #60 asks whether with Brazil's present economic problems it can afford to build nuclear weapons. Brazil is one of the largest debtor nations with an international debt of approximately \$116 billion. It has also suffered hyperinflation for the last several years reaching 1790% in 1990. The gap between the distribution of wealth among the rich and the poor is also one of the largest in the world. In the interviews poverty and famine were issues that were often raised as Brazil's greatest problems. Eleven percent of the respondents feel that Brazil can afford to build nuclear weapons and the remaining 89% do not think so.

Question #61 asks whether the respondent supported a nuclear weapons capability when Brazil was in better economic shape a few years ago. This question was another way to probe for support of a nuclear weapons capability. This question is somewhat complicated by the fact that the weapons program was developed secretly by the military. (See the Final Report of the Parliamentary Commission on the Investigation into the Parallel Program.) However, after 1986 when the test site was discovered by a journalist who made it a front page headline article (Sautchuck, 1986; Lobato, 1990) the program was

essentially uncovered even though the military continued to deny it (Luiz Pinguelli Rosa, 1990) until the congressional inquiry called for a complete disclosure in 1990. Seven percent of the sample stated that they had supported a nuclear weapons capability previously while 93% said they had not. This may reflect that the respondents did not support it because they did not know about it, or simply that they have never been in favor of it. The 13% who said they supported may have known about the secret program if they had been in the inner circles of the military who were carrying it out. At any rate, past support indicates some longevity to their pro-nuclear viewpoint.

Question #62 asks whether Brazil should sell nuclear technology to other non-nuclear nations? Brazil's sophisticated centrifuge enrichment development is not only of concern to the international non-proliferation community because Brazil might attain the capability to build a bomb (Gazeta Mercantil, 1993), but also because Brazil could sell this technology to other third world nations that are less peaceful than Brazil. Both Iraq and Libya have been major clients of Brazil's arms industry over the past several years (Kamm, 1990, p. A5; Milhollin and White, 1990, pp. 10 & 11; and "Who's Making Missiles for Iraq?" New York Times: Sept. 8, 1990). So, the concerns are not unfounded. Twenty-four percent supported the sale of nuclear technology to non-

nuclear nations, while 76% said "No." ²⁷

Question #63 asks whether Brazil should build a nuclear powered submarine. This is a particularly controversial issue. According to information gathered in the interviews, supporters argue that the submarine would not be carrying nuclear weapons. It is only using nuclear propulsion as a power source. It is, therefore, not a nuclear weapon, as such. It would enable Brazil to participate in the high tech international community.²⁸ Another major underlying argument is that England attacked Argentina during the Falklands/Malvinas War with nuclear submarines and humiliated Argentina (Freedman and Gamba-Stonehouse, 1990). Brazil could not afford to be humiliated in that fashion.

Those who do not support the program argue that one nuclear submarine can do little or nothing to protect Brazil's lengthy coastline and that the major funding involved would be better spent on other forms of defense. By the time the submarine would be in operation, sometime in the next decade, it will be obsolete. Journalist Luiz Orlando, director of *Jornal do Brasil* in Brasilia explained in an op-ed piece in

²⁷) In answering this question, the respondents could have been thinking of nuclear technology for use in power plants or for weapons or both. The experience of India has shown, however, that knowledge of nuclear technology for the purposes of providing power can also be utilized to produce nuclear explosions.

²⁸) The nuclear submarine program at the Aramar facility outside Sao Paulo is discussed more thoroughly above in Chapter Two. See also de Goes Leite de Barros, 1988, De Angra A Aramar.

1991, "Brazil will have a submarine powered by nuclear energy in around the year 2000. There is not enough money right now for such luxuries." (Carneiro, 1991)

However, the most sensitive part of the issue is that the controversial nuclear enrichment program developed by the military at the Institute for Research on Nuclear Energy (IPEN) was originally intended for weapons capability under the secret military parallel program. This same institute is the one which initiated and coordinates the submarine propulsion research. The enrichment is the same process for propulsion as it is for weapons grade material. Nuclear physicists explain that once a certain level of enrichment is attained, for example 20%, it would be a very short term process to increase that level to that which is needed for weapons (de Castro, May 1989, Bulletin of Atomic Scientists).

The controversial program located at the Aramar facility has already reached the 20% enrichment level.²⁹ Marvin Miller, professor of nuclear engineering at MIT, (³⁰) explains that the development of a nuclear powered submarine in non-nuclear nations further complicates the issue of non-proliferation. He explains that it would be relatively easy

²⁹) This was revealed by a military officer who is involved in the research at Aramar.

³⁰) Admiral Othon Pineiro da Silva, the director of Aramar, completed his master's degree in nuclear engineering at MIT studying under Marvin Miller.

to divert enriched nuclear material produced for propulsion and use it for an explosive device (Miller, 1989). Those who oppose the nuclear submarine do not feel it is worth the danger of allowing the enrichment process to reach the weapons level. The entire group is somewhat more divided on this issue with 36% supporting the development of a nuclear submarine and 64% opposed.

Question #65 asks whether Brazil should sign the Non-Proliferation Treaty. The NPT is an international agreement which is intended to stop the spread of nuclear weapons beyond the original five nations who acquired them after WWII, the US, Soviet Union, England, France, and China. The trade off for the non-nuclear weapons nations to forego acquiring the bomb was that the nuclear nations would offer nuclear technology of a peaceful nature to the non-nuclear nations in trade for the right to inspect those facilities and a pledge from them not to build nuclear weapons. The nuclear nations also promised to work towards reducing their own nuclear arsenals. (See the Treaty on the Non-Proliferation of Nuclear Weapons, July 1968, United Nations Publications.)

It is difficult to assess whether the Treaty has been successful. While no new nations have openly declared the possession of nuclear weapons many nations are known to have the capability or the near-capability. (Spector, 1990) The nuclear nations have only recently begun to take steps to reduce their nuclear arsenals and only after years of racing

to outdo each other. Of the respondents, 29% advocated not signing the Treaty and 69% supporting signing with 2% saying they didn't know.

According to information gathered through the interviews the arguments against signing it are that the agreement is discriminatory and favors the developed nuclear nations who are preserving their power at the expense of the other nations. Even Jose Goldemberg former Secretary of Science and Technology, who has come out against nuclear weapons development, has rejected the NPT as discriminatory (Goldemberg, 1990). Some people expressed that it was a colonialist document intended to continue that kind of control over the third world which is bitterly resented. Those who support signing the agreement claim that Brazil does not intend to build nuclear weapons and should symbolize that to the world by signing the Treaty. This would be an example to others that nuclear weapons are not the way to go, despite what the powerful nations think one way or the other. They also feel that Brazil's best interests lie in joining with other nations.

Question #66 asks whether all Brazil's nuclear facilities ought to be placed under inspections by the International Atomic Energy Agency? This a somewhat broader but similar question to #59. While 77% said "Yes", 16% answered "No" and 7% didn't know. Question #67 asks whether Brazil should put into effect the Treaty of Tlatelolco which designates

Latin America as a nuclear free zone? The question is worded "put into effect" because while Brazil has signed and ratified the Treaty it has not signed the clause which allows the Treaty to go into effect even though not all the Latin American nations have signed. A requirement of the original text of the Treaty is that every nation in Latin America had to have signed the Treaty before it would take effect. A few people in the study oppose this Treaty, 14%, while 86% support it.

Question #79 asks if Argentina acquired nuclear weapons how important would it be for Brazil to have them, too. The most frequent answer is 9 with 40% of the respondents thinking that it is extremely unimportant. (see Table 4K) Eleven percent believe it would be very important for Brazil to get the bomb if Argentina had it. However, the remaining 49% have a range of answers. The results seem to indicate that there is a body of people who are clear on the issue at either extreme, while some are still ambivalent.

In summary, a large majority of the respondents think that Brazil should not continue with the research on weapons grade nuclear fuel. The majority also believe that if this research does continue that it should undergo IAEA inspections along with all other nuclear programs. Only a few people think that Brazil can afford to build nuclear weapons and only a small number said they had supported the nuclear weapons program previously. Most of the group feel that Brazil should

put the Treaty of Tlatelolco into effect. The issues which have a greater range of opinion are those involving the sale of nuclear technology, the development of a nuclear submarine, and the signing of the Non-Proliferation Treaty.

D. The Emergence of Two Groups Which Fit the Profiles

The preceding analysis looks at the range of answers to the policy questions by the entire sample. When the responses are studied by individual, two distinct groups emerge which fit the profiles described earlier as the National Interest-Military group (NIM) and the Common Interest-Conciliatory group (CICON). (see above in this chapter, section I.B.) Earlier research on belief systems has also examined "known groups" which represent opposite positions. Rokeach (1969) studied opened and closed minded belief systems. While his study produced a range of responses from the answers to the questions on the dogmatism scale, he selected the two extreme groups for further examination. One group was designated as open minded and the other closed minded. He then asked these two different groups to respond to other questions and tasks to see if the distinction between the two types persisted.

Holsti (1977) formulated groups in his typology research in order to study leaders that fit a type. In this manner, the two extreme groups, which answered the policy questions in clusters at one end of the spectrum or the other, were selected to see how their answers to the policy questions

relate to their worldview.

Of the 46 respondents, there are 12 whose answers to the nuclear policy questions cluster around the NIM profile. There are 20 respondents whose answers cluster around the CICON profile. While most of the NIM respondents see international politics as more conflictual so do most of those who answered in the CICON manner. In this study, having a view that conflict predominates over harmony does not predict policy thinking.

Let's examine the people who said that the world is extremely conflictual. Half of those who believe the world is extremely conflictual did not take a National Interest-military defense stance at all. It appears that those who view the world of politics as full of conflict have various forms of policy thinking. This result contradicts the hypothesis of the operational code research that the master question sets the tone for the remaining beliefs and shapes policy choices.

Question #2 which asks what will be the normal state in the future has a greater range of answers. Of the twelve who have an NIM policy approach, 8 see world politics as more conflictual; one sees it as equal; and three see it as emerging more harmoniously. While there is a slight tendency among the NIM group (66%) to have a view that the world is full of conflict, a majority, (52%) of the common interest-conciliatory(CICON) group also view the world as having

greater conflict than harmony.

In an earlier discussion in this chapter in dealing with question #3 on regional differences a group emerged which has the most extreme view of conflict in the sample. They see the world as conflictual, that it will stay more conflictual, and that there are few, if any, regional differences. The same basic rule of conflict applies over all regions. Sixteen percent of the sample fall into this group. Of this 16% over half are not among the twelve who have a national interest-military defense approach. So, it appears that even having a view that sees the world as full of conflict still does not seem to predict policy thinking which follows an NIM profile. On the other hand, 25% of those who said that harmony would eventually emerge as the normal state of affairs do fit the NIM profile. One of those who sees the world as more harmonious than conflictual is the most extreme of the NIM group. This respondent answered 8 of the 10 questions in an NIM fashion. Other intervening factors appear to be shaping policy thinking instead of beliefs on the nature of the harmony and conflict of interests in the world.

Question #33 which asks whether Brazil's relations with other countries are conflictual or harmonious has a more even distribution of answers than the previous questions on conflict and harmony. The responses of the twelve who follow the NIM profile are also evenly distributed across the range of answers from harmonious to conflictual. So, whether or not

the source of conflict is other nations, does not seem to have an impact on policy thinking on national security issues, at least those discussed here.

A similar question, #7, asks if nations are generally friendly or threatening. The responses to this question reveal the NIM group to be right in the middle saying that nations are equally friendly and threatening. Responses by the CICON group are also clustered toward the middle on this question.

In conclusion, the data collected in this study, both through the interview and the questionnaire, do not support the operational code hypothesis that beliefs about conflict and harmony shape policy thinking.

In addition, in running a correlational analysis, there were no significant correlations between any of the questions on conflict/harmony and the policy questions.

As responses in the interviews demonstrate, beliefs about conflict and harmony are extremely complex and there is not a standard definition or set of criteria which is salient to all individuals. In the interviews people mentioned many different issues of focus in relation to conflict and harmony. They talked about many different levels of conflict from the individual to world politics with different historical events playing important roles to some and not to others. Even the value of conflict and harmony does not seem to be universal. Some see conflict as an essential part of expression and

growth while others focus on the unpredictable threat of conflict and the need to be prepared. While many believe harmony is good, others see it as a false and an imposed order which inhibits conflict and maintains an unjust status quo. The data from the interviews and the questionnaire show that beliefs on conflict and harmony do not appear to predict a pattern of policy thinking. Conversely a pattern of national interest-military defense policy thinking may or may not reveal a tendency to believe the world of politics is full of conflict. Therefore, the predictive power of the operational code hypothesis appears to be non-existent from the data collected in this research study.

A pattern of policy thinking, however, has emerged and other belief systems than those on conflict and harmony do have a greater predictive power. The relationship of other beliefs to policy thinking will be discussed in succeeding chapters.

Chapter Six

PRESCRIPTIONS FOR BEHAVIOR: THE INTERVIEWS

INTRODUCTION

Description of the World and Prescriptions for Behavior

Beliefs formulated by individuals comprise two types of belief systems:

- 1.) Beliefs which provide a description of the world; and
- 2.) Beliefs which provide prescriptions for behavior on the best means for interacting with that world.¹

The previous chapter which deals with beliefs about conflict and harmony demonstrates that people do appear to have formulated a system of beliefs which describe the world outside themselves. The data suggest, however, that, contrary to the assumptions made in the operational code literature, policy thinking does not appear to be based on a centralizing belief about worldview or the balance of conflict and harmony in the world. However, the results of the study demonstrate that, instead, there are other beliefs systems that shape policy thinking.

This chapter will explore the relationship between beliefs which provide prescriptions for behavior and policy thinking. According to the data in this study, belief systems

¹) This delineation of beliefs into the two categories described here is a creation of the author.

are projected onto the observable world, i.e., how important is power or status. Behavioral prescriptions expressed in the form of beliefs on power, status, and competition/cooperation appear to: 1) shape policy thinking and 2) form patterns of beliefs.

The purpose of this chapter will be to examine beliefs about the importance of power and status and their effect on policy thinking on nuclear issues according to the responses in the interviews. The following chapter will explore prescriptions for behavior from the responses to the questionnaire. The reader is reminded that the sample is small and non-random and, therefore, the results should be considered exploratory and not definitive.

In his analysis of the operational code, Ole Holsti (1977, p. 151) suggests that motivations like self-esteem may be the organizing factors in the relationship between beliefs and policy thinking. His suggestion indicates that beliefs about achieving self-esteem would have an impact on policy choices. For example, believing or not believing that one would need to bolster self-esteem with symbols of prestige might make a difference in choosing one policy over another. Holsti's suggestion offered a connection to Winter's research on power (Winter, 1973). If, as Winter claims, a high value for power has an important impact on policy preference, the need to achieve self-esteem could be linked to a high value for power. Morgenthau's theory of realism claims that

prestige is a way of demonstrating power and demonstrations of power offer prestige (Morgenthau, 1985, chapter 2). The linkage of prestige and power and the symbol of power that nuclear weapons offer as a factor leading to proliferation, prompted an examination of prescriptions for behavior centered around the converging concepts of power, esteem, and competition and/or cooperation. The importance was to see if the value of certain kinds of behavior (like self-esteem as Holsti suggested) might drive a systemic pattern of beliefs that were connected to policy preference.

Both values and motivations play an important role in determining beliefs about how to interact with the world. Value is placed on those qualities which are believed to satisfy motivational needs. As was discussed in chapter one, Milton Rokeach explains that there are "two powerful and conflicting sets of motives" operating at the same time within each individual. They are:

- 1) "the need for a cognitive framework to know and to understand" and
 - 2) "the need to ward off threatening aspects of reality."
- (Rokeach, 1969 p.67-69)

In Rokeach's book, The Open and Closed Mind (1969), he explains that:

for most persons in most situations, both sets of needs operate together to one degree or another. A person will be open to information insofar as possible, and will reject it, screen it out, or alter it insofar as necessary." (Rokeach, 1969

p.68) ²

In accord with the need to know, belief systems represent an attempt by each individual to bring order to disparate events in a manner which is useful in explaining and predicting phenomena, allowing a person to function confidently in pursuing a secure existence. This requires a readily available system which describes the world and prescribes the right behavior to interact successfully with that world. Experience, however, may differ from person to person. While experience is positive for some people, for others the perception of reality may be painful and threatening and the individual may feel a strong need to adjust reality in order to cope with the pain or fear. The formation of an individual's belief system appears to be a marriage between the need to know, or the need to assess reality accurately in order to operate in a functional manner, and the need to protect the self.

At the individual level, threat may arise out of adverse experiences, temporary or enduring, which are shaped by and which, in turn, shape broader human conditions. To varying degrees, individuals may become disposed to accept or to form closed systems of thinking and believing in proportion to the degree to which they are made to feel alone, isolated, and helpless in the world in which they live (Fromm, 1947) and thus anxious about what the future holds in store for them. Such a state of affairs should lead to pervasive feelings of self-inadequacy and self-hate.

²) for further discussion of Rokeach see above, chapter one.

Attempts may be made to overcome such feelings by becoming excessively concerned with needs for power and status. (Rokeach, 1969 p.69)

Rokeach's theory then is that high levels of perceived threat may lead to an excessive concern for power and status. Power and status are sought by the individual for protection which is both physical and emotional. According to Rokeach threat also may lead an individual to become closed-minded or dogmatic in order to protect the self and ward off unacceptable hurt. The focus on power and status serves to ward off threat and defend the self. The need for power translates into a high value for power. This chapter will explore how beliefs about the importance of power and status appear to affect policy thinking. The relationship between power and status will also be examined, as well as the role of feelings of isolation.

I. Beliefs About Power

The interviewees discussed many aspects of their beliefs about power. The concept of power has many subtle variations, but a working understanding for this study defines power as the ability to control the allocation of goods, services, and rights and to enforce norms. Power may be physical or it may be psychological. Power may simply be a matter of sovereignty; power over one's own actions or the actions of one's own nation. Or it may be a matter of domination; power over others or other nations. Influence

over policy decisions without complete control over outcome is a lesser form of power but may be all that is available or desired. Power can be sought as a means of determining who gets what, or it can be sought as an end in itself, to maintain a ready position in case power may be needed later. Power can be economic, physical/military, moral, legal or the cultural imposition of customary norms. Power is realized through incentives and rewards, through the threat of and imposition of harm, and through legitimate respect.³

A. Beliefs About Global Power and Brazil's Role

With the end of the Cold War and the bi-polar stalemate that existed since the Second World War, concerns about U.S. dominance in Latin America have resurfaced. With the U.S. remaining as the only superpower, it is feared that there will be no way to balance its powerful influence on Latin American politics. To preserve its sovereignty, Brazil would need to find ways to reinforce whatever means it has to protect its national interests. There was great optimism in the late sixties and early seventies, when Brazil was experiencing phenomenal economic growth rates, that Brazil had the potential of becoming one of the great powers (Schneider, 1976). Its sheer size, both geographically and economically,

³) There are many definitions for power in the political science literature. Hans Morgenthau (Politics Among Nations, 1985) offers a useful analysis of power. Also, see Dougherty and Pfaltzgraff (1981) Chapter 3, "Power and Realist Theory" and Gabriel Almond and Sidney Verba (1980). The definition used here is developed by the author derived from a combination of these writings.

along with its industrial development made the realization of these hopes appear to some inevitable.

However, with the global recession, massive debt, and hyperinflation in the late seventies and eighties and now the early nineties, Brazil's hopes for world power status seem to have been put on hold (Roett, in Chacel, 1988, pp. 110-119). Also, Brazil's seeming inability to cope with problems of severe poverty and poor distribution of wealth have created doubts as to whether it can ever emerge from its status as a Third World nation (Jaguaribe, 1989; Roett, in Chacel, 1988; Strahm, 1991). Riordan Roett in 1988 explained that hunger had become an "increasingly alarming problem in Brazil" coupled with high levels of illiteracy (24% compared to 17% in Mexico) and the extreme difficulty of finding sources for borrowing the money needed to provide relief (Roett, in Chacel, pp. 113-115).

However, some of the Brazilians who were interviewed still believe Brazil can become a major power:

Brazil should become one of the world's major powers, culturally and economically. Therefore, Brazil should acquire the technical knowledge of the nuclear process. The Great Powers have this knowledge and Brazil should have it, too."
(interview #16)

There seems to be agreement among some of the interviewees that Brazil can and should become a great power, but the reasons for it vary from economic reasons to a matter of self-defense. For some of the respondents, nuclear

technology plays a role as a symbol of attaining world power status and balancing the power of the United States. Some believe that to become one of the great world powers, it is necessary to have a nuclear capability. To identify with that group, a nation must cross the nuclear threshold.

Many of the elites interviewed talked about the end of the Cold War and the effects of the resulting shifts in power. Collectively, these are some responses by the interviewees:

I see the world as becoming more multi-polar. I don't see a Pax Americana, however. The US dominates the economy which is a competition not unlike war." (interview #60)

Others expressed concerns about the consolidation of US power:

The United States has consolidated its military power. Since the Gulf War it has been obvious that there is no balance of power today. The United States is at the front. The history of US interventions shows that if this power is not balanced rapidly the people of Latin America principally will be victims of United States power. (interview #28)

A businessman explained his reaction to changes in world power:

With the new relationship between the US and the Soviet Union, Brazil is forgotten. It is not really good for Brazil. (interview #7)

Another Brazilian reflected on the effects of the Gulf War:

"Brazil thought at one time that there could be middle powers and that Brazil could be a strong middle power. But the recent Gulf War has shown that there can be no middle powers, only big ones and small ones. The weapons of the middle powers are no match for the high tech weapons that were used to destroy Iraq." (interview #3)

A high government official had this to say about the

world's political environment:

"The world is more harmonious. It is a sort of peculiar type of harmony. We are entering a period of Pax Americana." (interview #42)

The picture that comes together from these pieces of dialogue is that with the end of the Cold War and the elimination of the East-West rivalry, a different balance of power is emerging. It may be multi-polar economically, but militarily, as demonstrated by the Gulf War, the US has emerged as the single most powerful nation. Now Brazil must deal with a single dominating presence, the US. While a few of the respondents explain that there are multiple centers of power in the world today, most express a wariness of U.S. dominance. One of the interviewees describes this concern:

Even when a balance of power existed the US was carrying out interventions in Latin America, i.e. Grenada, Guatamala, Cuba. Chile was not a direct intervention, but the US was an accessory. This is a concern. (interview #28)

Another Brazilian explained his concerns about the Gulf War:

In the Gulf War all the Western powers united against another country under legal authority. It was also legalized for the UN to enter a sovereign nation to give aid to the Kurds. This was legalized interference with the domestic rights of a nation. Next they could decide to force Brazil to stop burning the rainforests. (interview #7)

There is a clearly expressed concern that the new role of the US as a single superpower may not be in Brazil's best interest.

B. Sovereignty and Symbols of Power

With the emergence of the United States as the only military superpower, sovereignty which is always an important issue, has become an even greater concern in Latin America. Brazil's sovereignty is at issue in the thinking of some of the elites interviewed:

We only want to safeguard our sovereignty, the sovereignty of our people, to determine our own decisions. (interview #46)

A sovereign nation needs to defend itself. Therefore, when thinking about a defense budget, the balance of political forces must be taken into account as well as the security interests of a country. . . . It is not important for Brazil to have a nuclear weapon in order to become a world power; look at Japan and Germany. Nuclear weapons give a country too much power. It is excessive. If Brazil had nuclear weapons it would be too powerful. (interview #54)

Sovereignty, according to this belief system, requires the power of self-defense, but not nuclear weapons. Nuclear weapons offer too much power and would upset the balance of power in Latin America by intimidating Brazil's neighbors. There were varying viewpoints on the role of nuclear weapons and sovereignty. Another interviewee believes that nuclear weapons would project a positive image of power. He believes nuclear weapons would give Brazil greater control over protecting its interests.

National sovereignty must be preserved without exaggerated nationalism. Nuclear technology would give Brazil much more control over its needs. Nuclear weapons give a nation additional power through dominating this technology. The capacity to build nuclear arms gives a country more power. (interview #60)

Some explained that the symbolic nature of a nuclear capability has undergone some alterations since President Collor denounced the program. A former congresswoman who has been actively concerned about the secret parallel program, explained that the military are now saying that the symbol of acquiring the bomb has now changed to "mastering nuclear technology."

The objective of the parallel program was to be able to build a bomb, not necessarily to build it. The goal has changed now according to the military that testified. They still want to master nuclear technology, but there is no desire to make the bomb. (interview #58)

The message of the military is somewhat ambiguous. "Mastering the technology" and having the "capacity" to build the bomb may be a moot distinction. Certainly the enrichment program at Aramar is the center of Brazil's research to "master the technology." It also could provide the "capacity" to build the bomb. The process of fuel enrichment is the same. It may be politically more acceptable to call it "mastering the nuclear technology."

A sign on display at the Aramar facility says:

"O BRASIL NAO PODE SER COLONIZADO
VIA DEPENDENCIA TECHNOLOGICA "

(BRAZIL CANNOT BE COLONIZED THROUGH
TECHNOLOGICAL DEPENDENCE)

The message conveyed by the sign is clearly an expression of the belief that the development of nuclear technology is a part of the sovereignty issue. A high level military officer had this to say about the development of advanced technology:

The Gulf War was meaningful not only for Brazil but for the whole world. For us there was the shock that the rest of the world felt from the war. High tech weapons like the ones that were used always function very well. In the war with Egypt, for example, the Israelis had better technology and they won. This is a matter of history. Those that have the better technology win.

Even looking way back in history those who knew how to make iron dominated those who still functioned in the stone age. The Gulf War is another demonstration. It is a lesson of history that those who have more advanced technology have better conditions in every aspect of life. Those who have better technology have power. In whatever manner of life that exists you cannot have a level of quality of life without technology. The Gulf War was just another demonstration of the obvious. Like the previous war with England [Falklands/Malvinas War] the English had planes that were superior. Those who have better technology use it with consequences. (interview #30)

This military officer (this passage has been discussed in a previous chapter) believes strongly that technology brings power and those with better technology win. Technology becomes both a symbol of power and a means of winning in a power struggle.

Another interviewee explains that symbols of nuclear achievement are only symbols and do not serve development:

I think Brazil should not have nuclear weapons. . . . these new technologies are symbols without actually serving development. I think that nuclear energy for peaceful ends is fine. But, clearly a nuclear weapon is senseless, even more so in a country like ours. It is ridiculous. Our bomb is

the bomb of misery. That is our problem.
(interview #44)

C. Historical Experience and Beliefs About Vulnerability to External Power

The historical experience of colonialism and continued dependence heightens sensitivity to sovereignty issues. According to Milton Rokeach (1969), experience shapes beliefs about the human condition. Both the Gulf War and the Falklands/Malvinas War are historic experiences for Brazil which have shaped beliefs in a different way than for the US. For Brazil these experiences reinforce beliefs in Brazil's vulnerability and dependence and a continuation of its previous colonial status. Beliefs about how to emerge from this state of vulnerability vary. For some Brazilians in this study the development of technology, including nuclear technology, is a means of achieving some element of independence, both for its technological contribution and for the symbol of development that it conveys to the rest of the world. Sovereignty today does not mean complete independence. All nations are to some degree interdependent. As Kenneth Waltz explains, sovereignty is the ability of each state to decide for itself how it will cope with its problems (Waltz in Art and Jervis, 1992). For Brazil to have its own state of the art technology would make it less dependent on the more industrialized nations for its development.

Feelings of isolation also affect attitudes toward sovereignty. Not only does experience shape beliefs according

to Rokeach, but feelings of isolation also play a role:

To varying degrees, individuals may become disposed to accept or to form closed systems of thinking and believing in proportion to the degree to which they are made to feel alone, isolated, and helpless in the world in which they live (Fromm, 1947) and thus anxious of what the future holds in store for them. (Rokeach, 1969, p. 69)

How people react to fears of isolation may be different. Some may believe that protection lies in building a strong defense, while others may believe that entering into cooperative arrangements is the best way to ward off isolation. The former may see the world as anarchic while the latter sees it as interdependent. Here are examples of both belief systems from the interviews:

Brazil's geopolitical position in the southern hemisphere is isolated from world interests. This increases its responsibility to its own and to regional security. . . . Brazil is traditionally peaceful, non-aggressive, with good will but, nonetheless, geographically isolated. In the absence of collective defense pacts Brazil cannot afford to be incapable of producing nuclear arms. The political decision of doing this will occur by an elaborate process if any adverse conjuncture should happen. (interview #60)

This same person, a military officer, believes that: "The IAEA should not be allowed to carry out inspections. That would be interference in our national defense."

A congresswoman who is also concerned about Brazil's possible isolation believes in a different approach:

Nationalism is different now, Brazil needs to be open to investment and open to inspections while still developing its own technology. We can't be isolated from the rest of the world. Germany is going to shut off the export of any technology to Brazil in 5 years if we don't have IAEA

inspections. If you have nothing to hide you don't need to be secretive. The only things you need to protect are industrial secrets. (interview #58)

They both believe that developing nuclear technology is important for Brazil's future, but one wants to preserve the right to develop the capability of producing nuclear weapons while the other believes it is more important to become a part of cooperative international norms. The military officer believes that Brazil is intrinsically, geographically isolated. A state which exists and is ongoing. While he mentions the absence of collective defense pacts, he doesn't advocate pursuing a policy of collective security. The congresswoman believes that high levels of nationalism at this point in time would cause Brazil to become isolated. She advocates entering into cooperative arrangements. These two differing belief systems have important shaping effects on policy thinking on the critical issue of IAEA inspections.⁴

One of the interviewees explains the importance of historical events on cultural beliefs much in the way Rokeach might explain it:

Brazil does not have a history of conflict, or at

⁴) The agreement with the IAEA to begin these inspections was approved by Brazil's President Collor in December, 1991, and must be approved by the Congress before the agreement can be implemented. Even if the Congress approves the inspections, the military will have to be willing to cooperate in order to make them viable because all the nuclear programs are still under military control. The now two year delay in approving IAEA inspections indicates a reluctance on the part of the Congress to address this issue.

least nearby conflicts because that is very different. . . . All this then creates an environment, a culture which has a certain manner of looking at things. For example, Russia was invaded by Napoleon. That event passes in a country to the son and then to the grandson, for generations. Generations will look at a foreigner as an assassin. Imagine that. In the Second World War the one who lost the most people was Russia. There must not be anyone in Russia who did not have a family member killed or crippled by the War. . . . So, it is a completely different culture because it is in the person. The person who has been attacked is not the same as a person who has not been. . . . Let's say very reactive, unconfident, aggressive. It is a problem of culture. It stays latent. (interview #48)

The same interviewee also speaks about the importance of the Gulf War and the Falklands/Malvinas War on his thinking:

The other thing that this calls into attention is the unpredictability of conflicts. I was in Argentina 15 days before the explosion. No one said anything. From time to time there was a conversation that there was not a climate for conflict. The problem of the unpredictability of conflict is something which is somewhat frightening. It is the same with the Gulf War. (interview #48)

These two more recent events have been important in shaping the thinking of members of the Brazilian elite. Unpredictability and vulnerability to the strengths of an outside power may be the lessons learned from these events from the Brazilian point of view. While Latin America has not experienced much in the way of interstate conflict, there have been interventions by outside powers which have intruded on national sovereignty. The non-proliferation community may fail to perceive the saliency of sovereignty issues for a

country like Brazil.

In summary, beliefs about Brazil's role in a changing global environment appear to reveal a feeling of vulnerability as the US, with a history of interventions in Latin America (and support for British forces in the Falklands/Malvinas War), emerges as the sole superpower armed with a formidable military high tech strength demonstrated in the recent Gulf War. Beliefs about how to respond to that vulnerability may depend on the extent to which perceptions of isolation are believed to exist and whether this isolation is believed to be intrinsic and if the only answer is to rely on self-help. If, on the other hand, it is believed that nationalistic thinking only aggravates the situation of isolation, then cooperation in international regimes may be the preferred policy prescription.

D. Beliefs About Domestic Power Within Brazil

The discussion which follows focuses on beliefs about the power structure within Brazil. The question asked in the interview was: "Who has power in Brazil?" The question has several purposes: 1) to identify the power groups in Brazil; 2) to establish perceptions of power dynamics among the groups; and 3) to ascertain whether policy thinking is in any way shaped by beliefs about who has power.

About half of the people who were interviewed responded

to the question on "who has power in Brazil."⁵⁾ Of those who responded to the question, 69% believe that Brazilian elites have the greatest amount of power. The remaining 31% believe that power is somewhat divided between the different branches of the government and non-governmental groups. Others believe power is concentrated in the hands of the President. A few mentioned the intransigency of bureaucratic power. Of those who believe the elite hold the most power, the urban industrial business elite are mentioned the most frequently as those holding the greatest power. The next two sources of power mentioned frequently by the respondents are the Congress and the President. While these two sources of power are considered strong on their own, many of the respondents believe they represent the interests of business and other elites. The government in general, and particularly the Minister of Economy, are also mentioned as sources of power.

The following is a list of the power groups mentioned by the interviewees. It is a rank ordering by frequency mentioned. While most of the respondents believe that elites in general hold the most power, specific elite subgroups are believed to have different levels of power. The list places elites in general at the top followed by the elite subgroups in descending order according to their frequency of mention by

⁵⁾ Others only responded to Brazil's role in the global power structure or were not asked this question due to time constraints.

the interviewees as being foci of power.⁶

- 1) Elites in general
- 2) Business and urban industrialists
- 3) President; Congress
- 4) Landowners; government in general; labor⁽⁷⁾
- 5) Military, multi-nationals, bureaucrats
- 6) Alliance between business and landowners; the media
- 7) Middle class technocrats; intellectuals; the people

While the business elite are believed to be the biggest power source, several of the people interviewed strongly emphasized the enduring power of the traditional landholding aristocracy. They explain that there is a strong alliance which has been formed between business and the landholders in the powerful agro-business industries like sugar, coffee, tobacco, beef, etc. Multi-national corporations are also involved in these alliances. Organized labor is also believed to play a role, but primarily as an opposition group. Once the labor party enters the government it has often had to bend to the interests of the business elites (Keck in Stepan 1989,

⁶) The rankings were achieved through coding and counting the responses given by the respondent to this question. The responses were then ranked according to the frequency they were mentioned.

⁷) These three groups are not meant to be taken as an aggregate. They are listed here on line four because each of these groups were mentioned the same number of times by the respondents.

pp. 252-289). The media is also mentioned by a few who cite its power to shape opinion. Conspicuously absent from the list is the Church which has a very large presence in Brazil. Even the leaders of the Church who were interviewed believe that the Church has little or no political power. However, they do say that the Church has moral power and a nationwide presence throughout Brazil. One priest who was interviewed explained:

Lately the Vatican has returned to a more traditional role for the Church, and the Bishops have been preoccupied with the internal questions of the Church, i.e., the formation of fathers, the liturgy, catechism, problems of greater integration, obedience, internal problems. (interview #23)

The military role in the structure of power in Brazil today seems to be difficult to assess. While most of the elites interviewed believe that the military play a much lesser role in the power network than previously, exactly what that role is seems somewhat elusive. In the interview, the respondents, including the military, were asked what the likelihood of a military coup was in Brazil at the time of the study. It is believed in general, even by the military who were interviewed, that there is no condition for a military coup in Brazil right now. It is believed by the respondents that the military are not interested in entering the government or taking on the economic problems that exist today.

Brazil is emerging from over two decades of military

control. A democratization process is evolving and a shift of power from the military to the civilian society has been gradually taking place. (See Stepan, 1989, Democratizing Brazil.) Understanding the reconstitution of the net of power in the midst of change is a difficult task but worth exploring.

A priest who was interviewed described the military role in this way:

It is difficult to say if the military still have power. The impression that the people have is the fact that they don't have as much power as they used to. It is evident besides that the democratic transition traded military power for civilian power. This was negotiated. So, there is no juggling for power by the military like there has been in Argentina. For example, the crimes of torture that they committed, there has been none of that since then. The military also had guaranteed to them the control of the weapons industry. It was guaranteed. (interview #44)

A Brazilian senator who was interviewed describes the military as out of power:

Those who have lost power are the military, the Church, and the bureaucrats. The military has no influence over Congress at this point. They do not have any weight anymore. However, within the military structure they have autonomy. (interview #47)

Several others agree that the military still does have autonomy:

The military had power, but they have lost a lot of power with this administration. But the military still have autonomy. It is curious but they do. They have autonomy because the government does not tell them what they must do and what they must plan. In the US the President is called the Commander in Chief of the Armed Forces. Here it is not like that. The President of Brazil does not

call on the military to do as he orders. The military has its hierarchy and those at the top give the orders down the ladder of the military structure. This is autonomy. . . . There is a commission in the Congress, in the Senate, which has been set up to oversee the military. Last year I was invited to participate in some conferences with the military at some of the military schools. I participated in seven different conferences with generals and colonels. While I was at each conference I systematically asked members of the military if they knew the names of any of the members of this Senate commission including the names of the president of the commission. None of them knew or recognized the names or had ever seen them. I asked this during the entire year that I was attending these conferences and during the whole year no one knew anyone from this commission. Isn't that curious? If you are asking if the military has autonomy, the answer is yes and it is because of this. It goes on because of the disinterest of the Congress and because of fears which are not true. They are afraid because of the past history of the military. They are afraid that someone might put something in their morning coffee. They think that this might happen. But it is because of ignorance. They are absolutely ignorant of military subjects and prefer to remain uninformed." (interview #24)

This statement is very revealing on the process of military oversight. Beliefs about military behavior, even if they are myths, can shape policy thinking and in this case they are affecting the oversight process. Even if the Congress is delegated the authority to oversee the military by the Constitution, these mechanisms will not function if Congressmen believe that it may invite reprisals. Another interviewee says this about military autonomy with regard to their control over nuclear development:

Now, I have my doubts about whether they are going to have [IAEA] inspections in this respect. I have my doubts because perhaps this issue is one of the remaining axes of the power of the military in

Brazil. I have the impression that they are preserving some things because they are like the 'sacred cows' of the Indians. They cannot be touched. I think that one of our Indian 'sacred cows' is this field of nuclear research. (interview # 57)

This statement reflects a belief, also mentioned earlier by another interviewee, that the military were given control of nuclear research and development, as a part of the democratization process, in trade for staying out of politics. There is also a belief among some of the elites who were interviewed that even during the military regime the military were not in complete control but were operating at the direction of the Brazilian elites.⁸

I think that the military, even during the time of the dictatorship, administered the power, but really those that had the power were the national and multinational business elites and the traditional landowners. (interview #57)

The coup in 1964 was not done by the military alone. The elite wanted Brazil to take advantage of the good situation in the world to develop industry in Brazil and not let the left take over. (interview #60)

These last statements reveal a belief that there has been a collaboration or alliance between the military and elite elements in Brazil, particularly those who have been interested in economic development.

⁸) This seems to have been the case until the military secret service, the SNI, acquired too much power for the civilian elites to exert their former influence. (Stepan, 1988, pp. 13 - 29.)

Several of the interviewees spoke about another important alliance in Brazil, the alliance between business and the traditional landholding aristocracy:

The landholding elites still have power. It is an interesting and traditional problem. In the writing of the Constitution [1985-1988] these more conservative sectors were supported by the urban industrial sectors because today a large part of the agro-industries of the rural businesses in the north and in the central west are also a part of the transnational and industrial enterprises of the south. (interview #44)

Another interviewee explains why this alliance has thwarted land reform in Brazil:

With this conjunctural link, the big company which has an interest in increasing the production of an agricultural product in Brazil can, perhaps, put pressure on the government to extinguish any agrarian reform. So, it seems to me, in any case, that the traditional aristocracy is still in power, but it is in power in a lesser alliance with the big modern national and multi-national businesses, that is industrial, financial, and those with a presence in the countryside. (interview #57)

While the left, in general, is believed by the respondents to play a power role in opposition to the big business elites, one of the interviewees makes this observation:

The leadership of the Brazilian left thinks in the manner of the elite. They think in terms of the state, that you have to have a state that is very powerful. . . . It is interesting to observe the thinkers of the left in Brazil. They want solutions that are within this central control. This is a big problem. It appears as if there is a conspiracy to maintain everything the way it is. (interview #25)

Several of the interviewees explain that business leaders often enter government to represent business interests,

therefore, creating an alliance between government and the business elites. This Sao Paulo businessman explains:

The state has control. Then you might ask, why don't the businessmen complain about this. No, because the state produces electrical energy and sells it below cost. So, for the businessmen it is excellent. The business elite enter the government for convenience. The producers of aluminum wanted electrical energy below cost and they got it. So, the state is good for them. Industries wanted cheaper steel and they got it. So, why does the government play this game? Because they think in the same way as the elite. (interview #25)

While elites are believed to hold most of the power and alliances seem to exist across elite groups, a congressman from the State of Sao Paulo explains his belief that Brazilian elites are not monolithic:

I think that the Brazilian elites continue to command the country. But, you have to understand that there doesn't exist just one elite group. There exist various elite groups which, in addition, dispute among themselves over the command of the country. Therefore, personally, I think that in a way there is a continuation of command by the elites. But, this competition among elites and the amount of dispute that arises between them on each issue can threaten their ability to carry out policy. (interview #41)

His view that there are various elite groups with different and sometimes conflicting interests, is upheld by the results of this study. Members of the elite in this study show varying worldviews and prescriptions for behavior on values like power and cooperation which play a role in decision making.

A summation of the dialogue on the power structure within Brazil reveals the belief that elites in general hold most of

the power in Brazil. There are believed to be various elite groups including urban business, the President of the Republic, the Congress, the government in general, labor, landowners, the military, multi-national corporations, bureaucrats, intellectuals, and middle class technocrats. Significantly missing from the list of power groups is the Catholic Church. Members of the Church included in the interviews explained that the political power of the Church has diminished significantly in the last few years, but it still has moral authority. The Church is focusing on the poor in the countryside and those who have become marginalized in urban areas. As mentioned above, the Church is also focusing on itself as an institution.

It is believed by many of the interviewees that alliances exist between many of these groups, even between labor and government, which maintain the status quo. However, elites are not believed to be monolithic. Competition among elite interests threaten the ability to resolve issues as disputes arise. The question of whose belief system will set policy becomes diluted amidst the trade offs and bargaining that take place in an effort to come to grips with issues as they arise.

In the past, Brazilian leaders have resorted to military intervention to resolve conflicts between left and right. During the periods where the military have controlled the government, they have been in the position to install their

belief system into government policy. One legacy of that military policy is the nuclear fuel enrichment research.

If the military continue to be given autonomy and control over the nuclear program with no effective oversight (de Goes, 1988; Malheiros, 1993), the military belief system that created the parallel program initially is unlikely to change its policy of developing a nuclear capability. Military autonomy may be considered an important part of maintaining a balance within the power structure in Brazil. The military is in the business of national defense. If it is believed as the admiral who was interviewed stated, "Those that have the better technology win," then it is unlikely that the military would be willing to forego developing the capability of having the most powerful weapons for defense. This belief would be particularly intransigent if it were based on a deeper belief that Brazil is isolated and vulnerable in an anarchic world where survival must be based on self-help. Those who believe Brazil's survival is served better through international cooperation and transparency will have to exert their influence through the alliances that exist among Brazil's non-military power elites.

II. Beliefs about the Role of Status and Prestige

In answer to a series of questions relating to status (see questionnaire in Appendix), nearly half of those interviewed in the study, 45%, claim that status, prestige,

and national pride play an important role in determining nuclear policy. Many explain that nuclear technology is a symbol of modernity and a means by which to communicate with the First World. The following are some of the comments that were made when the respondents were asked why would some Brazilians believe Brazil ought to have a nuclear weapon:

It is mainly prestige. Nuclear weapons are a symbol of technological advancement. This is true for France, China, India, even the US. It is also for deterrence. Nobody is going to attack Brazil, but it is something that is in the heads of the military. It is the way they think. And it is a matter of nationalism, patriotism. There are plenty of people outside the military who think that way, too. (interview #8)

Some people in Brazil want nuclear weapons for prestige, for the image it creates to the outside world. (interview #4)

Brazil should become one of the world's major powers, culturally and economically. Therefore, Brazil should acquire the technical knowledge of the nuclear process. The Great Powers have this knowledge and Brazil should have it, too, but for peaceful ends and not bombs. (interview #16)

Members of the military who were interviewed explained the acquisition of nuclear technology brings respect to the military. It is not so much a weapon as a means of respect:

The [nuclear] submarine research is good because as it is a submarine, it is a weapon. . . . In terms of a world balance the navy has to present itself with respect even without having enemies. (interview #53)

Another interviewee who is an environmentalist had this to say about the navy's program:

The navy wants a nuclear submarine for status and for the extra money the research project brings to

the navy. It gives it prestige in its competition with the other services. The government thinks it would gain world prestige if it had the bomb, but there is another logic. The logic of gaining world prestige by being a leader against nuclear weapons. (interview #12)

Status and prestige are not only national issues, but a matter of competition between the branches of the military.

The issue of national pride plays an important role in policy thinking on the question of IAEA inspections. A member of President Collor's cabinet who was interviewed expressed concern over the amount of prestige the military nuclear program had achieved in the eyes of the Brazilian Congress:

How likely is it that Congress will approve IAEA involvement? That is a hard question to answer. The scientists want civilian control. Praise on the part of the Congress for the military parallel program was a bit too enthusiastic, that the military were doing a great job. There is an element of nationalism involved. The Congress seems to be willing to allow less control than I would like to see. (interview #42)

A Congressman takes a different view on how to achieve "dignity" for Brazil. He explains that while dignity is important, there are other means to achieve that goal:

I think that we must now for our dignity take part in international conventions and also to question international agencies. I think that we should try to find, to try to reformulate completely all these international norms because many that we are familiar with have demonstrated themselves to have very little efficacy. From now on we should take a perspective of radical change and give greater efficacy to the norms and to the IAEA. (interview #41)

Another Brazilian questioned whether nationalism was that strong in Brazil. He believes that many Brazilians do not

hold much nationalist pride. If they could get out they would just leave Brazil. He explains that the military had developed a nationalist slogan, "Brazil, love it or leave it." This same interviewee had written his master's thesis criticizing Brazilian politics and a conservative student, apparently shocked by his criticism had written the slogan "Brazil, love it or leave it" on the margin of his paper. Then another student in jest wrote next to the slogan, "The last one to leave Brazil should turn out the lights at Galeao." [Rio's international airport] (interview #57)

These two comments by the students represent different sides of the debate on national pride. For some Brazilians status and national pride are important values. For others, status is less important. For those who believe status is important, some advocate nuclear technology as a symbol of prestige.

III. The Interaction of Power and Status

In summary, many of the Brazilians interviewed believe that prestige and national pride play a direct role in shaping policy thinking on nuclear issues. Many believe that nuclear weapons are a symbol of modernity and technical achievement while others believe them to be a meaningless symbol. Some feel that achieving the knowledge and understanding necessary in the development of nuclear technology is the key to entering a dialogue with the First World.

Beliefs about national pride and sovereignty, according

some of the interviewees, have an impact on the issue of IAEA inspections on nuclear facilities. Those who believe national pride is very important tend to also stress issues of sovereignty and are less apt to support IAEA inspections.

Power and status are interacting concepts. (Kemper, 1991; Fung, 1991) Power can offer status when the acknowledgement of power gains respect. Status can offer power when the prestige that a nation holds enables it to have greater control over outcomes. In general, beliefs about what power and status can achieve help to shape policy thinking according to the interview data collected in this study. Nuclear weapons can be seen as a symbol of power which offers prestige and status for Brazil as it seeks to gain acceptance into the inner circle of the major powers.

Chapter Seven

PRESCRIPTIONS FOR BEHAVIOR: RESPONSES TO THE QUESTIONNAIRE

INTRODUCTION

The responses in the interviews, as discussed in the previous chapter, show that many of the respondents believe that the projection of power, prestige, and national pride have been an important factor in the motivation to build a nuclear capability in Brazil. Even those who do not believe that national pride is important in their own personal belief system, recognize that it is important to others. Issues of national pride and sovereignty also come into play for some of the respondents when thinking about formulating policy on inspections of nuclear sites involving the International Atomic Energy Agency (IAEA). IAEA inspections are seen as outside interference by those who believe strongly in national pride and Brazilian independence. For others, IAEA inspections are a means of cooperating with the international non-proliferation community and gaining credibility that Brazil is not engaged in developing a nuclear weapon.

Power plays an important role in thinking about nuclear policy. The symbol of possessing a nuclear capability projects an image of power to other nations. The five declared nuclear powers are also the five permanent members of the Security Council of the United Nations which are the only nations which

have a veto over major resolutions. Nuclear weapons also offer the power to deter attack by other nations through the threat of nuclear retaliation. The capability to build a nuclear weapon may also be a symbol of attaining recognition for advanced technical achievement. For some of the respondents, these qualities are important factors in decision making on nuclear policy. For others, power is less important in the decision making process. For some of the respondents there is a negative value placed on the massive destruction and radiation contamination caused by nuclear weapons. They are willing to forego whatever power might be gained by these weapons in trade for a safer environment.

I. Answers to the Questions on Power

The data from the questionnaire reveal that the members of the Brazilian elite that form this sample have discernable patterns of beliefs on the importance of power. The questions dealing with power fall into four different categories each relating to a different sphere of beliefs. There are three questions on power related to international politics; three related to personal beliefs; five related to beliefs about Brazil's political environment; and three related to beliefs about nuclear weapons. (see Appendix for the complete questionnaire)

A. Power and International Politics

Question #10 (N=46) asks how important is power in international politics. Like the answers discussed in the previous chapters, the responses on all these questions range on a scale from 1 (power is extremely important) to 9 (power is extremely unimportant). On question #10, slightly over 78% marked either a 1, 2, or 3 on the scale. Forty-four percent marked 1, saying power is extremely important in international politics. Over three quarters of the sample believe that power is important to extremely important in international politics.

Question #11 (N=46) asks whether military strength is the most important source of power or if economic resources more important. No one marked 1, 2, 3, or 4 that sources of power would be primarily military. Most of the respondents marked 5, that sources of power are equally both military and economic. The group generally believes that the sources of power are both military and economic with a heavier leaning toward the economic.

Table 7A illustrates the responses to this question.

Table 7A

Question #11(N=46)

Military									Economic	
1-----	2-----	3-----	4-----	5-----	6-----	7-----	8-----	9		
0%	0%	0%	0%	46%	7%	17%	9%	21%		
(mean score = 6.5)										

The group was very evenly distributed across the entire continuum on question #12 (N=46) which asked whether it is

essential for political leaders to negotiate from a position of military strength. There was a wide range of views on this issue for the group.

In the international sphere, most of the group believes that power is very important. As a whole, they believe that sources of power are both military and economic, but some of the group feel that sources of power are primarily economic. To some, negotiating from a position of military strength is extremely important, to others, it is extremely unimportant.

B. Power in Personal Relationships

In the section on personal beliefs question #26 asks: "In relationships between people is it important to maintain power?" The breakdown of answers is as follows:

Table 7B
Question #26 (N=45)

Important					Unimportant				
1	2	3	4	5	6	7	8	9	
2%	0%	11%	9%	28%	2%	11%	9%	28%	
(mean score = 6.2)									

Adding together those who marked 1-4 (power is important) only 22% believe that power is important in relationships between people. Fifty percent believe that power is relatively unimportant in personal life and 28% believe it is extremely unimportant.

The answers to question #27 (N=46), whether people need some kind of leverage to get what they want or need, are fairly evenly distributed with a slight cluster in the middle.

So, people had a range of views on the need for leverage in personal relationships.

On question #28 (N=45) which asks: "Is power necessary to get what people need?" the answers again are fairly evenly distributed with 38% answering on the important side, 20% in the middle, and 42% on the unimportant side.

In summary, in the personal sphere, the group believes that power in personal relationships is relatively unimportant with some members of the group believing it to be somewhat important. The group has a wider range of beliefs about whether power is necessary to get what people need or if people need some kind of leverage to get what they want.

C. Power in Brazilian Politics

There are five questions on power in the section on Brazilian politics. Question #44 (N=46) asks how important power is to Brazilian politics. Seventy-six percent answered with a 1, 2, or 3, saying that power is important to extremely important to Brazilian politics. Moreover, 35% said it is extremely important.

Question #45 asks whether military or other sources of power are more important. Seventy-three percent said that other sources of power are more important while 18% believe that both military and other sources play an equal role. Only 9% believe that military sources are more important.

Question #46 asks whether it is important for Brazil to

demonstrate its power to the rest of the world. Of the sample, 37% said it is important; 20% marked the middle; and 43% said it is unimportant for Brazil to demonstrate its power to the rest of the world. Table 7C shows the percent of the sample which responded in each manner.

Table 7C

Question #46 (N=46)

How important is it for Brazil to demonstrate its power to the rest of the world?

Important					Unimportant			
1-----	2-----	3-----	4-----	5-----	6-----	7-----	8-----	9
7%	11%	13%	6%	20%	4%	13%	9%	17%
(mean score = 5.4)								

The group was fairly evenly distributed on how important it is for Brazil to demonstrate its power. There is, however, a notable difference in the percents subscribing to the extreme ends of the scale, with 17% feeling it is extremely unimportant and only 7% feeling it is extremely important.

Question #47 asks how important it is for Brazil to become a major world power. As discussed earlier, many people in Brazil during the 1960s and 1970s thought that Brazil would become a world power.⁹ While these aspirations have still not been fulfilled, 59% still believe that it is important for

⁹) An August, 1990, opinion poll done in Brazil by a Brazilian polling service, IBOPE, revealed that 84% of those questioned said that Brazil has the potential for becoming a world power. The results of the poll were obtained directly from IBOPE, Rua Uruguaiana 174/11th floor, Centro, Rio de Janeiro; tele: 291-2121.

Brazil to become a major world power; 9% marked the middle; and 32% feel it is unimportant. This is an important question because many people in the interviews linked nuclear weapons to achieving world power status. Table 5D illustrates the results.

Table 7D

Question #47 (N=46)

How important is it for Brazil to become a major world power?

Important						Unimportant		
1-----	2-----	3-----	4-----	5-----	6-----	7-----	8-----	9
24%	15%	13%	6%	9%	4%	9%	7%	13%
(mean score = 4.2)								

Question #48 asks if it is important for Brazil to maintain a status of power in Latin America. The answers are equally split on both sides of the continuum. However, 24% marked 9, saying that it is extremely unimportant, while only 2% marked 1, the extremely unimportant rating.

Table 7E

Question #48 (N=46)

How important is it for Brazil to maintain a status of power in Latin America?

Important						Unimportant		
1-----	2-----	3-----	4-----	5-----	6-----	7-----	8-----	9
2%	15%	7%	20%	13%	0%	17%	2%	24%
(mean score = 5.5)								

Again, there is a distribution of responses across the entire range of answers, but the largest group, 24%, believe that it is extremely unimportant for Brazil to maintain a status of power in Latin America. Brazil is the largest country in Latin America and has the largest economy, as well. Brazil already plays a dominant role in Latin America. However, this group of elites has differing beliefs about whether it is important to maintain a status of power in the region.

It appears that different spheres of thought on issues of power elicit slightly different sets of beliefs. The respondents seem to hold a greater value for power in the international sphere of thinking. It may be perceived that competition between nations, where interests may clash, requires higher levels of power in order to secure territorial and economic security. This would reflect Morgenthau's theory of international politics in which he describes international politics as a "struggle for power" (Morgenthau, 1985). Domestically, power may be perceived as somewhat less important because territorial and economic security are believed to be common interests.

In the individual, social sphere, power seems to be the least important, probably because there is believed to be a common sense of identity with family and friends where each member seeks the mutual benefit of the others in the social group. Some of the respondents, however, continue to believe

that power is important in the personal, social sphere. Their perception of the common, mutual interests of the social group may be different. Beliefs about the importance of power in the personal sphere become a significant factor in thinking about nuclear policy. The correlation results, which will be discussed more fully later in the chapter, show that the more important power is believed to be in the personal sphere, the more support there is for developing a nuclear weapons capability.

D. Power and Nuclear Weapons

The section on nuclear issues has three questions dealing with power. Question #76 (N=44) asks whether nuclear weapons give nations added power. Eighty-four percent believe that nuclear weapons do give nations added power.

Question #77 (N=42) asks whether having a nuclear weapon would give Brazil more power. Fifty-five percent believe it would give more power; 9% answered in the middle; and 36% said it would not give more power.

Question #81 (N=40) asks whether having nuclear weapons would offer Brazil an advantage in its negotiations with other nations. On this question, 50% marked the middle and rest were evenly distributed on either side.

On the nuclear questions, a vast majority (84%) believe that nuclear weapons give nations added power. However, when thinking about Brazil the percentage dropped. While still a

majority (55%) believe that nuclear weapons would give Brazil more power, a significant number (36%) believe that nuclear weapons would not give Brazil more power. There seems to be a slightly different set of beliefs for some people about what might benefit other countries and what might benefit Brazil. It could be that they feel that the nuclear powers have stronger economies and can afford it, or they may feel that the number of nuclear weapons Brazil would be able to build would be so few that it would not be significant.

E. Power in General

In general, over the 14 questions dealing with different aspects of power, many of the questions have answers that are fairly evenly distributed across the entire range of responses from one extreme to the other. This even distribution shows that for this group of Brazilian elites there is a wide range of beliefs on power across several areas. The elites tend not to be monolithic in their beliefs on power. However, some questions do elicit a greater consensus by the group. Over 3/4 of the elites questioned believe both that power is very important in international politics as well as in Brazilian politics. Slightly under 3/4 of the group believe that sources of power are generally non-military.

More than half the group, 58%, believe that it is important for Brazil to become a major world power. (see Table 7D) The answers to the question on whether Brazil should

maintain a status of power in Latin America are evenly distributed (Table 7E) except that 24% marked 9 (extremely unimportant) and only 2% marked 1 (extremely important). On the questions dealing with nuclear weapons, 84% feel that these weapons give nations added power. That percentage dropped to 55% when asked whether nuclear weapons would give Brazil more power.

While power is believed by 3/4 of the group to be important politically, only 22% believe that power is important in relationships between people. Political and personal spheres of thinking appear to elicit different sets of beliefs about power. Power does not seem to be as important in personal life as it is in the political arena to achieve goals.

II. The Correlation Results on Power

The results of the correlation analysis also demonstrate significant relationships between beliefs about power and policy thinking on nuclear issues. There are 16 significant correlations in this study relating power with nuclear policy thinking.

Table 7F gives the significant correlation coefficients relating the responses to questions on power to the responses to the questions on nuclear policy. The horizontal axis of the matrix represents the questions on power, while the

vertical axis represents the questions asked on nuclear policy.

Table 7F

CORRELATION MATRIX TABLE: POWER

nuclear policy questions	Power Questions						
	personal power		national power			nuclear power	
	#26	#28	#46	#47	#48	#71	#81
ques #79	.5084*				.4116#	.4295#	.5344* (N=40)
ques #75		.4020& (N=42)				.4106@	.6083* (N=38)
ques #72						.8249*	
ques #68	.4431*					.4923*	
ques #67			-.4116& (N=41)				
ques #66						-.4466# (N=42)	
ques #63				.5046*	.4555*		
ques #61						.5665*	
ques #59						.6012* (N=38)	

*coefficients significant at $p < .001$
#coefficients significant at $p < .002$
@coefficients significant at $p < .003$
&coefficients significant at $p < .004$
N=45-46 except where indicated

Summary of questions:

- #26: Importance of power in relationships between people.
- #28: The necessity of power to get what people need.
- #46: Importance of Brazil to demonstrate its power.
- #47: Importance for Brazil to become a major world power.
- #48: Importance for Brazil to maintain power in Latin America.
- #71: Importance for Brazil to acquire a nuclear weapon to show it has attained world power status.
- #81: Advantage nuclear weapons offer Brazil in negotiations.

Questions #26 and #28 deal with personal power. Question #26, which asks how important is power in personal relationships, correlates significantly with two of the nuclear policy questions, #68 and #79. According to these results, the more important that power is believed to be in personal relationships the more it is believed that nuclear weapons are needed to insure peace and the more important it is believed for Brazil to have a nuclear weapon if Argentina were to acquire one.

Responses to question #28, "Is power necessary to get

what people need?" also correlate with policy thinking in answer to question #75: "Would the capability to build nuclear weapons give Brazil greater or lesser control over its ability to get what it needs?" The more it is believed that power is necessary to get what people need, the more it is believed that the capability to build nuclear weapons would give Brazil greater control. The concepts power and control are closely related. An important consequence of power is the ability to control the outcome of events to coincide with one's interests. It appears that those who place a high value on power also believe that nuclear weapons offer greater power to control events.

From the section on Brazil's political environment (national power Table 5F), responses to questions #46, #47, and #48 also showed significant correlations with policy thinking. The more it is believed important for Brazil to demonstrate its power (#46), the less it is believed that Brazil should put the Treaty of Tlatelolco into effect (#67). The Treaty of Tlatelolco designates Latin America as a nuclear free zone. Those who believe it is important for Brazil to demonstrate its power may believe that implementing that Treaty would interfere with Brazil's ability to make its own decisions on whether or not to have a nuclear capability as a projection of power.

In addition, the responses show that the more important it is believed that Brazil should become a major world power

(#47), the more it is believed that Brazil should build a nuclear powered submarine (#63). The nuclear powered submarine may be an important symbol of achieving world power for those who believe that world power status is important. This relationship was also brought up in the interviews.

Following a similar pattern of thinking, the more important it is believed that Brazil should maintain a status of power in Latin America (#48), the more it is believed that Brazil should build a nuclear submarine (#63) and that Brazil should have a nuclear weapon if Argentina acquires one. (#79) The importance of regional power becomes a significant factor in thinking about nuclear policy issues particularly 1) support for the nuclear submarine and 2) keeping open the option to have a nuclear weapon in case Argentina might get it.

Question #71 deals with the symbolic power of nuclear weapons and demonstrates a pattern of high correlations with nuclear policy thinking. Question #71 asks: "How important is it for Brazil to acquire a nuclear weapon to show it has obtained world power status?"¹⁰ Responses to question #71 shows significant relationships with 7 of the questions on nuclear policy, #s 59, 61, 66, 68, 72, 75, and 79. The more it is believed that it is important to acquire a nuclear weapon to show world power status:

¹⁰) This question combines power and status in one question and could be discussed under either section, however, I have chosen to include it under power.

- the more it is believed that nuclear fuel research should continue without inspections by the International Atomic Energy Agency (IAEA) (ques #59);
- the more the nuclear weapons program was supported previously (ques #61);
- the more it is believed that not all Brazil's nuclear facilities should be placed under IAEA inspections (ques #66);
- the more it is believed that nuclear weapons are needed to insure peace (ques #68);
- the more it is also felt that nuclear weapons are needed for national security (ques #72);
- the more nuclear weapons are believed to give greater control (ques #75); and
- the more it is believed that if Argentina were to acquire a nuclear weapon Brazil would have to have it, too. (#79)

These results clearly reflect the comments made by the respondents in the interviews. In the interviews it was frequently mentioned, both by those that support a nuclear capability and by those that don't, that the reason behind Brazil's nuclear program has been to use it as a symbol of world power.

Question #81 is also related to power because it asks whether nuclear weapons can be used as leverage. Leverage is

a means of gaining more power in order to influence an outcome. The more it is believed that nuclear weapons offer an advantage in negotiations (#81), the more it is believed that they also offer greater control (#75) and the more important it is for Brazil to get the bomb if Argentina were to have it. (#79)

To summarize, there are 16 significant correlations in this study between the questions on power and nuclear policy thinking. They can be categorized into two major groups: those that suggest causal relationships and those that demonstrate a relational pattern of policy thinking. One set of causal relationships are those which relate the need for power on a personal level to nuclear policy thinking. These correlations demonstrate that beliefs about the importance and need for power tend to shape policy thinking on nuclear policy. This may indicate that these respondents believe that acquiring nuclear weapons is as a manifestation of power. The other set of causal relationships would be the correlations between the importance of Brazil demonstrating its power and maintaining a status of power in Latin America.

When power is believed to be important in these two spheres, the data show that nuclear policy thinking will be affected by that belief. The importance of maintaining and demonstrating power would mean not only that nuclear weapons insure peace through deterrence, but that if Argentina were to get the bomb, it would be important for Brazil to have it,

too. Those who believe that Brazil should become a world power and should maintain a status of power in Latin America tend to believe that the nuclear submarine is good for Brazil. The nuclear submarine would project that desired power and offer a symbol of being a major world power.

The correlations that demonstrate a pattern of policy thinking are those that link the belief that nuclear weapons are needed as a demonstration of world power status with other pro-nuclear thinking. For those who do not believe that nuclear weapons are needed as a demonstration of world power status, there is a pattern of thinking that is basically anti-nuclear. Thus, there seems to be an emerging pattern of belief systems on nuclear issues. Those that are pro-nuclear believe that there should not be IAEA inspections on all nuclear facilities, that Brazil should not enter agreements like the Treaty of Tlatelolco which might restrict nuclear weapons development, and nuclear weapons give more control, enhance national security, and insure peace. Those who are not pro-nuclear tend to advocate cooperation with international regimes, do not support the nuclear submarine, and do not think that nuclear weapons insure peace or enhance national security. They also tend not to believe that if Argentina were to get the bomb, Brazil would need to have it, too. In conclusion, the results of the correlation analysis demonstrate that there is a strong relationship between the value placed on power and nuclear policy thinking. In

addition there are patterns of beliefs on nuclear issues.

III. Status

A. Responses to the Questions on Status

On the questionnaire there are eight questions dealing with the related concepts of status, esteem, and pride. Like the other independent variables in the questionnaire, the concept of status is represented in the four levels: personal: question #s 20, 21, and 22; international: question #s 5 and 6; Brazil's political environment: question #s 37 and 38; and nuclear policy thinking: question #71. The questions in general ask about the importance of demonstrating strengths to others and maintaining a strong sense of pride. The answers on all the questions dealing with status and pride tend to be evenly distributed across the continua, showing that there is range of beliefs on this concept. There is a very slight tendency of the group to believe that pride is somewhat unimportant, but in general the answers are evenly spread out. The distribution of the responses to question #6 are representative of the responses to all the questions on status and pride in general. (see Table 7G below)

Table 7G

Question #6 (N=46)

Should nations always maintain a strong sense of national pride?

Strong pride necessary					Strong pride unnecessary				
1	2	3	4	5	6	7	8	9	
15%	9%	15%	6%	17%	7%	11%	7%	13%	
(mean score = 4.8)									

The responses to question #6 represent a general pattern in thinking on beliefs about status and pride. There is a very even distribution across the scale, demonstrating that the group holds a variety of beliefs on this prescription for behavior. The mean score is right in the middle, also indicating the balance of views held by the group.

The Correlation results on Status

There are 9 significant correlations relating beliefs on status to policy thinking.¹¹ Table 7H shows a correlation matrix relating questions on status to questions on nuclear policy thinking. Like the correlation table on power (Table 7F), the vertical axis represents the questions on nuclear policy and the horizontal axis represents the questions on status.

¹¹) There are 7 others that link status to power and these were included in the section on power and I did not want to repeat in this section. Therefore, including those extra 7 questions there are a total of 16 correlated relationships with status.

Table 7H

CORRELATION MATRIX TABLE: STATUS

	personal status	Brazil's national status		international status	
nuclear policy	<u>#21</u>	<u>#37</u>	<u>#38</u>	<u>#5</u>	<u>#6</u>
ques #75	.4403#			.4244@	
ques #63		.4128@	.4887*	.3994&	
ques #58		.4339#	.4093&	.4258@	.4017&

*coefficients significant at $p < .001$

#coefficients significant at $p < .002$

@coefficients significant at $p < .003$

&coefficients significant at $p < .004$

N=41-45

Summary of questions:

#21: The importance for people to show others their strengths.

#37: The importance for Brazil to demonstrate its strengths.

#38: Importance of Brazil's maintaining national pride.

#5: Importance for nations to demonstrate their strengths.

#6: Necessity for nations to maintain national pride.

#75: Nuclear capability would give Brazil greater or lesser control.

#63: Should Brazil build a nuclear powered submarine?

#58: Should Brazil continue its research on nuclear fuel for peaceful purposes?

Question #5 asks: "Is it important for nations to demonstrate their strengths to the rest of the world?" Responses to this question correlate significantly with responses to three of the questions on policy thinking: #s 58, 63, and 75. The more important it is believed for a nation to demonstrate its strengths, the more it is believed that Brazil should continue its research on nuclear fuel for peaceful ends (ques #58), should build a nuclear powered submarine (#63), and the more it is believed that the capability to build nuclear weapons gives greater control (#75).

Question #6 asks: "Should nations always maintain a strong sense of national pride?" This question correlates significantly with question #58 regarding research on nuclear fuel for peaceful ends. The more important it is believed that nations should maintain a strong sense of national pride, the more it is believed that Brazil should continue this research.

Question #21 deals with status on the personal level. The more important it is believed to show others one's strengths, the more it is believed that nuclear weapons offer greater control (#75).

Questions #37 and #38 on Brazilian politics are also correlated with nuclear policy thinking. The more important it is for Brazil to demonstrate its strength (#37), the more

support is given to continuing the research on nuclear fuel for peaceful ends (#58), and the nuclear submarine (#63).

Question #38 reads: "Should Brazilian leaders maintain a sense of national pride for Brazil?" Responses to this question also correlate with responses to questions #58 and #63. Those who believe that it is important for Brazil to maintain a strong sense of national pride also tend to believe that Brazil should continue its research on nuclear fuel for peaceful ends and should continue its work on the nuclear submarine.

In summary, beliefs that pride and showing one's strengths to others are important both on a personal level and at a national level including Brazil, tend to correlate with support for nuclear research and the nuclear submarine. There also seems to be a relationship between pride and control. Two of the correlations reveal a relationship between the importance of demonstrating strengths and believing that nuclear weapons offer greater control. The belief that status and pride in one's strengths is important seems to make symbols of status like the nuclear submarine and the development of nuclear technology more important, also. Conversely, those who think status and pride are less important do not support nuclear technology.

If, as Rokeach suggests, status and power are important in warding off feelings of threat, then control would also be an important factor in attempts to remove threat and control

the future. In the definition of power used for this study, it was said that power is the ability to control outcomes. Power and control are dynamics that are interdependent. Those who believe power is important would probably support policies that they feel offer greater control. According to the questionnaire results, beliefs about power and status emerge as important independent variables which shape policy thinking. Beliefs about power and status are also related to beliefs about control, as those who believe that power is important also believe that nuclear weapons offer greater control.

IV. Beliefs About Competition and Cooperation in Response to the Questionnaire

A. Responses to the Questions on Competition and Cooperation

The questionnaire includes several questions on competition and cooperation to ascertain the beliefs that this group of Brazilians held on these concepts.⁽¹²⁾ There are 8 items in the questionnaire on competition and cooperation. These items are distributed over the four spheres. They are questions #14, #15, #30, #50, #51, #79, and #80. In general, the questions ask, in various ways, whether competition or cooperation is the better way to achieve goals. The first two

¹²⁾ The questions on competition and cooperation were inspired by the operational code literature. One of the operational code questions asks what is the best way to operate in dealing with an opponent, to compete? to cooperate? to negotiate?

questions #14 and #15 ask how much should nations compete and can leaders achieve national goals best through competition or cooperation. The answers to both questions are fairly evenly distributed over the range of the continuum between the two extremes with slightly more responses clustered in the middle ranges.

However, question #30 in the section on personal beliefs has a different configuration to its responses. The question asks: "Is life generally a competition to get what people need or can everybody get what they need through cooperation?" Table 7I illustrates the responses.

Table 7I

Question #30 (N=46)

Is life generally a competition to get what people need or can everybody get what they need through cooperation?

Competition					Cooperation				
1-----	2-----	3-----	4-----	5-----	6-----	7-----	8-----	9	
0%	0%	2%	9%	30%	11%	7%	15%	26%	
(mean score = 6.6)									

In this case no one marked a 1 or 2 and only one person marked 3. 30% marked 5, right in the middle, and over 40% marked 8 or 9. 59 % marked 6 or higher, saying that life is more a matter of cooperation. So, while beliefs on competition and cooperation on an international level have a wide distribution, beliefs on a personal level indicate that life is felt to be more cooperative. These results correspond

to the responses to the question on the importance of power in the personal sphere. Very few answered that power was important in personal relationships. This is similar to the responses which indicate that the group as a whole does not believe that competition is important in the personal sphere. Again, the interpretation is that cooperation in the pursuit of the common, mutual interests of the social group is perceived to outweigh competition and the need for power among members of the group.

Question #50 asks: "To what extent should Brazil and Argentina be political rivals?" No one marked 1, 2, 3, or 4, that Brazil and Argentina should be rivals or strong rivals politically. 57% marked 9, that they should not be political rivals at all. The remaining 43% marked either 5, 7, or 8. Basically, everyone believes that Argentina and Brazil should not be political rivals, but there are differences among the group as to the degree to which they should compete.

Question #51 asks: "Is it important for Brazil to be competitive with Argentina economically?" There was more distribution on this question. Every number from 1-9 was marked by someone. However, 67% still believe that it is relatively unimportant for Brazil and Argentina to compete economically. 35% marked 9, that it is extremely unimportant.

Of the remaining questions on this topic, #79 is more of a competition question and #80 is more of a cooperation question. Question #79 asks: "If Argentina acquired nuclear

weapons how important would it be for Brazil to have them, too? On this question 22% believe that it would be important for Brazil to have it; 13% marked the middle; and 65% said it would be unimportant (40% marked 9, extremely unimportant).

Question #80 asks: "How important is it for Brazil and Argentina to exchange on-site inspections of all nuclear facilities including those which do nuclear weapons research?" More than half of the respondents (62%) marked 1, extremely important, and 20% marked 2, very important. The remaining 18% were spread out with 9% marking 9, extremely unimportant.

In general, this group of Brazilian elites believe that in the international sphere, there is room for both competition and cooperation. The answers to the questions in this domain were evenly distributed between the two poles, competition and cooperation, but mainly clustered around the middle.

However, on the personal level the group believes that life is more cooperative than competitive. Most people marked that life is more cooperative and many marked that it is extremely cooperative. Some think it is about even and only a few believe that it is slightly more competitive.

Views on competition and rivalry with Argentina reflect a similar belief that the relationship between the two countries should be more one of cooperation and less one of competition. The group feels very strongly that the two

countries should not be political rivals, but somewhat less strongly about economic cooperation. The group had a somewhat more varied view about economic competition, but most believe that cooperation is more important.

On nuclear issues again for the group as a whole there is more a belief that cooperation is more important. Still there is a small group that believes that competition with Argentina on nuclear issues is still important. They believe that if Argentina were to get the bomb, it would be important for Brazil to have it, too. They also believe that it is unimportant for Brazil and Argentina to cooperate on exchanging on-site inspections of nuclear facilities.

B. The Correlation Results on Competition/Cooperation

There are 7 significant correlations between responses from the questionnaire on competition/cooperation and policy thinking. Table 7J gives the significant correlations between nuclear policy thinking and beliefs about competition and cooperation in the study.

Table 7J

CORRELATION MATRIX TABLE: COMPETITION/COOPERATION

nuclear policy	Brazil's National comp/coop		international comp/coop
	#50	#51	#14
ques #79		.5290*	.4728*
ques #75		.4183@	
ques #72	.5353*		
ques #68	.4061@		
ques #63	.4298#		
ques #59	.5590* (N=38)		

*coefficients significant at $p < .001$

#coefficients significant at $p < .002$

@coefficients significant at $p < .003$

N=42-46 except where indicated

Summary of questions:

#50: Extent Brazil and Argentina should be rivals.

#51: Importance for Brazil to compete economically with Argentina.

#14: Amount nations should compete with other nations.

#75: Nuclear capability would give Brazil greater or lesser control.

#72: Does Brazil need nuclear weapons for national security?

#68: Are nuclear weapons needed to insure peace?

#63: Should Brazil build a nuclear powered submarine?

#59: Should nuclear research continue at facilities without IAEA inspections?

Question #14 from the international sphere asks how much nations should compete with other nations. The answers range

between "compete a lot" to "not compete." The answers correlate significantly with responses to question #79 which asks: "If Argentina acquired nuclear weapons how important would it be for Brazil to have them, too?" Those who believe that nations should compete also tend to believe that if Argentina acquired nuclear weapons Brazil would have to have them, too. Conversely, those who believe that nations should not compete do not believe it would be important for Brazil to have the bomb if Argentina had it. Question #50 dealing with Brazilian/Argentine political rivalry correlated significantly with several questions on nuclear policy: #59, #63, #68, and #72. The more it is believed that the two countries should be political rivals:

- the more it is believed that nuclear research should continue without IAEA inspections (#59);
- the more the support for a nuclear submarine (#63);
- the more it is believed that nuclear weapons are needed to insure peace (#68); and
- the more it is believed that nuclear weapons are needed to maintain Brazil's national security(#72).

Each of these relationships have the converse belief system. In other words, if cooperation is believed more important, then there is not the belief that the nuclear submarine is important nor that Brazil needs nuclear weapons

to insure peace or national security.

Question #51 asks: "Is it important for Brazil to be competitive with Argentina economically?" The responses to this question correlate significantly with #75 and #79. The more important it is believed to be competitive with Argentina economically, the more it is believed that the capability to build nuclear weapons would give greater control (#75) and the more tendency there is to believe that if Argentina got the bomb Brazil would have to have it, too (#79).

The results of the answers to the questions on competition and cooperation are very interesting in terms of policy thinking. While most of the Brazilians in the sample believe that cooperation is more important in personal relationships and with Brazil's neighbor, Argentina, there is a group that believes Brazil should maintain a competitive interaction with Argentina. That belief has a definite effect on policy thinking on nuclear issues. Those who favor cooperation believe that IAEA inspections should take place and that nuclear weapons do not give more control nor do they offer greater peace or security. They also do not support the nuclear submarine, nor do they think Brazil would need the bomb if Argentina had it.

Those who favor competition believe that nuclear weapons are needed for peace and national security and that they offer greater control. The competitive group support the nuclear submarine but not IAEA inspections and they believe that

Brazil would have to have the bomb if Argentina had it.

In conclusion, beliefs about competition and cooperation play an important role in shaping beliefs on nuclear policy thinking and establishing patterns of belief systems on these issues.

V. CONCLUSION: POWER, STATUS, COMPETITION/COOPERATION AND POLICY THINKING

In summary, two important observations emerge from analyzing the data on the interviews and the questionnaire regarding prescriptions for behavior and policy thinking. The results of the present study demonstrate that two significant phenomena are occurring: 1) prescriptions for behavior expressed in the form of beliefs about power, status, and competition/cooperation shape policy thinking and 2) patterns of belief systems regarding policy thinking are formed around key beliefs related to these behavioral values.

Milton Rokeach has suggested that needs for power and status may be important attempts to overcome feelings of threat, isolation, and anxiety about the future. While there are elements of threat and isolation in many aspects of human existence, the degree to which these fears become a major focus would seem to have an impact on the importance that power and status are given by the individual. Control is another aspect of this set of dynamics because control of the future, to ward off threat, is the goal. Power and status

become the means to gain greater control. Status is a means by which a person can demonstrate evidence of strength to himself and others without having to cause damage through the actual use of power.

Experiences not only shape beliefs initially, but also act to reinforce beliefs or in some cases change existing beliefs. Rokeach explains that for most people both the need to know reality and the need to protect the self operate together to one degree or another. (Rokeach 1969, p. 68) Feelings about Brazil's vulnerability and dependence as a Third World nation and former colony, and isolation in a continent which is geographically separated from the developed world may be heightened by personal experiences of isolation and threat. Recent historical events like the Falklands/Malvinas War and the Gulf War may further reinforce a belief in the need for power and status for those who are already highly focused on threat and isolation. These same events may be considered temporary anomalies by those whose focus is more one of cooperation and faith instead of isolation and fear.

The degree to which one believes oneself to be truly and unalterably isolated would have an impact on how much one would believe that others are capable of supporting your best interests. If others are believed not to support your best interests then entering into cooperative arrangements would jeopardize those interests. Conversely, if one does not feel

isolated, that belief would also shape beliefs about cooperation. If others can be expected to support your best interests along with their own, then cooperative arrangements would not jeopardize those interests. Cooperation is believed to serve interests by some. Others do not believe that cooperation would serve their best interests. Competition would tend to serve the interests for this latter group not only because there is little faith in cooperation, but also because winning or showing well in competition would serve the need for status.

What the motivations are that generate beliefs about prescriptions for behavior is not the focus of this study. However, while motivations are difficult to measure, expressions of beliefs are accessible and measurable phenomena and appear to be very useful in predicting policy thinking. This affirms George's theory (1979) that beliefs may be the nexus between less accessible motivations and behavioral choices.

This chapter has explored the relationship between power, status, and competition/cooperation with policy thinking on nuclear issues. A series of significant correlations in the study have established a linkage between these phenomena. There are 32 correlations that have an extremely low probability of happening by chance. The correlations show that those who believe that power, status, and competition are very important have a distinct set of beliefs on nuclear

issues. Conversely, those who believe that status and power are relatively unimportant and who support cooperation instead, have the opposite set of beliefs on nuclear issues. The correlations not only suggest causal relationships but also demonstrate that a pattern of consistent belief systems are formulated around these key beliefs. Those who believe power, status, and competition are important in varying degrees also believe:

- 1) The capability to build nuclear weapons would give Brazil greater control over its ability to get what it needs.
- 2) Nuclear weapons are needed to insure peace.
- 3) Brazil needs nuclear weapons to maintain its national security.
- 4) Brazil should build a nuclear submarine.
- 5) Nuclear enrichment research should continue at the facilities which do not undergo IAEA inspections and these inspections should not take place on all nuclear facilities.
- 6) Brazil should continue its research on weapons grade nuclear material.
- 7) Brazil should continue its research on nuclear fuel for peaceful ends.
- 8) If Argentina acquired nuclear weapons it would be important for Brazil to have them, too.

- 9) The Treaty of Tlatelolco which designates Latin America as a nuclear free zone should not be put into effect.

Those who do not believe power and status are important but do believe cooperation is a better means to achieve goals tend to have the opposite system of beliefs on nuclear issues. They tend to believe the opposite, namely:

- 1) The capability to build nuclear weapons would not give Brazil greater control.
- 2) Nuclear weapons are not needed to insure peace.
- 3) Brazil does not need nuclear weapons to maintain its national security.
- 4) Brazil should not build a nuclear weapon.
- 5) IAEA inspections should take place on all nuclear facilities.
- 6) Brazil should not continue its research on weapons grade nuclear fuel.
- 7) Brazil should not continue its research on nuclear fuel for peaceful ends.
- 8) If Argentina acquired nuclear weapons it would not be important for Brazil to have them, too.
- 9) Brazil should put the Treaty of Tlatelolco into effect.

In conclusion, prescriptions for behavior become critical factors in shaping policy thinking. These prescriptions reflect the value and importance placed on how to interact successfully with the world. From the interview data it appears that value trade-offs may be different for each individual and do not seem to relate to how that individual describes the world outside. Some of the interviewees described the world as full of conflict, yet explained that cooperation and moral considerations were highly valued as guides for interacting in that world. Others saw the world as conflictual and believe that moral considerations are relatively unimportant while competition is seen as very important. The questionnaire data show that for some, the highest value is defending one's pride and maintaining power. For others, greater value is placed on cooperation and maintaining a broader sense of universal collective security. These key beliefs tend to form patterns of thinking.

The present study demonstrates that prescriptions for behavior expressed in the form of beliefs about the importance of power, status, and competition/cooperation have a significant capacity to form themselves into cohesive patterns of belief systems which are formulated around key beliefs and which, from the correlation patterns revealed here, tend to shape policy thinking.

Chapter Eight

AN ANALYSIS OF THE POLAR POSITIONS

I. THE STUDY OF CONTRASTING GROUPS

Previous studies have focused on specific subgroups within a population sample. Milton Rokeach (1969), in his examination of the authoritarian personality, developed a questionnaire the answers to which formed the dogmatism scale. While there was a range of answers on the dogmatism scale by the entire sample, Rokeach was interested in studying those at the extreme ends. These two subgroups of the sample formed his open minded and closed minded respondents. He found that there were significant differences in the two groups in the way they thought about other issues and in the way they performed tasks. A greater understanding of the phenomena of open and closed mindedness was gained from contrasting the more extreme groups.

Other researchers, Putnam (1973), Converse (1964) and Tetlock (1983, 1984) studied opposite groups which they referred to as Liberal and Conservative. While there was a range of liberal/conservative responses in their studies, they were interested in what were the defining characteristics of a "liberal" or a "conservative." Therefore, it was useful to look at the extreme groups. Putnam found that having a clear

ideology facilitated policy organization and did not interfere in the bargaining process that goes on in Parliament. When Tetlock examined Putnam's data, he found that the extreme conservatives had dogmatic belief patterns which corresponded to Rokeach's closed-minded group.

Ole Holsti (1977) was also interested in examining subgroups in his creation of the operational code typology. The typologies were established as a result of examining speeches and other written work by political leaders and analyzing it through a process called content analysis. With this information, Holsti formed six groups, types A - F. Each type is described as having a specific worldview and a pattern of policy prescriptions. Type A represents one extreme type which general believes that conflict is temporary and that there is some level of harmony of interests among nations. Peace can be obtained through better education and leaders should always look for ways to negotiate. Types B-D gradually see conflict as a more permanent condition, do not feel that education or other means can change that condition and tend to rely less on compromise and more on force. Types E and F are fairly similar. Types E and F believe that conflict is permanent and often unavoidable, the nature of conflict is win/lose, and military capabilities are important to attain national goals. (The extreme types are described further below.)

In accordance with the previous studies just mentioned,

it appeared that it would be useful to examine this sample of members of the Brazilian elite to see if two extreme subgroups existed for analysis. Like Rokeach's study of The Open and Closed Mind (1969), it was felt that it would be useful to contrast the two extreme groups according to their policy thinking on nuclear issues and examine how they responded to the other questions in the study. The question to be examined is: who is pro-nuclear and who is anti-nuclear and how does each group think?

The correlation analysis in the previous chapter shows that there is a significant relationship between certain variables and policy thinking. This chapter presents another method of examining the results of the data which helps make the results more tangible. Examining how items on the questionnaire relate to one another has demonstrated that there are correlated patterns of thinking on nuclear issues. An examination of the two extreme subgroups, knowing that there is a range of thought in between the two groups, offers an opportunity to study and compare the thought processes which represent two model types.

The policy thinking of the two subgroups in this study roughly correspond to the policy prescriptions of two of the types in Holsti's typology. Holsti's type A's policy prescriptions are to pursue common international interests and seek consensus using conciliatory approaches to negotiation. For the type A, military prescriptions are not a high

priority. Holsti's type E ¹ strongly supports national interests and national security over common international interests. Type E views negotiations from a zero-sum point of view where outcomes are win or lose. Consensus seeking is not a priority for Type E, however, military prescriptions for type E take on a important role. While these policy descriptions basically fit the two extreme subgroups of this study, the worldview that Holsti attributes to these two types does not fit for this study. Holsti's type A views the world as potentially harmonious, while his type E sees the world as permanently full of conflict. The two contrasting policy subgroups in this study have varying worldviews. However, Holsti's types A and E make a useful tool for classification and therefore will be used for the two subgroups here. But because the worldviews don't fit Holsti's typology, the subgroups here will be labeled type A* and type E*.

The responses to the questionnaire for this research study revealed a range of beliefs on most variables. However, two groups emerged from the study with distinct patterns of policy thinking on the nuclear issues. The type E* group expressed a pattern of beliefs which support the development of nuclear weapons research and the nuclear powered submarine. They do not advocate entering into international agreements or

¹) Holsti also has a type F which is similar to the type E, but Holsti had not developed the policy prescriptions for the type F as fully as the type E and therefore it was not as clear a model for the purposes of this study.

engaging in the exchange of inspections on nuclear facilities and believe that if Argentina were to acquire a nuclear weapon Brazil would have to have it, too. On the other hand, a type A* group also emerged with a pattern of policy thinking that was quite different than the type E*. The type A* group believes that Brazil should not continue research on nuclear weapons grade fuel and should not build a nuclear powered submarine. This group also believes that Brazil should enter into international agreements and should not acquire a nuclear weapon even if Argentina were to do so.

The existence of these two distinct patterns of beliefs suggested the formation of an index which would show how these two groups responded to questions developed in accordance with the independent variables in the study, e.g. power, conflict and harmony, status, etc. A separate index was created for each concept. Specific questions were selected to make up each index. The indexes offer another way of demonstrating relationships between beliefs and policy thinking and policy preference using aggregate scores.

II. The Power and Status Indexes

A. The power index

As was discussed in the previous chapter, power emerged

as one of the most significant independent variables in correlation with policy thinking and preference. There are 14 questions in the questionnaire which deal with power. The questions are distributed over the four spheres of belief systems: 1) the individual; 2) Brazil or national politics; 3) international politics; and 4) nuclear issues. A matrix was laid out which correlates each question on power with every other question on power to see if there was a pattern of significant interrelationships. Four of the power questions had responses which had very low levels of relationship with the other power questions and were therefore eliminated from the formation of the index. The remaining ten of the 14 questions on power were selected to make up the power index.

The responses to the ten questions on power were then added for each of the two subgroups. The type E* group includes those who answered 6, 7, or 8 out of the ten policy questions in a pro-nuclear, anti-international cooperation manner. The type A* group was selected from those who answered the questions in a anti-nuclear, pro-international cooperation manner. There are a total of six people in each group. (The total of 12 equals about 20% of the whole sample.) The two groups represent the extreme opposite models of anti-nuclear and pro-nuclear policy belief systems.

All the power questions were constructed in a manner so that responses fell on a scale with 1 indicating extremely important and 9 extremely unimportant. The scores for each of

the type E* group were recorded for each of the ten power questions used in the index. Then an average item score was computed from these responses. The same process was followed for the type A* group. Table 6A shows the power scores on each item for the two groups.

Table 8A
THE POWER INDEX

<u>power</u> <u>questions</u>	Type E* The Respondents' Scores					
	#60	#46	#19	#53	#48	#24
ques #10	1	3	3	2	1	1
ques #11	7	5	5	6	5	5
ques #12	7	2	7	4	3	5
ques #26	5	5	3	3	3	1
ques #27	5	7	3	4	3	1
ques #28	5	7	2	2	2	3
ques #46	5	2	3	3	4	1
ques #47	1	2	2	1	3	1
ques #48	3	2	2	2	3	1
ques #77	4	5	3	3	2	1
Index score	4.30	4.00	3.30	3.00	2.90	2.00
<hr/>						
Average index score for Type E* (pro-nuclear) = 3.25						

Type A* Respondents' Scores

	#23	#5	#25	#28	#50	#35
ques #10	8	1	3	9	6	1
ques #11	7	9	7	9	5	9
ques #12	8	9	7	9	9	9
ques #26	9	9	7	9	9	9
ques #27	9	1	3	9	6	5
ques #28	9	6	3	9	3	9
ques #46	9	1	7	9	9	1
ques #47	9	5	7	5	9	5
ques #48	9	9	7	9	9	9
ques #77	3	9	3	5	5	9
Index score	8.00	5.90	5.40	8.20	7.0	6.6

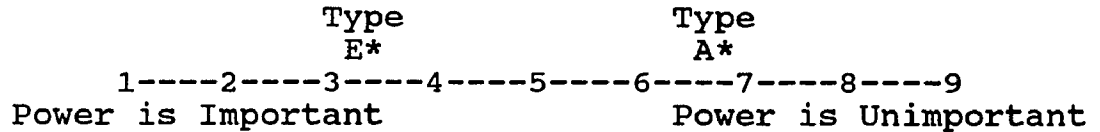
Average index score for Type A* (anti-nuclear) = 6.85

Summary of questions for Table 8A:

- #10: Importance of power in international politics.
 #11: Military or economic resources as most important source of power.
 #12: Essential for leaders to negotiate from military strength.
 #26: Importance of power in relationships between people.
 #27: Necessity of holding leverage to get what people need.
 #28: Necessity of power to get what people need.
 #46: Importance for Brazil to demonstrate its power.
 #47: Importance for Brazil to become a major world power.
 #48: Importance for Brazil to maintain power in Latin America.
 #77: Having a nuclear weapon would give Brazil more or less power.

The average index score for the Type E* group on the power index is 3.25 or that power is relatively important. The type E* group believes that power is important on all levels included in the study. The average index score for the Type A* group is 6.85 or that power is unimportant. The Type

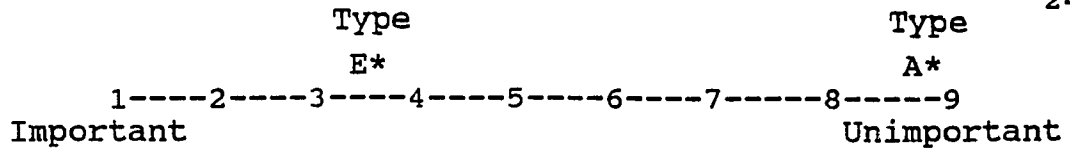
A* group believes that power is relatively unimportant. The difference between the two scores is 3.6 which is a substantial difference.



A key discriminant seems to be question #47 which asks how important it is for Brazil to become a major world power. The average score on this question for the Type A* (anti-nuclear group) is 6.67, while its average score for the Type E* (pro-nuclear group) is 1.67. Becoming a major world power appears to be a very important factor for the Type E* group and not important to the Type A* group.

Another important factor which illustrates a substantial difference between the two groups is the importance of power in personal relationships. The average score for the Type E* group on question #26, dealing with power in personal relationships, is 3.3, very important. The Type A* group feels completely differently about this issue. Their average score on this question was 8.7, extremely unimportant. This is a very important underlying central belief that differentiates the two groups and shapes a pattern of thinking on beliefs about power and policy issues.

Question #26: In relationships between people, is it important to maintain power?



B. The Status Index

The status index was developed in the same manner as the power index. The status questions use words like pride, showing one's strengths, and maintaining status. There are 9 questions on the questionnaire which relate to status in the four spheres of belief systems. Seven of these nine questions were used for the status index selected for their high scores on status inter-correlations.

As with the power questions the importance of status and pride are indicated by marking the lower numbers on the scale. A belief that status and pride are less important is indicated by marking the higher end of the scale. Table 6B shows the scores for the Type A* and Type E* respondents.

Table 8B
THE STATUS INDEX

status questions	<u>Type E* Respondents' Scores</u>					
	#60	#46	#19	#53	#48	#24
ques #5	6	4	4	3	2	1
ques #6	5	1	3	1	5	1
ques #21	5	3	4	4	3	5
ques #22	7	2	4	3	3	1
ques #37	5	2	2	1	5	1
ques #38	5	2	2	3	4	1
ques #71	1	8	7	4	5	9
Index score	4.86	3.14	3.71	2.71	3.86	2.71

Average index score for Type E* (pro-nuclear) = 3.5

status questions	<u>Type A* Respondents' Scores</u>					
	#23	#5	#25	#28	#50	#35
ques #5	9	5	7	9	8	5
ques #6	8	1	7	9	9	7
ques #21	9	9	6	9	7	5
ques #22	9	3	2	9	8	9
ques #37	8	1	3	9	9	5
ques #38	8	5	8	9	9	1
ques #71	9	9	9	9	9	5
Index score	8.57	4.71	6.00	9.00	8.43	5.29

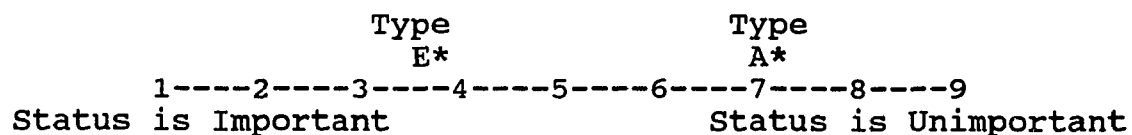
Average item score for Type A* (anti-nuclear) = 7

Summary of questions for Table 8B:

- #5: Importance for nations to demonstrate their strengths.
- #6: Necessity for nations to maintain strong national pride.
- #21: Importance for people to show others their strengths.
- #22: Importance for people to have a sense of pride.

- #37: Importance for Brazil to demonstrate its strengths.
 #38: Importance of maintaining a sense of pride for Brazil.
 #71: Importance for Brazil to acquire a nuclear weapon to show it has obtained world power status.

On the status index, the Type E* group has an average index score of 3.5, meaning that pride, status, and showing one's strengths are relatively important. Conversely, the Type A* group demonstrated that they believe that status and pride are relatively unimportant. Their average index score on the status index was 7. There is a 3.5 difference between the two scores indicating a substantially different belief system for the two groups.



C. A Combined Status and Power Index

In the previous chapter it was explained that according to this study beliefs about both power and status appear to shape policy preference and thinking. There were a number of significant correlations between beliefs on power and status and the policy questions. Therefore, a combined power/status index² was formed on the two groups to see if the difference held up when combining the two scores. Again the two groups were substantially different. The average index score on the

²) This may seem redundant, but it was felt that combining the scores might nullify the effect instead of reinforcing it. Therefore, the test was warranted.

power/status index for the Type E* group was 3.4 indicating that for this group both power and status are relatively important values. The average score for the Type A* group was 6.94 indicating that for this group, power and status are quite unimportant. The difference between the index scores of the two groups is 3.54 which indicates a strong difference in the belief systems of the two groups on these two variables.

Power and Status

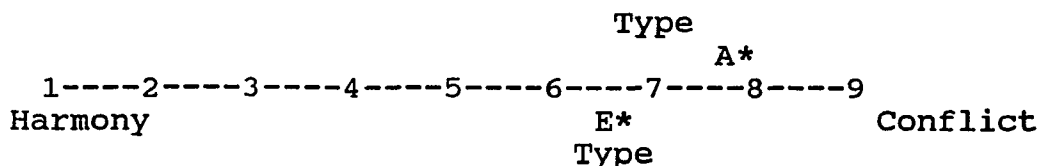
	Type		Type							
	E*		A*							
	1	2	3	4	5	6	7	8	9	
	Important							Unimportant		

III. THE CONFLICT/HARMONY INDEX

A conflict/harmony index was also created from the responses to questions in the questionnaire. One hypothesis of the study was that world view as represented by beliefs about conflict and harmony shaped policy thinking. Comparing the beliefs of the two groups whose policy thinking falls on opposite extremes is another way to test this hypothesis. There are 7 questions on conflict and harmony which are distributed over the four spheres of thought. Because there are fewer questions on conflict and harmony than on power and because they all appear to be of equal value to the analysis, all 7 were included in the index.

Again an average index score was computed for the two groups from their responses to the conflict/harmony questions. The results are very interesting. Beliefs about conflict and

harmony show almost no difference between the Type A* group and the Type E* group. The average index score for the Type E* was 6.08 while the average index score for the Type A* was almost the same, 6.38.



These results reinforce the earlier findings of this study that world view based on beliefs about conflict and harmony does not predict policy preference and thinking.

IV. THE COMPETITION/COOPERATION INDEX:

In the previous chapter it was demonstrated that beliefs about competition and cooperation show a number of significant correlations with policy thinking. The three variables, power, status, and competition/cooperation, appear to shape patterns of policy thinking on the issues incorporated into this study. A separate competition/cooperation index was created to test how the Type A* and Type E* groups believe on issues of competition and cooperation.

There are 14 questions in the questionnaire which deal with the concepts of competition and cooperation across the four spheres of thought. Ten of these questions were selected for the index because of their higher rate of inter-correlation. An average index score was then computed for the Type E* group and the Type A* group to see what each group

believes about the importance of competition and cooperation. Table 6C shows the scores for the two groups on competition and cooperation.

Table 8C
THE COMPETITION/COOPERATION INDEX

comp/coop questions	Type E* Respondents' Scores					
	#60	#53	#19	#46	#48	#24
ques #14	na	2	3	5	5	1
ques #15	5	3	4	7	4	1
ques #16@	7	8	7	8	4	5
ques #30	5	4	4	7	3	5
ques #31@	5	7	6	4	3	5
ques #50	5	8	8	8	5	9
ques #51	5	5	5	8	7	1
ques #52@	9	8	7	8	7	9
ques #54@	3	7	3	3	5	1
ques #79	1	4	1	8	3	1
Index score	5.00	5.60	4.80	6.60	4.60	3.80

\bar{X} Average index score for Type E* (pro-nuclear) = 5

Type A* Respondents' Scores

comp/coop
questions

	#23	#5	#25	#28	#50	#35
ques #14	9	4	7	9	7	9
ques #15	9	9	7	9	7	1
ques #16@	8	9	7	9	7	9
ques #30	8	9	5	9	5	9
ques #31@	8	9	7	9	5	5
ques #50	9	9	8	9	9	9
ques #51	9	9	7	9	9	9
ques #52@	9	9	7	9	9	9
ques #54	3	1	4	5	2	2
ques #79	8	9	7	9	9	9

Average index score for Type A* (anti-nuclear) = 7.5

@scores were adjusted because poles were reversed on qst.

Summary of questions for Table 8C.

#14: Amount nations should compete with other nations.

#15: Competition or cooperation is better for achieving national goals.

#16: Assume situations are win/lose or mutual gain.

#30: People get what they need through competition or cooperation.

#31: Gains for both sides or one side wins or loses.

#50: Extent to which Brazil and Argentina should be rivals.

#51: Importance for Brazil to compete with Argentina economically.

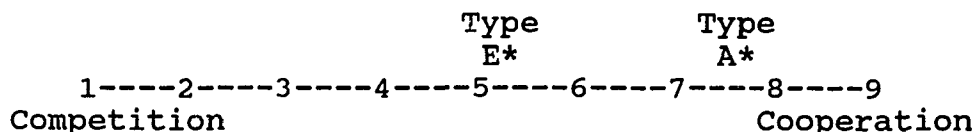
#52: Extent to which Brazil should be involved in cooperative international endeavors.

#54: Extent to which Brazil's leaders should compromise or hold the line.

#79: Importance for Brazil to have nuclear weapons if Argentina acquired them.

The average index score for the Type E* group was 5 or right in the middle of the scale. The group in general

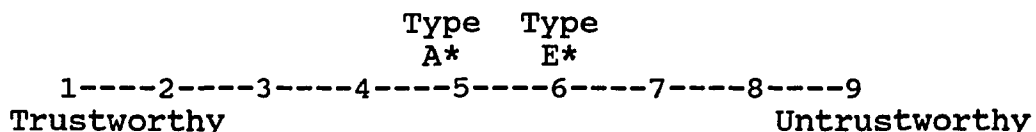
believes that both competition and cooperation are about equally important in dealing with personal and political issues. However, the average item score for the Type A* group was 7.5.



The Type A* group believes that cooperation is much more important than competition in dealing with issues. The difference between the two group scores is 2.5 which shows a distinct difference in the belief systems for the two groups on this concept.

V. The Trust Index

A trust index was formed in a similar way to the previous indexes to see how the two extreme groups think about trust. Six questions on trust were used to create the index. Individual scores on trust items were pulled out of the data set and an aggregate score was calculated for the Type E* group as well as the Type A* group.

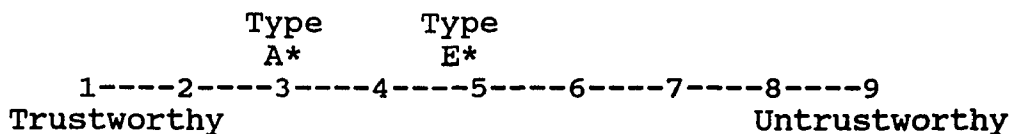


The results show a slight difference between the two groups. The average index score across the six trust questions for the Type E* group is 5.78, which indicates that

they believe that other people and/or nations are somewhat untrustworthy. The average index score on the six questions for the Type A* group is 4.67. They believe that others are only slightly more trustworthy than untrustworthy. The two groups responses on all the trust questions hover near the middle of the scale with one group on the trusting side and the other on the non-trusting side. The difference between the two scores is 1.11. This is not a strong difference but, nevertheless, an indication that there is some difference between the two groups on their beliefs about trust as a whole.

A closer look at the two groups and their answers to individual trust questions revealed some other differences. While the two groups were almost identical in their answers to trust on a personal level there was a substantial difference in their answers to question 34:

Should Brazil's leaders trust the neighboring countries in the region?



The Type A* (anti-nuclear) group had an average index score of 2.83 on this question. Type A* believes that Brazil's leaders should generally trust their neighboring countries. The Type E* (pro-nuclear) group had an average

score on this question of 4.66. This is just about in the middle of the 9 point scale. While they hover just slightly on the trusting side of the scale they basically believe that neighboring nations should be trusted about equally as not trusted. In other words, they are equally trustworthy as untrustworthy. The difference between the scores for the two groups is 1.83.

While the two groups both believe that people can be trusted in personal relationships, the belief systems of the two groups begin to diverge when it comes to trusting other nations in the region. Beliefs about trust on the national level appear to play a significant role in distinguishing the belief systems of these two groups whose policy thinking on nuclear issues is diametrically opposed. So, while the questions on trust do not show any substantial direct correlations with questions on policy preference, there appears to be a possible indirect link.

Responses to the questions also show (see chapter 9) that those who do not trust neighboring countries feel that Argentina and Brazil should be political rivals. Those that see Brazil and Argentina as rivals also tend to support the development of a nuclear weapons capability.

VI. INDEX SUMMARY

The indexes offer another means for testing the relationship between beliefs and policy thinking. By focusing

on the two extreme subgroups, Type A* and Type E*, it is possible to formulate a model which reflects an anti-nuclear process of thinking and a pro-nuclear process of thinking. The same meaning emerges from an analysis of the bi-variate correlations in the study, but does not give as clear a picture of belief patterns of those about whom we are talking. The formation of the indexes utilizes aggregate data to form a more generalized picture of the thinking patterns of specific groups. The results of the index analysis show that there are substantial differences in the belief systems of the two groups on certain sets of variables.

In general the Type E* group supports a policy of nuclear enrichment up to the weapons grade level and does not support entering into international agreements. This same group also believes that power and status are important and believes that it is very important for Brazil to become a world power. The Type E* group also believes that it is important to maintain power in personal relationships. In addition, they tend to feel that both competition, cooperation, and trust should play about equal roles in dealing with issues in personal and political life.

Conversely, the Type A* group does not support nuclear enrichment to the weapons grade level and prefers entering into international agreements. In contrast to the Type E*, the Type A* group does not believe that power and status are important and they believe that power is extremely unimportant

in personal relationships. They also believe that cooperation should play a much greater role than competition in dealing with issues and that others, including Brazil's neighbors, are generally trustworthy.

Both groups had about the same average item score on beliefs related to conflict and harmony showing about the same range of beliefs for the two groups on this concept. This again demonstrates that worldview is not a factor in shaping policy thinking.

In regard to the operational code research, the results of this study suggest that Alexander George's questions have made a very significant omission. Neither the philosophical questions nor the instrumental questions ask anything about values. The goals mentioned in the instrumental questions refer to more limited goals such as specific foreign policy objectives and not goals in relation to striving to promote specific values. The importance of certain behavioral objectives like power, status, moral considerations, etc. are never brought up in any of the operational code questions. The data in this study have shown that the philosophical questions which ask about worldview do not elicit responses which predict policy thinking. In addition, even the instrumental questions, which deal more with behavioral choices rather than philosophical descriptions of the world, still do not delve into behavioral values, but remain strictly questions about practical approaches to strategy. This

appears to reflect that the operational code studies fall into the "rational actor" paradigm of political theory. This approach ignores, or rejects, the notion that non-rational behavior like values and emotions bear any significance in shaping policy. This study indicates that policy thinking is much more complex than the "rational actor" model indicates. While George is correct when he says that beliefs form a nexus between the deeper subconscious and final decisions about behavior, he has not taken into account the enormous significance of individual value systems.

In summary, beliefs about status, power, competition, cooperation, and trust do appear to play a significant role in shaping policy thinking on the issues contained in this study. Two of the most significant differences between the two groups are their beliefs about the importance of power in personal relationships and how important it is for Brazil to become a major world power. The value placed on power is shown to have a significant relationship to nuclear policy thinking.

Chapter Nine

PATTERNS EMERGING FROM THE QUESTIONNAIRE WHICH INDICATE CONVERGENT BELIEF SYSTEMS

An analysis of the responses to the questionnaire indicate that people tend to have patterns of beliefs across various concepts which form convergent belief systems. Beliefs about conflict and harmony, as discussed in previous chapters, are related to beliefs in other areas, i.e., threat and trust. These patterns converge to form a larger, more encompassing system of beliefs. Those who view the world as harmonious also tend to believe that other people and nations are friendly and that they can be trusted. Those who view the world as more conflictual tend to believe that people and nations are threatening and that they can be trusted or not trusted about equally. In other words, people tend to have a worldview which takes into consideration various types of beliefs. As noted earlier, however, this pattern of beliefs which describe the nature of the political and social world does not predict policy thinking.

There are also converging patterns of beliefs on the value placed on prescriptions for behavior. The responses to the questionnaire indicate relationships among beliefs held on the importance of power, status, and competition, for example. Converging belief systems pertaining to these values do tend

to predict policy thinking. This chapter will examine relationships across different concepts to show how belief systems incorporate other factors to form larger compatible systems.

I. THREAT

There are several items on the questionnaire which ask whether the respondents see life as generally more threatening or friendly. Questions dealing with the concept of threat were developed in all four spheres of belief systems in the study. The purpose of these questions was to ascertain whether or not the respondent felt the world was a hostile or accepting place in which to live.

The philosopher Thomas Hobbes saw the world as hostile and anarchic with every man for himself. On the other hand, the philosopher Jean-Jacques Rousseau saw a more peaceful world where humankind worked together in communities. Political scientists have often thought that worldview, whether hostile or peaceful, is likely to have an impact on policy thinking. Milton Rokeach, in discussing his research on the The Open and Closed Mind (1969), suggested that beliefs about threat play an important role in open and closed-mindedness. He explained that high levels of perceived threat led to dogmatism and closed-mindedness. This section will explore how perceptions of threat relate to other concepts in the questionnaire and to policy thinking for the sample of

members of the Brazilian elite who make up this study.

A. Threat and Conflict/harmony

Threat and conflict as well as friendliness and harmony are concepts which are linked. It would seem likely that conflict would arouse feelings of threat and that harmony would elicit perceptions of friendliness. The concepts are different, however, in one respect. Conflict describes a condition distinct from a person's reaction to it. One can observe that conflict exists, but not be threatened by it. Threat involves a personal reaction by the individual. Similarly, harmony describes a set of conditions, a commonality of activity, which may or may not involve the observer. Friendliness involves an interaction between the viewer and what is being perceived. Again, there is a personal response to the condition being described. In this regard, conflict/harmony and threatening/friendly are related but distinct concepts. Therefore, responses to the questions on these two sets of concepts are not measuring the same phenomena.

There are a number of significant correlations between the items on threat and those on conflict and harmony. These correlations appear within a particular sphere of thought, e.g., international politics, and across spheres, e.g., between personal beliefs and national beliefs. People who tend to believe the world is threatening also see it as

conflictual. Conversely, those that view the world as friendly believe it to be harmonious. That relationship makes sense and the respondents do seem to have a set of beliefs on these two concepts which form a world view. Table 9A shows the significant relationships between responses to questions on threat and friendliness and those on conflict and harmony.

Table 9A

THREATENING/FRIENDLY
AND
CONFLICT/HARMONY

conflict harmony	Threatening/Friendly				
ques:	#7	#23	#24	#39	#40
ques #1	.5672*				
ques #18	.4658*		.4470*		.4210"
ques #32		.3746@	.4525*		
ques #33				.4560*	

*coefficients significant at $p < .001$

"coefficients significant at $p > .002$

@coefficients significant at $p > .005$

N = 44-46

Summary of questions for Table 9A:

- #1: Nature of international politics in terms of conflict or harmony.
- #7: Extent to which nations are friendly or threatening.
- #18: The world is essentially harmonious or conflictual.
- #23: Extent to which people are secure or anxious.
- #24: World is basically friendly or threatening.
- #32: Extent to which Brazil's regional environment is harmonious or conflictual.
- #33: Brazil's recent relations with other countries in terms of conflict or harmoy.
- #39: Brazil's neighbors generally friendly or threatening.
- #40: Brazil is secure or anxious in relations with countries

outside the region.

Those who believe nations are friendly also tend to believe that the world and international politics are generally harmonious. Conversely, those who believe that nations are more often threatening to each other also believe that the world is more conflictual.

Those who see the world and Brazil's neighbors as more friendly, also believe that the world and Brazil's political environment are more harmonious. Those who believe the world and Brazil's neighbors are more threatening also tend to believe that the world and Brazil's political environment are more conflictual.

B. Threat, Anxiety, and Conflict

There are two other similar items that relate to conflict/harmony but which do not use the word threat in the question. For example, question 23 asks: In a general way do people usually feel secure or anxious? The assumption is that feeling anxious is related to feeling threatened and that feeling secure is related to feeling that one is in a friendly environment. This question which deals with anxiety/security has a relationship to conflict/harmony which is similar to that of threat.

Responses to question 18, which asks if the world is more harmonious or conflictual, relate significantly to responses to question 40, which asks: Do Brazilians feel secure or

anxious in their relations with nations outside the region, for example, the major powers? The respondents who believe that the world is more harmonious tend to also believe that Brazilians feel secure in their relations with nations outside the region, and those who see the world as more conflictual believe Brazil is less secure. There appears to be a pattern in beliefs held by this group of Brazilian elites on the the hostile or peaceful nature of the world. Those who believe the world is more conflictual also tend to view relationships as more threatening and anxiety producing. Those who take the opposite view tend to see the world as harmonious, friendly, and secure.

C. Threat, Anxiety/Security, and Nuclear Policy Thinking

While there are 16 items on power and 9 items on status which correlate significantly with policy thinking, responses to only one question on threat and two questions on anxiety/security correlate significantly with thinking on nuclear policy. Curiously, the relationships are the exact opposite of what one might expect. One would expect that those who feel more threatened by their neighbors would support nuclear weapons capability. That does not appear to be the case. Question 39 reads: Are Brazil's neighbors in the region generally friendly or threatening? Question 71 asks: How important is it for Brazil to acquire a nuclear weapon to show it has obtained world power status? There is a negative

relationship between the responses to these two items on the questionnaire. (see Table 9A) Those who believe that Brazil's neighbors are generally friendly also tend to believe that it is important for Brazil to acquire a nuclear weapon to show it has obtained world power status.

One would expect that those who believe Brazil's neighbors are friendly would believe it was not important for Brazil to acquire a nuclear weapon. However, it seems apparent that for Brazil a nuclear weapon is not seen as a deterrent against aggression from local rivals. Those respondents in this study who believe that it is important for Brazil to acquire a nuclear weapon believe that Brazil's neighbors are friendly and are not going to attack. Acquiring a nuclear weapon may be more a symbol of technological advancement and a message to the world that Brazil can command the kind of respect that is reserved for the advanced industrialized powers.¹

While Brazil and Argentina have traditionally been seen as rivals, a new level of cooperation has developed between the two nations. It is possible that the thinking on this issue may be that acquiring a nuclear weapon and joining the "nuclear club" may be accomplished more readily through friendly cooperation with Argentina than through rivalry.

¹) A cross check was conducted to see whether there was any relationship between questions on anxiety and questions on prestige. There does not seem to be any relationship between these two variables in this study.

Leventhal and Tanzer in their book Averting a Latin American Nuclear Arms Race (1992) written as the summary to a conference held in Latin America on that issue, stated:

At the same time, there was the scent of change in the air as it became apparent from conference discussions that the two nations now found it in their mutual interest to pursue the difficult process of ending 150 years of mutual suspicion. That interest was expressed in a number of ways by participants, all suggesting a new common awareness that Argentina and Brazil must achieve greater integration of their economic and security interests if they are to be successful in managing their affairs at home and in projecting power and influence outside the region. (Leventhal and Tanzer, 1992, p.1)

A somewhat cynical view expressed in one of the interviews from this study is that while the two countries are unlikely to be able to help each other technologically, they can help each other politically by cooperating on mutual inspections on nuclear facilities in a way that does not intrude on the other side's development. Some of the military who were interviewed expressed satisfaction with the bilateral arrangements on inspections with Argentina but did not want the IAEA to get involved.

While most of the respondents in this study favor cooperation with the IAEA, Oliveiros S. Ferreira, a participant in the aforementioned conference, a specialist in Brazilian military affairs, and professor at the University of Sao Paulo, sees "nuclear cooperation as an effort by Argentina and Brazil principally to overcome international pressure to

sign the Nuclear Non-Proliferation Treaty (NPT) and thereby permit them to proceed with indigenous nuclear programmes, free of international constraints." (Leventhal and Tanzer, 1992, p. 9)

The group of Brazilian elites who advocate a nuclear weapons capability policy for Brazil may see nuclear cooperation as a mutual advantage for Brazil and Argentina. In the interviews a number of people mentioned the Falklands/Malvinas War and the fact that Great Britain had attacked Argentina using nuclear submarines.⁽²⁾ It is also suspected that there were nuclear weapons on board British ships (Friedman and Gamba-Stonehouse, 1989). The US supported Great Britain and did not come to the defense of Argentina against outside aggression as it had said it would do in the Monroe Doctrine. A nuclear defense may be viewed as a necessity against a power outside the region rather than against a Latin American neighbor.

A number of other relationships emerged from the questionnaire which indicate a similar pattern of thinking for some of the respondents. That pattern is that even though

²⁾ The issue of nuclear powered submarines has two components: 1) some people see submarines for military use as weapons and hence nuclear powered submarines would fall into the category of nuclear weapons even though it is nuclear propulsion and not nuclear explosives; 2) the enrichment process for nuclear propulsion fuel is the same as that for nuclear explosive material, so continuing the production of enriched nuclear material for propulsion in unsafeguarded facilities like Aramar would allow the Brazilian military to stockpile enriched material for later use in nuclear explosives.

Latin America is friendly and secure, Brazil ought to have a nuclear capability. Question 74 asks: If Brazil had nuclear weapons, would that make its neighbors more or less secure? The responses to this question correlate significantly with several policy questions. Those who believe that if Brazil had a nuclear weapon its neighbors would feel more secure also tend to support the continuation of Brazil's research on weapons grade nuclear material, question 57. Table 9B illustrates this relationship and other similar ones.

Table 9B

Security to the Region

nuclear thinking	question #74
ques #57	.6308* (N=43)
ques #59	.5135* (N=36)
ques #60	.3920@ (N=43)
ques #68	.3923@ (^N=43)

*coefficients significant at $p < .001$

@coefficients significant at $p < .005$

Summary of questions for Table 9B:

- #57: Should Brazil continue its research on nuclear explosive material?
- #59: Should nuclear research continue at facilities without IAEA inspections?
- #60: Can Brazil economically afford to build nuclear weapons?
- #68: Are nuclear weapons needed to insure peace?
- #74: If Brazil had nuclear weapons would it make its

neighbors more or less secure?

This group does not believe that a Brazilian nuclear weapon would pose a threat to its neighbors. If it is not viewed as a threat to its neighbors then the capacity to build a nuclear weapon must have some other purpose than local deterrence. The purpose must have a focus somewhere outside the region. It may be to act as a deterrent to forces outside Latin America or it may simply be to create a kind of respect.

Responses to question 74 also correlate significantly with responses to item 59 which asks: Should nuclear fuel research continue at the facilities which do not undergo inspection by the International Atomic Energy Agency? Those who believe that a Brazilian nuclear weapon would not threaten its neighbors, also tend to believe that Brazil should continue nuclear fuel research without IAEA inspections.

Two somewhat weaker correlations emerge between question 74 and policy items 60 and 68. Question 60 asks whether Brazil can afford to build nuclear weapons with its present economic problems. Question 68 asks whether with the end of the Cold War nuclear weapons are needed to insure peace. Those who believe that a Brazilian nuclear weapon would not threaten its neighbors tend to also believe that Brazil can afford to build nuclear weapons and that nuclear weapons are needed to insure peace. Conversely, those who believe that a nuclear weapon would make Brazil's neighbors less secure tend

to believe that nuclear weapons are not needed to insure peace and Brazil cannot afford them.

The questions dealing with a Brazilian nuclear weapon and regional security and its relationship to nuclear policy thinking in general seem to reflect a pattern of thinking rather than a causal relationship. In other words, believing that a Brazilian nuclear weapon does not threaten its neighbors does not cause someone to support the development of weapons grade nuclear material but does play a role in believing it is acceptable to go ahead with it. Both beliefs are a part of a belief system that views nuclear weapons as positive. Those who support the development of a nuclear weapons capability generally have a consistent policy view which 1) sees a weapons capability as contributing in a positive manner to security and 2) supports the continued development of weapons grade nuclear material unimpeded by inspections.

D. The Relationship Between Threat and Trust

There are several significant correlations between items on threat and trust. Table 9C illustrates these relationships.

trust

Table 9C

270

	ques: #39	#40	#74
ques #34	.6714* (N=46)		-.6279* (N=44)
ques #19		.4394* (N=46)	

*coefficients significant at $p < .001$

Summary of questions for Table 9C.

#19: The extent to which people are trustworthy or untrustworthy.

#34: The extent to which Brazil should trust neighboring countries.

#39: The extent to which Brazil's neighbors are threatening or friendly.

#40: The extent to which Brazilians feel secure or anxious in their relations with nations outside the region.

#74: A Brazilian nuclear weapons would make its neighbors more or less secure.

Question 39 asks: Are Brazil's neighbors in the region generally friendly or threatening? This question correlates very highly with question 34 which asks: Should Brazil's leaders trust the neighboring countries in the region? Those who believe that Brazil's neighbors are friendly also tend to believe that Brazil's leaders should trust them. Those who believe that Brazil's neighbors are threatening also tend to believe that Brazil's leaders should not trust them.

That makes sense. But, as we saw in the previous paragraphs question 39 also relates to the question on whether Brazil should acquire a nuclear weapon to show it has acquired world power status. Those who believe that Brazil's neighbor are friendly also support nuclear weapons as a symbol of status. In fact, seeing Brazil's neighbors as friendly may make it safer for Brazil to develop a nuclear weapon as a status symbol and deterrent to attack from outside the region

and still avoid issues associated with the "security dilemma." This pattern of thinking assumes that Argentina would not see a Brazilian nuclear weapon as a threat. A Brazilian nuclear weapons capability, in this case, might not be seen as upsetting the security balance in Latin America. It is apparently assumed, as a part of this belief system, that Argentina and others would recognize it for what it is, not a threat to Latin America but a symbol of technological achievement and autonomy projected at the first world.

E. The Security Dilemma

Nuclear weapons project an image of threat. Beliefs about the amount of threat and its effect on perceptions of security reflect the respondent's thoughts on the "security dilemma." The "security dilemma" arises in trying to establish how much military force is enough and how much is too much. The dilemma is in deciding how much security is necessary for defense without frightening one's neighbors to the point that they either 1) launch a pre-emptive attack against what they perceive as an imminent act of aggression or 2) begin an arms race which increases insecurity and/or bankrupts both sides. (Jervis, 1992, pp. 146-169, "Offense, Defense, and the Security Dilemma") Some of the respondents believe that nuclear weapons go beyond this critical threshold while others do not. Those Brazilians in the study who believe that if Brazil had a nuclear weapon its neighbors

would feel more secure, apparently do not feel that nuclear weapons cross over the critical threshold.

Question 40 also offers some significant correlational results. Question 40 asks: Do Brazilians feel secure or anxious in their relations with nations outside the region, for example, the major powers? Responses to this question correlate significantly with responses to #19: Are people generally trustworthy or untrustworthy? Those who believe that people are generally trustworthy also believe that Brazilians feel secure in their relations with nations outside the region. However, those who believe that people are untrustworthy tend to believe that Brazilians do not feel secure in their relations with nations outside the region.

Another relationship between threat and trust refers again to the "security dilemma." Those who believe that Brazil's leaders should trust neighboring countries (#34) also tend to believe that if Brazil acquired a nuclear weapon it would make its neighbors less secure (#74). Those who believe that Brazil should not trust its neighbors also tend to believe that a Brazilian nuclear weapon would make its neighbors more secure.

It must be kept in mind that this kind of relationship represents a pattern of thinking rather than any causal relationship. It appears as though believing that a nation is friendly or trustworthy may or may not have an impact on how

people think about the "security dilemma." It may depend on whether prestige and the projection of power are more important values than maintaining a security balance.

II. TRUST

Milton Rokeach (1960) emphasizes that trust forms an important core belief and plays a significant role in shaping other beliefs in the system (Rokeach 1960, p. 41; Gibb, 1978) This questionnaire attempts to elicit a set of beliefs about trust in various spheres of thought. As with the other concepts there are questions dealing with trust in the 1) personal sphere, 2) national sphere, Brazil, 3) international sphere, and 4) nuclear policy thinking.

Responses to the questions on trust have a number of significant correlations with other items.³ Some of these have already been mentioned in the previous section on threat. There appears to be a consistent pattern which links beliefs on trust with other phenomena. People who believe that others are generally trustworthy also tend to believe that the world is friendly, harmonious, and that people and nations can feel secure. However, those that believe others are about equally trustworthy as untrustworthy have a tendency to believe that the world is threatening, conflictual, and that people and nations often feel anxious in their relations to others.

³) Kerry Shannon and Norman Kafer's study (1984) "Reciprocity, trust, and vulnerability in neglected and Rejected Children" showed that trust is an important factor in shaping behavior.

Those who see others as extremely untrustworthy also tend to see the world as full of conflict. Interestingly, the reverse is not necessarily true. Those who believe the world is highly conflictual do not necessarily see others as extremely untrustworthy. Extreme lack of trust seems to indicate that the person believes himself to be living in a world of unending conflict. However, people who believe the world is full of conflict do not necessarily believe that means that they cannot trust people. The strength of the relationships vary, but there does appear to be a definite pattern emerging which incorporates these concepts into a system of beliefs.

A. Trust in the Nuclear Powers

The responses to question 69 are extremely significant for this research on nuclear policy thinking.⁴ Question 69 asks: In your opinion should Brazil trust that the nuclear powers would never attack Brazil with nuclear weapons? Only 13% said that Brazil should have complete trust that it would not be attacked by a nuclear weapon. A substantial majority, 59%, said Brazil should generally not trust them. Even 35% marked #9 on this question saying that Brazil should not trust them at all. Table 9D shows the complete results.

⁴) For further reading on trust and nuclear issues see: Daniel Levi and Elaine Holder (1988), "Psychological Factors in the Nuclear Power Controversy."

Table 9D

TRUST THE NUCLEAR POWERS
Question #69 (N=46)

Trust					Not Trust				
1-----	2-----	3-----	4-----	5-----	6-----	7-----	8-----	9-----	
13%	6%	9%	2%	11%	0%	15%	9%	35%	
(mean score = 6)									

There seems to be a general lack of trust in the nuclear powered nations. How this lack of trust is interpreted into policy thinking may vary, but clearly for some it means maintaining the capacity to build nuclear weapons in case it should ever become necessary to use them as a deterrent or to command respect and autonomy. These results reflect the thinking that was expressed in the interviews on the lessons learned from the Falklands/Malvinas War about the US coming to the aid of the British. The United States, in particular, has had a history of interventions in Latin America, e.g., Cuba, Panama, Grenada, Nicaragua, and Chile. Therefore, lack of trust by Latin Americans in the nuclear powers would certainly be understandable.

B. Trust and Cooperation/Competition

There are a number of relationships from the responses in the questionnaire which link trust with cooperation and competition.⁵ Table 9E below illustrates these

⁵) Ken Rotenberg and Teresa Pilipenko's study (1983-84) "Mutuality, Temporal Consistency, and Helpfulness in Children's Trust in Peers" shows a link between trust and cooperation.

relationships.

Table 9E

TRUST AND COOPERATION/COMPETITION

coop/ comp	Trust			
	#4	#19	#34	#35
ques #15	-.4790*			
ques #16	.5055*			
ques #40		.4394*		
ques #45				-.4028@ (N=44)
ques #50			-.4143"	

*coefficients significant at $p < .001$

"coefficients significant at $p < .002$

@coefficients significant at $p < .003$

N=46 except where otherwise indicated

Summary of questions for Table 9E.

277

- #4: Nations should or should not be trusted to abide by agreements.
- #15: National goals are best achieved through cooperation or competition.
- #16: Is it always win/lose or is there mutual gain?
- #19: Are people generally trustworthy or untrustworthy?
- #34: Should Brazil trust its neighbors?
- #35: Should Brazil trust the Great Powers?
- #40: Do Brazilians feel secure in relations with nations outside the region?
- #45: Is military strength or other sources of power more important for Brazil?
- #50: To what extent should Brazil and Argentina be political rivals?

Those who believe that nations should be trusted to abide by agreements (#4) also have a tendency to believe that goals are better achieved through cooperation (#15). Those who believe that nations should not be trusted tend to believe that competition is the better means to achieve goals.

Those who believe that nations should be trusted (#4) also tend to believe in mutual gain through collective bargaining (#16). Those who believe that nations should not be trusted tend to believe that what one side wins the other side loses and that there are no mutual gains. This linkage makes sense. If you feel you can trust others you are more likely to feel that cooperation can work to your benefit. If you feel that others are unlikely to live up to their commitments in an agreement the less likely you are to enter cooperative arrangements. You are more likely to grab what you can get on your own.

On the personal belief level question 19 asks: Are people generally trustworthy or untrustworthy? The answers to this question by the entire group is fairly evenly distributed over

the 9 points on the scale from trustworthy to untrustworthy. The largest group, 40%, answered right in the middle marking number 5 on the scale. As a whole the group believes that people are sometimes trustworthy and sometime untrustworthy. This question correlates significantly with item 40 which asks: Do Brazilians feel secure or anxious in their relations with nations outside the region, for example, the major powers? Those who believe that people are generally trustworthy also tend to believe that Brazilians feel secure in their relations with nations outside the region. Conversely, those who believe people are generally untrustworthy also tend to believe that Brazilians feel anxious in their relations with nations outside the region. If you trust others you can generally feel more secure that they are not going to act against your interests.

This was the only significant relationship between question 19 and other items on the questionnaire. Beliefs about trust in the personal sphere appear to be different from beliefs about trust in other spheres of thought. There were no strong correlations between personal trust and trust in the more political domain. Trusting people on an individual basis appears to be different for this group of elites from national or international trust. Relationships within a family or community where there is a shared identity and common interests would appear to engender greater trust than with outsiders who may not have your best interest as a priority.

C. An Important Link Between Trust and Rivalry for Policy Thinking

Questions 34 and 35, however, which pertain to trust in the Brazilian national sphere, do relate to various other items on the questionnaire. Again those who are more trusting in the national domain also tend to see the world as more friendly and harmonious.

Some other important relationships also emerge. Those who believe that Brazil's leaders should not trust the neighboring countries in the region (#34) also tend to believe that Brazil and Argentina are political rivals (#50). This relationship is a very important link in the study because, while questions on trust had no significant correlations to the policy questions, rivalry with Argentina (item 50) had several very significant relationships to important policy questions on nuclear issues. Those who believe that Brazil and Argentina should be political rivals also tend to support the development of a nuclear submarine and also support continuing research on nuclear fuel without IAEA inspections. They also believe that nuclear weapons are needed to insure peace and that Brazil needs nuclear weapons to maintain its national security. The relationship of trust, or lack of trust, to rivalry is a very important link between this core belief and policy thinking.

Question 35 on trust also demonstrates an interesting linkage. Those who do not trust the Great Powers (#35) also

tend to believe that the military is the most important source of power (#45). All 46 of the respondents answered this question, of which 63% marked 7, 8, or 9 that they strongly did not trust the Great Powers. Of this 63%, two people are in the military. These beliefs do not simply represent a military professional point of view.

In summary, while trust does not show any direct correlations with policy choices in this study, it still plays a role in the thinking process on nuclear issues. A large majority of the respondents believe that the nuclear powers should not be trusted when it comes to attacking Brazil with a nuclear weapon. This is a very unexpected response according to the thinking of most Americans who would not even consider that option as a possibility. The use of British nuclear submarines during the Falklands/Malvinas War as well as suspicions that British ships were carrying nuclear weapons may have played a role in shaping this belief. This is a critical example of why it is important to do cross cultural studies. Researchers need to ask people of other nations what they think and not assume that their belief systems are the same as those held in the United States. If Brazilians do not trust the nuclear nations not to attack them with nuclear weapons, that alone can have a significant impact on policy thinking.

III. Military Expenditures

While trust has no direct significant relationships to

nuclear policy issues, beliefs about the importance of military expenditures do. There are 10 instances of high correlations between beliefs about military expenditures and nuclear policy questions. Those who believe that large portions of Brazil's expenditures should be spent on military security also support research on weapons grade nuclear material, a nuclear powered submarine, and do not support making Latin America a nuclear weapons free zone. Table 9F shows some of these relationships.

Table 9F

<u>MILITARY EXPENDITURES</u>	
Military Expenditures	
nuclear policy	<u>#41</u>
ques #63	-.5942* (N=45)
ques #67	.5110* (N=41)
ques #75	-.6699* (N=43)

*coefficients significant at $p < .001$
(a negative sign before the coefficients means a reverse relationship, i.e., as one factor goes up the other goes down)

Summary of questions for Table 9F.

- #41: What portion of its expenditures should Brazil spend on military security?
 #63: Should Brazil build a nuclear powered submarine?
 #67: Should Brazil put into effect the Treaty of Tlatelolco?
 #75: Nuclear capability would give Brazil greater or lesser control.

Some of these correlations are quite high. For example,

the responses to question 41 on military expenditures correlates very highly with the responses to question 63 which asks about developing a nuclear submarine. Those who believe that Brazil should spend large portions of its expenditures on military security support the development of a nuclear submarine. Those who do not support military expenditures tend not to support the submarine. Similarly, those who support large military expenditures do not support the Treaty of Tlatelolco (question 67) which designates Latin America as a nuclear free zone. Those who support military expenditures also believe that the capability to build a nuclear weapon would give Brazil greater control over its ability to get what it needs. Conversely, those who do not support large military expenditures do not believe a nuclear weapon would give Brazil greater control.

These correlations are logical when one realizes that the military control the nuclear enrichment research projects. Those who support the research projects would also believe that the military should have the budgetary support to carry out the projects.

IV. CONTROL

As has been stated, the operational code questions developed by Alexander George (1969, 1979) were formulated to elicit "assumptions and premises" held by the respondent regarding various issues (See above chapter one), e.g. whether

the fundamental nature of politics is harmonious or conflictual; should you be optimistic or pessimistic about achieving goals; is the future predictable; etc. (1979, p. 100). Questions 4 and 5 of the operational code philosophical questions ask:

Question 4: How much "control or "mastery" can one have over historical development? What is one's role in "moving" and "shaping" history in the desired direction?

Question 5: What is the role of "chance" in human affairs and in historical development? (1969)

In this study these two questions were combined to establish a continuum from control at one end of the spectrum and chance at the other end. Like the other operational code assumptions, it was assumed by George that beliefs about control and chance in a historical perspective played a role in shaping policy preference and thinking (1979, p. 101-103). George assumed that whether or not a leader believes that people can control events does make a difference in shaping policy choice.

A. Control and Other Variables

The results of this study do not make a very strong case for George's hypothesis. There are 5 questions on the

questionnaire which ask about beliefs on control and chance across the four spheres of beliefs. The results show that there are no significant relationships between beliefs about control and other variables. There are only a few weak relationships. Table 9G illustrates these correlations.

Table 9G

CONTROL

control

status/	#25	#43
pride		
ques #22	-.3679" (N=44)	
secure/ anxious		
ques #23	.3677@ (N=45)	
nuclear		
ques #68		.3947& (N=45)

&coefficients significant at $p < .004$

@coefficients significant at $p < .006$

"coefficients significant at $p < .007$

Summary of questions for Table 9G.

#22: Importance for people to have a sense of pridde.

#23: People generally feel secure or anxious.

#25: Do people control their lives or is it up to chance?

#43: Amount of control outside sources have over Brazil.

#68: Are nuclear weapons needed to insure peace?

Question 25 reads: Can people generally have control over how their life is going or is it mostly up to chance? This question correlates somewhat to question 22 which asks: How important is it for people to have a sense of pride? The answers to question 22 are quite evenly distributed over the

9 point scale. Those who believe that people can generally control their lives also tend somewhat to believe that it is relatively unimportant for people to have a sense of pride. Those who believe that people cannot generally have control over their lives tend to believe that pride is relatively important.

Question 25 also relates to item 23 which asks: In a general way do people usually feel secure or anxious? While the responses to question 22 have a fairly even distribution across the whole range of choices, the range of responses to question 23 is more skewed to one side. No one answered 1, 2, or 3 to this question and only one person marked 4. The rest marked 5-9 indicating that the respondents have a range of feelings from equally anxious and secure to extremely anxious. No one in the study seems to feel secure all or even most of the time. The people who feel that they can have control over their lives tend to feel more secure in this range of 4-9. The people who believe that they do not have control tend to feel more anxious to extremely anxious. The relationship is weak but still interesting. It may be weakened by the apparent fact that everyone feels somewhat anxious.

B. Control and Nuclear Issues

There is only one item on control from the personal or political levels which relates to nuclear policy thinking. Question 43 asks: How much control do outside sources have

over Brazil? Question 68 asks: In today's world which is witnessing an end to the Cold War, are nuclear weapons needed to insure peace? Those who believe that outside sources have a lot of control over Brazil also tend to feel that nuclear weapons are not needed to insure peace. Those that do not believe that outside sources have much control tend to believe that nuclear weapons are needed. (see Table 7G)

The relationship may be confusing if one is thinking about one variable causing the other. However, it makes sense if one is simply assessing a pattern of beliefs. Those who advocate nuclear weapons appear to be those people who also stress national pride. Highly nationalistic people would probably not like to say that outsiders control Brazil. They would prefer to believe that Brazil is to some degree independent. Responses to this question also relate to a study by Samuel Fung (1991) in which he found that weak strategies were generally taken in dealing with a more powerful other, while a strong strategy was taken against less powerful others. It may be felt by some that the better strategy in dealing with outside control is not to aggravate the situation.

While there do not seem to be any causal linkages between beliefs about control and chance and policy thinking on nuclear issues, control does play a role in the pattern of thinking on these issues. There are 11 significant relationships between responses to question 75 and responses

to other items. Question 75 asks: Would the capability to build nuclear weapons give Brazil greater or lesser control over its ability to get what it needs? The responses to this question correlate highly to the responses to items on power, status, military expenditures, competition with Argentina and nuclear issues like supporting the nuclear submarine, the development of weapons grade fuel, and whether nuclear weapons offer an advantage in negotiations. The connection between control and nuclear weapons seems to be important to the respondents.

The answers to question 75 are fairly evenly distributed over the 9 point scale. There are those who believe that nuclear weapons would give Brazil a lot greater control and those who believe they would give it a lot lesser control, and there is a whole range of answers between the two extremes. It appears as though the control that the weapons may offer is important to those who believe power is important and who support nuclear capability.

The questions that were asked on control itself, however, seem to have missed the point. Views on the role of control and chance in the natural course of events do not seem to be relevant to policy thinking. It may not be significant whether people believe that one can or cannot control events. What may be significant is that the control of events is more important to some than to others. The importance of control was never asked on the questionnaire. The importance given to

control was not a part of the operational code questions, but it seems to be a critical factor. The perception that the weapons give greater control keeps coming up in the study. So, it appears to be an important value to those who support nuclear issues. It may be that because the question, "How important is control?" was never asked, there are no significant correlations between the questions on control and those on policy preference.⁶

V. POWER RELATIONSHIPS

In previous chapters it was shown that responses to the questions on power related very significantly to many of the responses on nuclear policy thinking and preference. Status and competition also had high correlations with policy thinking. This section will examine the interrelationship between the factors that seem to shape policy thinking, e.g. power, status, and competition to examine to what degree they form a pattern of thinking across this set of concepts.

A. Power and Status:

Research in the field of psychology has demonstrated a strong link between power and status. A few examples are a study by Theodore Kemper (1991) that beliefs about power and status predict emotions like fear, anger, and joy; and Samuel

⁶) a control index was formulated similar to the way it had been done on other variables, but there was no real difference between the Type A* and Type E* groups.

Fung's study (1991) which found that perceptions of "status/power" significantly shaped strategy choices in relationships.

In this study, both power and status separately had a number of strong correlations with nuclear policy thinking. There also appear to be a number of strong relationships between beliefs about power and beliefs about status. A few of the more significant relationships, as illustrated in Table 9H, are examined here.

Table 9H

POWER AND STATUS

status	power			
	#10	#12	#26	#28
ques #5	.4225"	.4885*	.6194*	.6060*
ques #21		.5003*		
ques #38			.3944@	

*coefficients significant at $p < .001$

"coefficients significant at $p < .002$

@coefficients significant at $p < .003$

N=44-46

Summary of questions for Table 9H.

- #5: Importance for nations to demonstrate their strengths.
- #10: How important is power in international politics?
- #12: Is it essential to negotiate from a position of military strength?
- #21: Importance in showing others one's strengths.
- #26: Importance of power in personal relationships.
- #28: Is power necessary to get what people need?
- #38: Importance of national pride for Brazil.

Question 5 asks whether it is important for nations to

demonstrate their strengths to the rest of the world? Demonstrating one's strength is a means of establishing status or expressing pride. Responses to this question relate significantly to four of the questions on power. The more important it is believed that nations should demonstrate their strengths, the more it is believed that power is important in international politics (#10); that political leaders should always negotiate from a position of military strength (#12); that it is important to maintain power in personal relationships (26); and that power is necessary to get what people need. (#28) Even on a personal level there are those who believe that power is important in relationships. Power is not only reserved for the political arena. Those who feel that power in personal relationships is very important have a very strong tendency to also believe that nations should demonstrate their strengths.

The responses to question 12 also relate highly to responses on question 21. Those who believe it is important to negotiate from a position of military strength also tend to believe that it is important for people to show their strengths on a personal level. The repetition of the word strength in the question probably is a factor in this high correlation.

Question 26 which asks about maintaining power in personal relationships also correlates with item 38 which asks about maintaining a sense of national pride for Brazil. Those

who believe that personal power is important also tend to believe that Brazilian leaders should maintain a strong sense of national pride for Brazil. This correlation is somewhat weaker but fits into the overall pattern of the power and status connection. Power and status are interconnected concepts in that having status can have an effect on the ability to shape outcomes. In other words, status can give power. And, conversely, the recognition of power provides status.

B. Power and Competition:

Responses to the questions on power also have several very strong correlations with the responses on competition. Table 9I shows the correlations on the relationship between power and competition/cooperation.

Table 9I

POWER AND COMPETITION/COOPERATION

comp/ coop	Power		
	#26	#27	#28
ques #14	.5801* (N=43)	.5434* (N=43)	
ques #16	-.4851*		-.6090*
ques #51	.4584*		
ques #79	-.5525*		

*coefficients significant at $p < .001$
N=45-46 except where indicated

Summary of questions for Table 9I.

- #14: How much should nations compete?
- #16: Is it always win/lose or is there mutual gain?
- #26: Is power necessary in personal relationships?
- #27: Is leverage necessary?
- #28: Is power necessary to get what people need?
- #51: Importance for Brazil to compete economically with Argentina.
- #79: Importance for Brazil to get the bomb if Argentina had it.

Beliefs about power in personal relationships is the focus of question #26. The responses to this question correlate very significantly with responses to question 14 which asks: On a geopolitical level how much should nations compete with other nations? People who believe that power is important in personal relationships also have a very strong tendency to feel that nations should be very competitive with other nations. Conversely, those who believe that power is unimportant in personal relationships also tend to believe that nations should not be particularly competitive with one another. Beliefs about power and competition appear to have a very strong connection.

Question 27 asks: To get what people want or need is it necessary to hold some kind of leverage? Answers to this question also relate significantly to the responses to question 14. Those who believe that leverage is necessary also tend to believe that nations should be competitive. Responses to questions 26 and 16 also have a strong connection. Those who believe personal power is important also tend to believe that in dealing with an opponent one side wins and the other side loses, in other words, the zero-sum

approach. On the other hand, those who believe that personal power is unimportant tend to believe that mutual gain can be achieved through cooperative bargaining.

Answers to question 28 have a similar but even stronger relationship to the responses to items 16 and 30. Those who believe that power is necessary to get what people need also tend to believe that in bargaining, one side must win and the other lose and that competition rather than cooperation gives people what they need. Those who don't believe power is necessary tend to believe that mutual gain can be achieved through cooperation.

Question 26 relates to two important questions on Brazil's relationship with Argentina. Those who believe that power is important in personal life also tend to believe that Brazil should compete with Argentina economically (#51) and that if Argentina had a nuclear weapon, Brazil would have to have one, too. (#79) The opposite is also important. Those who think that power is unimportant in personal relationships believe that it would not be necessary for Brazil to acquire the bomb if Argentina had it.

Beliefs about power appear to play a very important role in beliefs about competition even when they relate to policy thinking on important nuclear issues. This relationship between beliefs about power and competition correspond to Ole Holsti's analysis of this phenomenon. Holsti (1977, pp. 167-178) found that leaders who advocate the use of power in terms

of force believe that efforts at cooperation are a sign of weakness.

Whereas, those who do not advocate the use of force emphasize negotiation and conciliation in pursuing goals. Findings by Lock Johnson in his study of Senator Church (1977, p. 118) also show that a muscular interventionist foreign policy corresponded with beliefs in the zero-sum approach to solutions.

C. Power and Conflict/Harmony

While beliefs about power seem to have a strong and direct influence on shaping policy thinking, beliefs about conflict and harmony have not shown a significant relationship to policy preference and thinking. The results were examined to ascertain whether there was any relationship between beliefs about power and beliefs about conflict and harmony which emerged from the data that might demonstrate some convergence of the two variables. There are a few correlated items, but they are rather weak. The strongest is between the responses to question #11 and responses to question #2. (see Table 9J below)

Table 9J
POWER AND CONFLICT/HARMONY

conflict/ h a r m o n y	#11	#12	#28
ques #2	-.4307*	-.3968"	-.3859@

*coefficients significant at $p < .002$

"coefficients significant at $p < .005$

@coefficients significant at $p < .006$

N=41-42

- #2: Will there always be conflict or will harmony emerge?
 #11: Is military strength or economic resources more important sources of power?
 #12: Essential to negotiate from a position of military strength.
 #28: Is power necessary to get what people need?

Question 2 asks: Human nature being what it is, will there always be war and conflict or will harmony emerge as the normal state of affairs? As shown in Table 9J, responses to question #2 relate (though not very strongly) to the responses to questions #11, #12, and #28 on power. Those who believe that there will always be more conflict also tend to believe that the military is the strongest source of power, that leaders should normally negotiate from a position of military strength, and that power is necessary to get what people need. Conversely, those who believe that harmony will emerge as the normal state of affairs also tend to believe that economic resources are a more important source of power, tend not to believe that it is essential for political leaders always to negotiate from a position of military strength, and also tend

not to believe that power is necessary to get what people need.

The relationships between power and conflict/harmony are much weaker than those demonstrated by status and competition. The three that are somewhat significant all relate to question 2 which asks whether there will always be conflict or whether harmony will emerge. Holsti points out that policy makers often view the world as conflictual and, therefore, he suggests that beliefs about the human capacity for conflict or harmony might be a better indicator of a person's predisposition than merely a description of the political environment (1977, p. 157). It was for this reason that question 2 was included in the study. His hypothesis appears to have some validity at least in relation to beliefs about power and the importance of military strength. It adds to the picture of policy thinking even though beliefs on conflict and harmony did not correlate directly to policy thinking on nuclear issues.

Power, Threat, and Control

While neither threat or control have a strong relationship with policy thinking or preference on nuclear issues, each has one noteworthy correlation with power. Table 9K gives the correlation coefficients for these two relationships.

Table 9K
POWER, THREAT, AND CONTROL

	power	
	#28	#71
threat		
ques #39		-.5525* (N=46)
control		
ques #75	.4020@ (N=42)	

*coefficient significant at $p < .001$

@coefficient significant at $p < .004$

Summary of questions for Table 9K.

#28: Is power necessary to get what people need?

#39: Are Brazil's neighbors friendly or threatening?

#71: Importance for Brazil to acquire a nuclear weapon to show it has attained world power status.

#75: Would a nuclear capability give Brazil greater or lesser control?

As was discussed previously on other questions, those who see Brazil's neighbors as friendly also support the acquisition of a nuclear weapon to demonstrate world power status. One would expect that if Brazil's neighbors are perceived as friendly, Brazil would not need a nuclear weapon. However, that assumes that the principal reason for developing a nuclear capability is to deter attack from aggressive neighbors as is the case with Israel, India, Pakistan, etc. But, for Brazil, a nuclear capability seems to have a purpose other than deterrence against its neighbors.

In the section on control it was explained that there seemed to be a problem in the way in which the questions on control were asked on the questionnaire. The importance of control to the respondent was never asked. However, control does seem to play a role in the value of nuclear weapons.

Question 28 asks if power is necessary for people to get what they need. This relates to question 75 which asks if nuclear weapons would offer Brazil greater or lesser control. Those who think that power is necessary also tend to believe that nuclear weapons would give Brazil more control. This is a significant link because question 75 relates strongly to almost every question on nuclear policy. Control does seem to play a role, but it is not clear exactly how it fits into the process of thinking. One might speculate that because power gives control over outcomes, the value for control ought to be linked to the value placed on power.

CONCLUSION:

In summary, there do appear to be consistent belief systems on world view. There is a range of views and there are different mixtures of the beliefs. However, a definite pattern has emerged from this study. Beliefs about conflict and harmony, threat, and trust form convergent systems. Those who view the world as harmonious also tend to believe that other people and nations are friendly and that they can be trusted. Those who view the world as more conflictual tend to believe that people and nations are threatening and that they can be trusted only about half the time. While people appear to have a world view, that view does not seem to directly influence policy thinking and preference. There are, however, some indirect linkages. Beliefs about the human capacity for

conflict or harmony relate to beliefs on the importance of military strength. Both threat and trust have indirect links through relationships with beliefs about competition and rivalry with Argentina and with the importance of military expenditures.

The significant results of the research continue to emphasize the importance of beliefs on power, status, and competition in shaping policy thinking. Not only do all three of these variables correlate strongly with thinking on nuclear policy but, they all interrelate significantly. These prescriptions for behavior appear to play a far greater role in shaping policy thinking and preference than worldview. Beliefs about the description of the world exist but, prescriptions for behavior and motivations appear to significantly affect the weighting of values in such a manner that they overshadow the influence of worldview on the policy maker.

The importance for Brazil is that elites form different and even opposing belief systems around these behavior prescriptions. Holsti's typology study (1977) shows that policy choices cluster around prescriptions for strategy which include the use of power and the extent to which leaders should negotiate. Holsti's types are useful in understanding models of beliefs about prescriptions for behavior.

There are different and opposing models. Whichever group gains control of the decision making process will bring a

different set of beliefs to policy thinking. The same is true for Brazil. Some elites, particularly amongst the military in this study, place a strong value on the importance of power, status, and competition. The examination of the two extreme groups in this study shows a significant difference between the belief systems of the Type A* and Type E* groups. The two groups have distinctly different beliefs about the value placed on the prescriptions for behavior discussed in this study and policy preferences on nuclear issues. While there are a range of beliefs between the two extremes in this sample, the composition and belief systems of the group of policy makers who are in control of the decision making process would appear to have an important impact on final policy decisions.

Chapter Ten

MORAL CONSIDERATIONS

I. THE MORAL DILEMMA

Whether moral considerations have a role in politics or not is a matter of continued controversy. On the one hand, there are those who believe that morality has no place in politics, and on the other, there are those who believe that moral considerations are profoundly important. Advocates of political realism claim that morality cannot play a part in the dynamic system of international politics. Kenneth Waltz (1979 p. 18-20) argues that the psychological study of leaders and their values and motivations fails to take into consideration the impact of the dynamics of the system as a whole. The moral values of leaders along with any individual differences are meaningless in the face of the overwhelming constraints of the struggle for power. Hans Morgenthau explains:

Where responsibility for government is widely distributed among a great number of individuals with different conceptions as to what is morally required in international affairs, or with no such conception at all, international morality as an effective system of restraints upon international policy becomes impossible. (Morgenthau 1985, p. 266)

Others challenge that theory. They point to the massive movement for democracy in Eastern Europe during 1989 and 1990 as bearing witness to the power of the moral demand for

participation and freedom to choose. Growth in the demands for human rights and protection of the environment has pressured the international system into change. The introduction of nuclear weapons into the international arena challenges traditional beliefs about morality and the "just war." There are those who welcome nuclear weapons as the great peacemakers and deterrents to war, the ultimate weapon in the balance of power. David Hollenbach in his book Nuclear Ethics (1983) opposes that notion. He offers this explanation:

There may be issues on which moral and political judgement lead to different conclusions. But the question of whether one should use nuclear weapons in pursuit of a just cause is not one of them. The escalatory dangers which attend any use of nuclear weapons make their employment irrational from a political point of view, as well as unacceptable from the perspective of basic moral values and prima facie duties. (Hollenbach 1983, p. 60)

Some people have expressed that nuclear weapons have deterred a third world war, and therefore, are morally commendable. To others, the qualitative difference in the massive power of nuclear weapons both to destroy physically and to contaminate through radiation renders them immoral. Moral considerations are a normative question, what is right and what is wrong, not what is practical or pragmatic. The question of nuclear weapons, in this regard, is a controversial issue. Is the contamination by radiation a moral or a practical criticism of the use of nuclear weapons? It may be argued that the immensity of physical destruction

and genetic damage for future generations for an unknown duration of time make the case against nuclear weapons beyond simply a practical explanation. If it were simply a practical question, then one could measure out, in a utilitarian sense, the pros and cons and come up with a reasoned answer. Those who argue that nuclear weapons are a moral issue claim that a discussion on the pros and cons is irrelevant. Nuclear weapons are just wrong and not subject to review as practical support ebbs and flows.

The discussion becomes more complex because the appeal to morality becomes a highly charged emotional issue. Those who support nuclear weapons as peacemakers or as a deterrent to aggression do not have the same emotional appeal. Because they would most likely lose an emotional appeal in support of nuclear weapons as morally correct, they may prefer to change the context of the argument to one of practicality and not morality. It may be that the anti-nuclear supporters have appropriated the high moral ground much in the way that the pro-Vietnam war supporters appropriated the concept of "patriotism" and then branded the anti-war activists as "unpatriotic."

It might help to define morality more carefully. Then the arguments might be sorted out according to the criteria of the definition. A useful definition might be: moral norms are those which involve a sense of duty and responsibility to humankind concerning things which are in our power and for

which we can be held responsible. (Wallace and Walker, 1970) Moral norms are rules of conduct which concern human welfare, welfare in the sense of what is "good". All good might be considered practical, in the long range sense, in that it supports survival. But, then there would be nothing that was moral. Human beings traditionally have accepted that there is a morality beyond what is practical. The violation of that morality outrages humankind's spiritual sense. We accept the existence of a moral sense because of the human reaction to its violation. Therefore, the response to certain acts will pass a threshold at some critical point from practical into moral. The concern and care for the future of all life on this planet as we know it, may be the critical threshold in the case of nuclear weapons. The practical examination of whether nuclear weapons fulfill their purpose of deterring aggression becomes a mute point for those who believe they are simply wrong because of the massive and prolonged quality of their destructive capability.

Immanuel Kant ("Metaphysical Foundations of Morals" in Friedrich, 1949) explains that the ultimate good is a duty. He acknowledges that practical self-interest may often play a role in what seems to be moral behavior.

In fact we can never, even by the strictest self-examination, penetrate completely, [to the causes] behind the secret springs of action, since when we ask about moral worth, we are not concerned with actions but with their inward principles which we do not see. (Kant, "Metaphysical Foundations of Morals" in Friedrich, 1949 p. 155)

But, because we cannot be sure there is not some selfish gain behind any behavior that seems moral does not mean that a universal sense of morality does not exist. Kant argues that mankind is able to sense the universal authority of moral law and has a duty to act on it. Whether a decision is moral or practical, as Kant suggests, is often undiscernible and has been a subject of argument for centuries. A full examination of this issue is beyond the scope of this study. However, for purposes here moral considerations are those which involve human welfare, nonviolence, truth, and the preservation of mankind for future generations.

In this context, then, the question is whether moral considerations are appropriate to political decisions. Waltz and Morgenthau would say no, Kant would say yes, that "ultimate good" is a duty (Kant, in Friedrich, 1949, pp. 150-160). In this case then, one would have the responsibility to enter the political realm in order to rectify the situation. The interviewees were asked to explain their beliefs on this issue. Is the development and use of nuclear weapons a moral issue? If so, do they present more of a moral issue than conventional weapons? How much should political leaders be guided by moral considerations? Answers to these questions play an important role in policy thinking.

II. MORAL CONSIDERATIONS AS THEY WERE DISCUSSED IN THE INTERVIEWS

The interviewees in the study were asked if Brazil should develop nuclear weapons. They were then asked to give reasons to support their view. They were also asked if having nuclear weapons is a moral issue or not. Of the sample of 58, 24 answered that nuclear weapons are a moral issue; 18 answered that they are a practical (not moral issue); 11 answered that they are both a moral and a practical issue; and 5 people did not answer the question.

It might be argued that it is not possible to accept the respondents' self perceptions as the truth. Perhaps, as Kant suggests, the truth of moral behavior is undeterminable. But, it is just these self perceptions that play an important role in the thinking of the individual. Philip Converse (1964) argues that elites have more developed belief systems which are wider in scope, more consistent, and able to handle abstraction. Following Converse's theory, it would be assumed that members of the elite would be capable of saying what their beliefs are and also would be capable of understanding what a sense of moral norms constitutes. Robert Lane (1962) in his study of the belief systems of the common American found that ordinary Americans also had a developed sense of beliefs and were capable of communicating that sense through the interview process. Kant also claims that the common man is keenly aware of moral standards.

Although common men no doubt do not conceive this principle in such an abstract and universal form, yet they really always have it before their eyes and use it as the standard for their decision.

(Kant, "Metaphysical Foundations of Morals" in Friedrich, 1949 p. 151 - 152)

Whether one accepts Lane or Kant's point of view or Converse's theory of elite superiority, the credibility of the responses from the members of the elite included in this sample ought be taken seriously. What they say is not accidental, but fits into a pattern of thought processes which impact on policy thinking.

The responses to the questions on moral norms were examined and coded. While none of the respondents openly advocate the building of a nuclear bomb, some support continuing the research on nuclear enrichment, which many refer to as "mastering the nuclear cycle." Twenty-eight percent advocate some level of nuclear enrichment development, even to the point of having the capacity to build a bomb should it become necessary. The remaining 72% do not support nuclear fuel enrichment research and some do not even support nuclear power plants in Brazil. Forty-five percent believe that having a nuclear weapon is a moral issue; 34% believe it is a practical and not a moral issue; and 21% believe that it is both practical and moral.

The reasons they give in support of their views tend to fall into categories:

A. Reasons given why nuclear weapons are not practical for Brazil

< economic reasons, too expensive, can't afford it

- < nuclear technology is poor in Brazil, program would be too small to be effective
- < would destabilize Latin America, threatens other countries
- < obsolete, can't be used so doesn't provide defense, not functional as a defense, historic error and waste of time and money, does not enhance security
- < the respondent's political party has a strong anti-nuclear position
- < the Brazilian Constitution prohibits it, would violate Treaty of Tlatelolco, Latin America should stay a nuclear free zone
- < Brazil has other priorities
- < nuclear weapons would isolate Brazil from the rest of the world, Brazil should stay open to international commerce
- < Brazil has no enemies, mistrust of Argentina is over, Cold War is over
- < the symbol gains nothing, nuclear weapons have lost their meaning

This group tends to believe that nuclear weapons are not good for Brazil for strictly practical reasons. In their discussions they do not mention any moral reasons not to have nuclear weapons nor to continue the research. If the

practical situations that they mention were to change, it is not known if their view would also change. A Brazilian businessman explains:

There is a strong movement in Brazil against building nuclear weapons. We can't afford it. We are in grave economic trouble. The people will not support it. (interview # 3)

Many of the interviewees complain about Brazil's economic problems and state, as this businessman has, that they can't afford nuclear weapons. Another businessman from Sao Paulo complains about Brazil's poor record in developing nuclear technology:

I am completely against nuclear weapons. The optimum is to use nuclear technology for peaceful ends and this should be very controlled. These plants need to have a greater safety factor so that something like Chernobyl or Three Mile Island doesn't happen. This could happen at our nuclear plant at Angra Dos Reis that was built in an inadequate place. The indians already knew this and called it "pedra podre" [rotten rock]. A technician also said so. These contracts were terrible for Brazil because the plant was built with defects in the plan. It doesn't function. They call it "a usina vagalume" [the firefly plant] because it is always going on and off like a firefly. (interview #61)

A Brazilian social scientist has this to say about practical considerations versus moral ones:

In regards to whether nuclear weapons are a moral question, morality does not enter the political process. They are practical questions not moral. Morality does not enter negotiations. With hindsight a practical decision might appear immoral but, politics is amoral. (interview #22)

A government official emphasizes the Constitution:

All technology can be developed for good or for

bad. What seems clear is that there were groups who were determined to have a project to construct a nuclear artifact, an atomic bomb. They were in a very primary phase but, our Constitution, which I participated in writing, prohibits absolutely the use of nuclear technology that is not exclusively for peaceful ends. (interview #33)

B. Practical reasons given in support of continuing nuclear enrichment research

- < need to understand nuclear technology, should control or dominate the nuclear cycle
- < sovereignty, national prestige, support nationalism
- < need to join the developed world, it is a part of modernity
- < technology is important, nuclear technology is the highest technology, historically the highest technology wins
- < needed for defense, navy feels it needs it and that is the navy's domain
- < Brazil has the right to develop nuclear technology

Many of the military who were interviewed believe that while Brazil should not have a bomb it should continue the nuclear enrichment research even if it means developing the capacity to enrich nuclear material to a weapons grade level.

An air force general explains:

Of course, Brazil should not have a nuclear weapon. But, without a shadow of a doubt it is a part of

development to master nuclear technology. . . . We only want to safeguard our sovereignty, the sovereignty of our people, to determine our own decisions. . . . I think the navy should have a nuclear submarine. . . . this would put our armed forces at a level even with other armed forces. (interview #46)

A Brazilian naval admiral defends nuclear technology:

High tech weapons like the ones that were used [in the Gulf War] always function very well. In the war with Egypt, for example, the Israelis had better technology and they won. This is a matter of history. Those who have the better technology win. (interview #44)

The editor of a newspaper explains:

Brazil ought to renounce in a clear and absolute manner any military intention, to open our laboratories to the international community so that they would know that we are not doing this. I also think that Brazil ought to have a technology very close to nuclear weapons technology. I think it would be a good idea that if some crazy person in Latin America were to make a nuclear weapon that Brazil could make its own rapidly. I am absolutely against proliferation, but I think that, with having the assurance of a nuclear capability, we would not have to be at someone's mercy. We should continue not with a secret project but with an open project, and with the collaboration of Argentina, working together.

A social scientist who was interviewed for this research studies the military. He claims that the military and others like the editor just mentioned actually support a nuclear weapons capability:

. . . it is something that is in the heads of the military. It is the way they think. And it is a matter of nationalism, patriotism. There are plenty of people outside the military who feel that way, too. But, also, that would mean that other Latin American countries would want the bomb, first Argentina, then Chile. So, now Brazil is maintaining an ambiguous policy. They are

continuing the research under the guise of various purposes while saying that they do not have nuclear weapons intentions. (interview #8)

C. Moral reasons given against nuclear weapons

There were no moral reasons given in support of nuclear weapons or nuclear technology in this study. The moral argument that nuclear weapons have been the "great peacemaker" by averting a third world war was not mentioned here. Those who believe that moral considerations are important tend not to support nuclear weapons development or the technology that might lead to a weapons capability. Moral considerations here involve a concern for human welfare, nonviolence, massive destruction, disarmament, truth, and the preservation of humankind. The criteria by which the responses were judged as practical or moral are based on this definition. It is what is considered by the interviewees as a matter of what is right or wrong. These are the moral considerations that the participants listed:

- < the danger of radiation contamination, damage to the environment, radiation sickness
- < other priorities like hunger, poverty, misery, better schools and hospitals
- < these weapons are profoundly different, alter genetics, damage genetic code

- < danger of accident like Chernobyl and Goiania.¹
- < puts all life at risk, compromises future generations, can eliminate all mankind
- < Brazil should support total disarmament, hope for a nuclear free zone in Latin America
- < equality, no one should have it
- < there is no defense against nuclear weapons
- < the secrecy around the parallel program was wrong, the military and the government have been duping the people.

Some of the respondents express moral outrage at the military's secret parallel program which used vast amounts of public funds to develop a nuclear capability without public knowledge. The moral issue in this case is "lying." For Kant, "the lie" is morally unacceptable. (Kant, "Metaphysical Foundations of Morals" in Friedrich, 1949)

A nuclear physicist and businessman has this to say about the nuclear question:

I think that no country should have a nuclear weapon. I do not think nuclear weapons are a solution. It is a moral question. I think that it is a weapon which is of a significantly different

¹) In Sept., 1987, there was an accident in the town of Goiania, Brazil, where a number of Brazilians were contaminated and died of radiation sickness. A capsule of radioactive material used in cancer treatment had been discarded in such a way that many unknowing people came in contact with it. This incident outraged Brazilians who had been told that nuclear technology was safe. (Malheiros, 1993, pp. 94-99)

quality than others. It is a weapon that can change the weather, that can alter genetics. It is a very grave weapon. . . . Nuclear weapons are qualitatively different. It is a matter of moral ethics. (interview #25)

He points out the qualitative difference of nuclear weapons, that they can profoundly alter the human condition. For him, nuclear weapons are wrong. For him, as he states, it is a moral issue. A woman who has been an active member of the women's rights movement has this to say about nuclear contamination:

Brazil should not have nuclear weapons. . . . Products were imported here from the farm areas around Chernobyl that nobody else would accept. They were sold cheaply and at first people didn't know where they came from. Then people found out and were angry. It was powdered milk among other things. More people became aware of contamination from nuclear radiation from this incident. (interview #49)

She is concerned about the radiation contamination effect of nuclear material whether it is from weapons or from accidents. This kind of contamination brings suffering and effects the preservation of mankind. A Brazilian Catholic priest talks about the social aspects of the nuclear issue:

Nuclear policy is a moral question. We do not need an atomic bomb. We need food on the table. If not, our society will be a bomb. We are moving toward a social explosion in all the third world. (interview #63)

His concern is for the welfare of the people who are going hungry in Brazil. A nuclear physicist who teaches at a university had the most frightening things to say about nuclear technology:

I will tell you why I am not in favor of development as far as nuclear energy is concerned. First, it is especially dangerous. It is not that it is very dangerous. It is especially dangerous. It is dangerous in a way that is not just more dangerous than other things. It is dangerous in a way that can reach the very microscopic level of life, the genetic code. Radiation changes life in a way that is different than chemical or physical means. And I think we should be cautious about that.

Second, I am not convinced that the international reserves of uranium will be enough for worldwide intensive programs for nuclear energy in the long term. Maybe it would be enough for 3, 4, or 5 decades. South African reserves will do for a long time. But, if we start consuming nuclear energy as we consumed petroleum it will present a problem. If the uranium supplies start going down as nuclear energy grows internationally the only way out to keep up with this industry are the breeders, plutonium. Then you have an energy solution but the risks go up. They go way up. The breeder is a very dangerous piece of equipment especially because it may act like a bomb in a sense. (interview #40)

This scientist expresses his concern for the safety and welfare of humankind in the future if the nuclear trend continues. This group adamantly opposes the development of nuclear weapons and the research on nuclear enrichment for the moral reasons given. As stated at the beginning of this chapter, eleven of the respondents gave both moral and practical rationales for not supporting nuclear weapons (no one who mentioned moral reasons came out in support of nuclear weapons). Those reasons have been included in the previous lists. An example of the practical/moral view is given by a leader of the labor party in Brazil, the Partido dos Trabalhadores, PT:

I see no, not any, interest in nuclear weapons. It is a moral question, obviously, but, it is also a political question of environmental policy and also it is an economic question. (interview #26)

No one who offered a moral rationale supported nuclear weapons. Of those who gave practical reasons some supported nuclear capability and some did not. Beliefs about whether the nuclear question is a moral issue or not had a profound effect on shaping nuclear policy thinking and preference according to the data collected through the interviews in this research. If the respondent believes that nuclear weapons are to any extent a moral issue, then they do not support the development of nuclear weapons. If they think it is a practical issue, then they may or may not support their development. Finally, however, those who do support the development of nuclear weapons believe that it is not a moral issue.

III. MORAL CONSIDERATIONS FROM THE QUESTIONNAIRE

A. Responses to the Moral Questions

There are a total of four questions in the questionnaire which ask about the importance of moral considerations. There is one question on each of the four levels: individual, country, international, and nuclear. Like the results from the interview data most of the questionnaire respondents believe that moral considerations play an important role on all four levels. Question 13 (N=46) asks:

In pursuing national goals to what extent should leaders

be guided by moral considerations?

Completely guided

Not at all guided

1-----	2-----	3-----	4-----	5-----	6-----	7-----	8-----	9-----
41%	15%	7%	7%	17%	2%	5%	2%	4%
(Mean score = 3)								

The range of answers cover the whole 9 point scale. However, 57% marked 1 or 2 on the scale expressing that leaders should be either completely guided by moral considerations or almost completely guided. Answers to the other questions on moral guidance convey a similar pattern. The responses to question 78 which asks whether nuclear weapons are a moral issue or not, had a slightly different configuration. While the same high percentage believe that it is a moral question the responses tend to be very polarized on this question. Sixty-one percent marked 1 or 2 but, 20% marked 8 or 9 expressing that it is clearly not a moral issue. While the interview data does not use the same 9 point range it reflects a similar range of answers. In the interviews 45% say it is a moral issue, 11% say it is both moral and practical, and 34% say it is a practical issue. These results show a similar polarity.

The inter-item correlations on moral considerations are extraordinarily strong. Every question correlated very significantly with every other question on moral considerations. The average correlation coefficient on all the morality items is .6100. The highest correlation is between the personal and the national level and is .8064

(coefficient significant at $p < .001$). This will be discussed further in the following chapter.

B. Correlations with Nuclear Policy

There are several items on the questionnaire dealing with moral considerations which correlate significantly with nuclear policy thinking and preference. Table 10A below shows the correlations on responses to the moral questions.

Table 10A

nuclear policy	<u>Moral Considerations</u>		
	<u>#13</u>	<u>#49</u>	<u>#78</u>
ques #60	-.4053@	-.4230"	-.4258"
ques #63			-.4071@
ques #65			.3944^ (N=42)
ques #66			.4121& (N=40)
ques #67		.4181@ (N=41)	.6118* (N=39)

*coefficient significant at $p < .001$

"coefficient significant at $p < .002$

@coefficient significant at $p < .003$

&coefficient significant at $p < .004$

^coefficient significant at $p < .005$

N=43-45 except where indicated

Summary of questions for Table 10A.

#13: To what extent should leaders be guided by moral considerations?

#49: To what extent should Brazil's leaders be guided by moral considerations?

#60: Can Brazil afford a nuclear weapon?

#63: Should Brazil build a nuclear submarine?

#65: Should Brazil sign the NPT?

- #66: Should all Brazil's nuclear facilities be under IAEA inspections?
#67: Should Brazil put the Treaty of Tlatelolco into effect?
#78: Is having nuclear weapons a moral issue or not a moral issue?

Those who believe that leaders should be guided by moral considerations (#13) do not believe that Brazil can afford to build nuclear weapons (#60). On the other hand, those who believe that leaders should not be guided by moral considerations tend to believe that Brazil can afford to build them. Economic issues with regard to nuclear development also came up in the interviews with similar results.

In addition, those who believe that Brazil's leaders should be guided by moral considerations (#49) tend to believe that Brazil cannot afford to build nuclear weapons and that Brazil should put into effect the Treaty of Tlatelolco which designates Latin America as a nuclear weapons free zone. Those who do not believe that Brazil's leaders should be guided by moral considerations tend not to support the Treaty and think that Brazil can afford nuclear weapons. Support for this Treaty was also mentioned in the interviews by those who feel that the nuclear question is a moral issue.

Question 78 asks: Is having nuclear weapons a moral issue or not a moral issue? This question relates significantly to four questions on nuclear policy. Just like the results of the interviews, those who believe that nuclear weapons are a moral issue tend very strongly to support the Treaty of Tlatelolco, tend to not believe that Brazil can afford nuclear

weapons, tend to support IAEA inspections, and tend not to support the nuclear submarine. Those do not think it is a moral issue tend to have the opposite belief system on these nuclear related issues.

C. Correlations Between Moral Considerations and Other Concepts

There were a number of other correlations with the questions on moral considerations that are worth examining. Table 10B shows the correlations.

Table 10B
Moral Considerations

comp/ coop ques #16	#78	#49
	.4531*	
ques #30	-.5002*	
trust ques #34		.3601@

*coefficients significant at $p < .001$
@coefficients significant at $p < .007$ N=44-46

Summary of questions for Table 10B.

- #16: Is it always win/lose or is there mutual gain?
- #30: Is life a matter of competition or cooperation?
- #34: Should Brazil's leaders trust neighboring countries?
- #49: To what extent should Brazil's leaders be guided by moral considerations?
- #78: Is having nuclear weapons a moral issue or not a moral issue?

Two of these relate beliefs about moral considerations to competition. Those who believe there is mutual gain through cooperation (#16) also tend to believe that having a nuclear weapon is a moral issue (#78). Those who believe that in dealing with an opponent what one side wins the other side

must lose tend to believe that nuclear weapons are not a moral issue. There is an even higher correlation between questions 78 and 30. Those who believe in cooperation (#30) also tend to believe that the nuclear question is a moral issue (#78). Those that believe life is a competition also tend to believe that nuclear weapons are not a moral issue. The pattern here is that cooperation and moral considerations are both important values to some of the respondents while competition and practical considerations are more important to others.

There are a few other relationships that are weaker but are also interesting and fit the emerging pattern. Question 78 also relates to question 65 which asks if Brazil should sign the Non-Proliferation Treaty. Those who believe that nuclear weapons are a moral issue tend to also support the signing of the NPT. Those who do not believe it is a moral issue tend not to advocate signing the Treaty. There was a similar pattern regarding the Treaty of Tlatelolco. As discussed earlier beliefs about competition and cooperation related significantly to many questions on nuclear policy. Beliefs about moral considerations appear to have an indirect link to policy thinking through beliefs about competition/cooperation as well as their own direct links.

One other somewhat weak but interesting relationship is between questions 49 on the importance of moral considerations for Brazil's leaders and question 34 on trust. Those who believe that Brazil's leaders should trust its neighbors have

a tendency to also believe that Brazil's leaders should be guided by moral considerations. Those who think they should not trust Brazil's neighbors also have a tendency to believe that Brazil's leaders should not be guided by moral considerations. In the previous chapter's discussion on trust it was noted that the Type E* and Type A* groups had a significantly different average score on question 34. The link between beliefs on moral issues and trust offers another indirect connection between moral considerations and policy thinking.

IV. THE MORAL INDEX

A moral index was formed by combining all the items on moral considerations in the questionnaire. An aggregate score was then calculated for the Type A* group and for the Type E* group whose policy thinking differ significantly on nuclear issues.

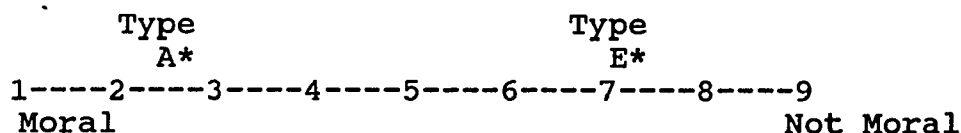
The average item scores on the moral questions differ significantly for the two groups.² The Type E* group has an average item score of 4.88 while the Type A* group has an average item score of 2.83, a difference of 2.07 points. The Type E* score is right in the middle of the range from 1 to 9. They believe that leaders should be guided or not guided by

²) It must be remembered that the sample is small and the two extreme groups are smaller yet. So, further testing would be necessary to establish broader significance to these findings. However, the results are very interesting and suggest an area of investigation.

moral considerations to an equal extent. The Type A* believe that while leaders should probably not be guided by moral considerations completely, they should be guided most of the time.

The biggest difference between the two groups is the average score in response to question 78 which asks whether nuclear weapons are a moral issue. The Type E* group has an average score of 7 on this question, while the Type A* group has an average score of 2.3. The Type E* (pro-nuclear) believe that nuclear weapons are basically not a moral issue. The Type A* (anti-nuclear) believe that nuclear weapons are essentially a moral issue. Here is an illustration of the scale with the two groups:

Is having nuclear weapons a moral issue or not a moral issue?



There is a 4.7 difference between the scores of the two groups. This is an overwhelming difference. The two groups are very polarized on this issue. Of all the indexes that were created to show differences between the two groups, this index on moral beliefs demonstrates the largest differences in the belief systems of the two opposing policy positions. Along with the indexes on power, status, and competition, moral considerations rank very high on the scale of beliefs

which tend to shape policy thinking and preference.

The interviews show that people in the sample have various beliefs regarding moral considerations. Those who believe nuclear weapons are a moral issue listed various reasons for why the weapons are wrong, including issues of human welfare and danger to the preservation of mankind. Those who believe nuclear weapons are not a moral issue had various practical reasons for why they should or should not be supported. In general, those who feel that leaders should be guided by moral considerations most of the time, also believe that nuclear weapons are a moral issue, and they don't advocate the nuclear option.

Chapter Eleven

CONSISTENCY WITHIN BELIEF SUB-SYSTEMS

I. BELIEF SYSTEMS

A. The Purpose of Belief Systems

Belief systems refer to an integrated set of beliefs that individuals hold about their physical and social environment. These systems offer to the individual a "mapping" which clarifies and prioritizes situational variables. Belief system structures organize events into general categories and causal sequences. To respond to every chaotic event uniquely would shortly exhaust one's resources. For political leaders, sets of beliefs about history, political events, as well as social values are especially important. However, belief systems do not act alone. They interact with cognitive processes in the decisional format.

Cognitive processes are activities associated with choice behavior, information processing, coping strategies, etc. It is important to remember that beliefs are not the sole factor in deciding policy. Other variables may occupy space in between beliefs, policy thinking, and actual policymaking. Situation along with cognitive factors also play a prominent role. However, beliefs are particularly important because they not only express the attitudes and values which form the content of the decision, they also shape how to perceive

The purpose of this research is to examine the relationship of beliefs and belief systems to policy thinking and in so doing, come a step closer to understanding the role of beliefs in the process of actually making policy. This chapter examines systems of beliefs along selected concepts as they cross different spheres of thought. For example, beliefs about the importance of power are examined within the personal sphere, the national Brazilian sphere, the international sphere and the nuclear policy sphere. Then beliefs about power for this sample are examined across all these spheres to see if the beliefs are consistent. This is done for beliefs that relate to worldview and for those that relate to prescriptions for behavior. The purpose was to see if there was a difference in the consistency between these two larger systems and if that consistency or lack of consistency relates to policy preference. This study contributes to the body of research on consistency by developing a structured and complex method of measuring patterns of beliefs through the questionnaire and its cross reference system of concepts and spheres, e.g. power, trust, control, etc., as concepts; and personal, national, international, and policy preference as spheres.

B. The Structure of Belief Systems

Gerald Hopple describes a belief system as an organized

entity consisting of a potentially infinite number of discrete elements. (Hopple 1980, p. 213) The system contains a set of statements about reality, predictions about the future, and preferred events and outcomes with basic goals. Hopple emphasizes the affective quality to those beliefs which are concerned with values, norms, and priorities. Milton Rokeach has developed a detailed structural analysis of belief systems in his book The Open and Closed Mind, (1960). His focus on the structural organization of belief systems is helpful in understanding how beliefs function and interact. He organizes beliefs into 3 general areas: 1) central beliefs about love, trust, control, etc.; 2) intermediate beliefs about world view, philosophy, religion, etc.; and 3) peripheral beliefs about specific behavior and attitudes. He further breaks this structure down into sub-systems which form their own internal systems like religion, politics, social life, etc. He also divides beliefs into two overall categories: beliefs (those that we accept as true) and disbeliefs (those that we reject as false). Some beliefs/disbeliefs are either/or alternatives, like believing that the world is either flat or not flat. But others are interdependent concepts which form polar ends of a continuum with gradations in between. Like Hopple, Rokeach notes the importance of values in belief systems. Rokeach (1979) explains that each individual has a small number of values which are personal or social in nature and are categorized as moral and competence values. "A value

system is an enduring organization of beliefs concerning preferable modes of conduct or endstates of existence along a continuum of relative importance." Rokeach 1979, p. 5)

The concept of an "enduring organization of beliefs" about moral and competence values is very important to this study. Many of the questions relate to value systems, e.g. the importance of power and status and whether leaders should be guided by moral considerations. The creation of a "continuum of relative importance" between these values as a form of responding to the questions, emerged out of Rokeach's analysis. At one end of the continuum is a belief and at the other end is its opposing disbelief. Rokeach's structural regions were translated for this study into the four spheres of thought: 1) individual beliefs); 2) national beliefs; 3) international beliefs; and 4) nuclear policy thinking.

C. Cognitive Consistency

Whether or not people tend to maintain a consistency throughout their belief systems is a matter of controversy in the belief system literature. Festinger (1957) claims that people tend to strive for consistency among their beliefs and belief systems and may distort reality in order to hold onto beliefs that are highly valued. Others like Stephen Kull (1988) emphasize the inconsistencies between beliefs that can lead to incompatible policy decisions. In his study of nuclear weapons policymakers, Kull discovered that on one

level the interviewee would acknowledge that nuclear weapons were weapons of mass destruction but then, as if disregarding that premise, would develop policy that treated them like conventional weapons. Rokeach (1960) explains that isolation exists among beliefs and between belief sub-systems which can cause beliefs in different sub-systems to be inconsistent with each other. He points out that belief systems need not be logical.

Philip Converse claims that the thinking process of members of the elite is more highly developed than that of the masses. (Converse, 1964, p. 207) He explains that when a person thinks about related elements at the same time, there is a tendency to adjust any inconsistencies. Because elites tend to think about political beliefs more than the common person, they adjust systems of beliefs more regularly into consistent patterns. He describes belief systems as being bound together by a few central concepts which occupy a position of prime centrality in the belief system as a whole. (p. 210) The responses to the questionnaire offer interesting evidence of consistencies and inconsistencies in belief systems.

II. ANALYSIS OF COGNITIVE CONSISTENCY FROM RESPONSES TO THE QUESTIONNAIRE

According to Rokeach (1960), beliefs have two goals: 1) to organize events and 2) to protect the self.

It is therefore assumed that all belief-disbelief systems serve two powerful and conflicting sets of motives at the same time: the need for a cognitive framework to know and to understand and the need to ward off threatening aspects of reality. (Rokeach, 1960, p. 67)

For this study these two goals of belief systems are represented by 1) a description of the world which comprises a worldview, the "cognitive framework" and 2) prescriptions for behavior, the value placed on specific strategies for interacting with the described world in a successful manner.¹

There are eight different concepts that were examined in the questionnaire which form different belief sub-systems. They are: conflict/harmony, trust, status, threat, control/chance, power, moral considerations, and competition/cooperation. These different sub-systems are grouped under the two larger systems: worldview and prescriptions for behavior. The worldview system contains beliefs about: conflict/harmony, threat, control/chance, and trust. The prescriptions for behavior system contains beliefs about: power, status, competition/cooperation, moral considerations, and trust. Note that trust falls into both systems. Trust is both a prescription for behavior ² and an organizational belief

¹) The idea of "descriptions" and "prescriptions" shows a similarity to the operational code's philosophical and instrumental domains i.e., worldview and strategies. The formulation of the sub-systems on power, status, etc. were derived partly from ideas in the operational code and those from Rokeach as well as some original contributions.

²) There were some questions on the questionnaire which asked whether leaders "should trust" other nations, thus asking for a prescription for behavior not just a description of

about the trustworthiness of others.

A cross-item matrix was developed for each of the eight concepts. For example, each question that was asked about power was correlated with every other question about power. For example, a correlation coefficient was calculated for question 10 on power with every one of the 13 other questions asked about that concept on the questionnaire. Then the matrices were examined for significant interrelationships that would indicate a consistent set of beliefs.

A. CONSISTENCY AMONG THE SUB-SYSTEMS DEALING WITH PRESCRIPTIONS FOR BEHAVIOR

The belief system on prescriptions for behavior contains sub-systems on power, status, competition/cooperation, moral considerations, and trust. Inter-item relationship and consistency across the four spheres of thought are examined here on each concept.

1. Power

There were 14 different questions asked about power on the questionnaire over the four different spheres: the individual (3 questions); national (5 questions); international (3 questions); and nuclear policy (3 questions). The matrix was examined to see if there were significant

trustworthiness.

correlations between the items on power within a sphere of thought and across spheres. The results are very interesting. There are many significant correlations within each sphere and across spheres on beliefs about power. Each sphere shows some significant inter-correlations in the matrix.

Beliefs about power show a very high consistency across all areas of thinking and within each sphere as well. This appears to be a very salient quality which has a pervasive and persistent nature. The belief is so strong one way or the other that it transcends variations in context and players. Beliefs about power are also highly correlated with policy thinking. The people in this study have a consistent system of beliefs on power and those beliefs appear to shape policy thinking in a significant manner. Table 11A below shows the complete matrix of correlations on power.

TABLE 11A
POWER MATRIX

	#10	#11	#12	#26	#27	#28	#46	#47	#48	#76	#77
10	1.000		.3748@				.5138*				
11			.4531*								
12				.4305							.4066"
26					.4639*	.6218*			.5998*		
27						.7312*					
28									.4831*		
46							.6340*		.6722*		
47									.5553*		
48											
76											.6108*
77											

*coefficients significant at $p < .001$

"coefficients significant at $p < .004$

@coefficients significant at $p < .005$

Summary of questions for Table 11A.

#10: How important is power in international politics?

#11: Is military strength or economic resources mor important?

#12: Essential for leaders to negotiate from a position of military strength.

#26: Importance of power in personal relationships.

#27: Is it necessary to have leverage?

#28: Is power necessary to get what people need?

#46: Importance for Brazil to demonstrate its power.

#47: Importance for Brazil to become a major world power.

#48: Importance for Brazil to maintain power in Latin America.

#76: Do nuclear weapons give nations added power?

#77: Would having a nuclear weapon give Brazil added power?

There are several questions within one sphere whose responses are highly inter-correlated. For example, those who believe that military strength is the most important source of power (#11) also tend to believe that it is essential for political leaders to always negotiate from a position of military strength (#12). Those who believe that economic resources are the most important source of power tend to believe that it is not essential to negotiate from a position of military strength. In addition, those who believe that power is important to international politics (#10) also tend to believe that it is essential for leaders to negotiate from a position of military strength (#12). Those who do not believe power is important in international politics also tend to believe that it is not essential to negotiate from a position of military strength. The correlations within the individual sphere are higher. The respondents who believe that it is important to maintain power in personal relationships (#26) also tend very strongly to believe that power is necessary to get what people need (#28). Also, those who believe that it is necessary to hold some kind of leverage (#27) also believe that power is necessary to get what people need (28). Those who believe that leverage is not necessary also do not believe that power is necessary to get what people need.

On the Brazilian national level there are also three highly correlated items. Questions 46, 47, and 48 relate very

highly to each other. Those respondents who believe that it is important for Brazil to demonstrate its power (#46) also believe it is important for Brazil to become a major world power (#47) and that it is important for Brazil to maintain a status of power in Latin America (#48). It is essential to note that the opposite is true in all these cases. Those who do not believe that it is important for Brazil to become a major world power also tend not to believe it is important for Brazil to maintain a status of power in Latin America nor demonstrate its strengths.

Questions 44 and 45 in the national Brazilian sphere had only a few weak correlations with any of the other items on power. A closer look at the responses to these two questions may explain this phenomenon. Answers to question 44: How important is power to Brazilian politics? were very skewed to one side. 76% of the respondents answered 1, 2, or 3, that power is very, to extremely important. This may have thrown off its relationships to other power questions which were more evenly distributed. The same problem happened for question 45: Is military strength the most important source of power for Brazil or are there other more important sources? In this case the answers were skewed to the other side. 64% of the people marked 7, 8, or 9, that other sources are more important.

In the nuclear sphere, questions 76 and 77 are very highly correlated. Those who believe that nuclear weapons

give nations added power also tend to believe that having a nuclear weapon would give Brazil more power. Conversely, those who believe that nuclear weapons do not give nations added power also tend to believe that having a nuclear weapons would not give Brazil more power.

In summary, there are a number of significant correlations within each sphere of beliefs about power, indicating a high level of consistency within spheres of thinking. Believing that power is important or unimportant is a highly salient value for this population.

In addition, there are also a number of significant correlations across the different spheres of beliefs on power. No sphere of thought on power is isolated from the other spheres. International beliefs have links to all three of the other areas. For example, responses to question 10 on the international level are correlated to answers to question 46 in the national sphere. Those who believe that power is important in international politics also tend to believe that it is important for Brazil to demonstrate its powers to the rest of the world. Those who believe that it is essential for political leaders to always negotiate from a position of military strength (#12) also tend to believe that it is important to maintain power in relationships between people (#26) and tend to believe that having a nuclear weapon would give Brazil more power (#77). Those who do not believe that it is essential to negotiate from military strength tend not

to believe that it is important to maintain power in personal relationships and don't believe that a nuclear weapon would give Brazil more power.

Responses on individual beliefs also relate to responses on national beliefs. The respondents who believe that it is important to maintain power in personal relationships (#26) also tend to believe that it is important for Brazil to maintain a status of power in Latin America (#48) and believe that power is necessary to get what people need (#28).

Beliefs about the importance of power appear to be pervasive and persistent across various spheres of thought and show a high level of consistency.

2. Status

A status matrix was also developed from the nine questions on status in the questionnaire. These questions ask about demonstrating one's strengths and having a strong sense of pride. There are a number of significant relationships both within each area and across the spheres. Beliefs about status and pride show a clear consistency both within a level of thinking and across the four levels. Relationships between the first three levels are very strong. Thinking about status on the nuclear level appears to be less strongly related to beliefs about status on the other levels. It must be remembered that results on policy thinking on nuclear issues in general show significant correlations to beliefs about status in this research. The results of the matrix

examination demonstrate that there is a high degree of consistency within the sub-system on beliefs about status. The significance of this high level of consistency is that this pattern, which is repeated in the other prescriptions for behavior, seems to fill in a more complete picture on policy thinking. The beliefs that show a higher level of consistency tend also to be the beliefs that correlate with policy preference. Table 11B shows the significant correlations.

TABLE 11B
STATUS MATRIX

	<u>#5</u>	<u>#6</u>	<u>#21</u>	<u>#22</u>	<u>#37</u>	<u>#38</u>	<u>#71</u>	<u>#73</u>
5	1.00	.4302"	.4899*	.4432*				
6				.4505*	.5714*	.8289*		
21				.4541*			.3667^	
22						.5214*		
37						.5368*		
38								
71								.3813@
73								

*coefficients significant at $p < .001$
 "coefficients significant at $p < .002$
 @coefficients significant at $p < .004$
 ^coefficients significant at $p < .006$

Summary of questions for Table 11B.

- #5: Importance for nations to demonstrate their strengths.
 #6: Should nations always maintain a strong sense of national pride?
 #21: Importance of showing others one's strengths.
 #22: Importance for people to have pride.
 #37: Importance for Brazil to demonstrate its strengths.
 #38: Importance of maintaining a strong sense of national pride

for Brazil.

#71: Importance for Brazil to acquire a nuclear weapon to show it has obtained world power status.

#73: Does the Brazilian military need nuclear weapons to secure its position of status?

Every sphere has at least two items that inter-correlate significantly. For example, in international beliefs, those who believe it is important for nations to demonstrate their strengths to the rest of the world (#5) also tend to believe that nations should always maintain a strong sense of national pride (#6). On the other hand, those who do not believe that it is important for nations to demonstrate their strengths also tend not to believe that nations should always maintain a strong sense of national pride. In the individual beliefs, those who believe that it is important to show others their strengths (#21) also tend to believe that it is important to have a sense of pride (#22). Pride is not so important to those who don't believe that it is important to show others their strengths. In the Brazilian national sphere, those who believe that it is important for Brazil to demonstrate its strengths (#37) also tend to believe that Brazilian leaders should maintain a sense of national pride (#38). National pride is less important to those who do not believe that it is important for Brazil to demonstrate its strengths.

Finally, on nuclear policy, those who believe that it is important for Brazil to acquire a nuclear weapon to show it has obtained world power status (#71) tend somewhat also to believe that the Brazilian military needs nuclear weapons to secure its position of status (#73). Conversely, those who do

not think it is important for Brazil to acquire a nuclear weapon for world status also tend to believe that the Brazilian military does not need nuclear weapons to secure its position of status.

In conclusion, there is a very high level of inter-sphere correlation in the status sub-system. Responses to almost every item correlated significantly with the other responses within that sphere. The exception is question 20. This phenomenon is actually very interesting because question 20 also does not correlate with any of the other questions on status. A closer look at the question offers an explanation. Question 20 asks: In general do people tend to have confidence in their abilities or do people always doubt their own capabilities? The question is really asking about self-confidence and not about the value of status or pride. So, because of that difference it is not tapping into the same sub-system in any of the spheres. Question 20 does not ask for a prescription for behavior, but rather a description of self-esteem. How people describe confidence does not appear to relate to evaluating strategies of attaining esteem.

There are also a number of significant correlations across the four spheres of thought on status. For example, those who believe that it is important for nations to demonstrate their strengths to the rest of the world (#5) also tend to believe that it is important for people to show others their strengths (#21). On the other hand, those who do not

believe it is important for nations to demonstrate their strengths also do not believe it is important for people to do it either.

In addition, those who believe that nations should always maintain a strong sense of national pride (#6) also tend to believe that it is important for people to have a sense of pride (#22). Conversely, those who think it is less important for people to have a sense of pride also believe that it is less important for nations to maintain a strong sense of pride. Questions 5 and 6 also have strong correlations with items on the national Brazilian level. Those who think that it is important for nations to demonstrate their strengths to the rest of the world (#5) and maintain a strong sense of national pride (#6) also tend to think that Brazil should demonstrate its strengths (#37) and that Brazil should have a strong sense of pride (#38). Conversely, those that do not believe that it is important for nations to maintain a strong sense of national pride also think it is not necessary for Brazil to do so either.

Responses to question 38 also relates significantly to individual beliefs. Those who believe that it is important for people to have a sense of pride (#22) also think it is important for Brazil's leaders to maintain a strong sense of national pride for Brazil (#38). Beliefs about pride are very consistent across these first three spheres.

In the nuclear sphere, those who believe that it is

important for people to show others their strengths (#21) also tend somewhat to believe that it is important for Brazil to acquire a nuclear weapon to show it has obtained world power status (#71). Those who believe that it is not important for people to show others their strengths also tend to believe that it is not important for Brazil to acquire a nuclear weapon to show it has obtained world power status.

Beliefs about status and pride are very consistent both within each sphere and across spheres. The correlation coefficients in the matrix show that many of these correlations are very high. People tend to have a very high level of consistency in their thinking on matters of status. This pattern of consistency may reflect the strength of this particular belief system and may further explain why status correlates so significantly with policy preference and thinking.

3. Competition/Cooperation

A competition/cooperation matrix was developed from the questions on the questionnaire. This matrix also includes question dealing with zero-sum and collective bargaining as a part of the same belief sub-system. There are 14 questions that make up the matrix. Two questions were asked on individual beliefs, five on Brazilian national beliefs, four on international beliefs, and three on nuclear policy. There are a number of significant relationships within the matrix and some that are weaker but also support the pattern of

consistency. These relationships are both within and across the four spheres.

In general, there appears to be a pattern of consistency within and across spheres of beliefs about competition and cooperation. All the spheres of beliefs show some significant relationships with other domains. The correlations are not as high as those on beliefs about power and status but, there is a definite pattern of consistency in this sub-system as well. Table 11C shows the matrix of inter-correlations on competition and cooperation.

TABLE 11C
COMPETITION/COOPERATION MATRIX

	#14	#15	#16	#17	#30	#31	#51	#53	#79	#81
14	1.00	.4110@	-.4381"	.4213@			.4364"		.4728*	
15							.4164"			
16					-.5789*	.4733*				
17										
30						-.3421^				
31										
50							.4273"			
51								.4273"	.5290*	
79										.5344*
81										

*coefficients significant at $p < .001$

"coefficients significant at $p < .002$

@coefficients significant at $p < .003$

^coefficients significant at $p < .010$

Summary of questions for Table 11C.

- #14: How much should nations compete?
- #15: Achieve national goals better through competition or cooperation.
- #16: Is it always win/lose or is there mutual gain?
- #17: Is the enemy other nations or socio-economic problems?
- #30: In life is competition or cooperation better?
- #31: Can compromise bring gains for both sides or is it win/lose?
- #51: Importance for Brazil to compete economically with Argentina.
- #53: Brazil's problems due to conflicts with nations or other causes.
- #79: Importance for Brazil to get the bomb if Argentina had it.
- #81: Would having a nuclear weapon offer Brazil an advantage in negotiations?

Within each sphere of thought, there are a number of significant correlations. In international beliefs, those who believe that nations should compete a lot (#14) also tend to believe that leaders can achieve national goals better through competition (#15). Those who believe that nations should not compete very much also tend to believe that leaders can achieve national goals better through cooperation. Also, those who think nations should compete a lot (#14) tend to believe that what one side wins the other side loses (#16). Those who do not think that nations should compete so much also tend to believe in mutual gain through cooperation. Similarly, those who believe nations should compete a lot (#14) also tend to see other nations as the enemy (#17). Those who think that nations should not compete very much tend to believe that economic and social problems are the enemy.

The individual sphere shows the weakest correlations. There are only two questions at this level, items 30 and 31.

There is a slight tendency for those who believe that life is a competition (#30) to also believe what one side wins the other side loses (#31). Also, there is a reverse relationship: those who think that people can get what they need through cooperation also tend to believe somewhat that compromise can bring gains for both sides.

In the Brazilian national sphere, there are two significant relationships among the five variables. Those who believe that Brazil and Argentina should be strong rivals (#50) also tend to believe that it is important for Brazil to be competitive with Argentina economically (#51) and tend to believe that Brazil's problems are due to conflictual relations with other countries (#53). Conversely, those who think that Brazil and Argentina should not be competitive economically or politically also tend to believe that Brazil's problems are due to inflation, pollution, etc. The other two questions on this level apparently tapped into slightly different nuances in thought and do not show any strong relationships with the other three questions.

On nuclear policy, those who believe that if Argentina had a nuclear weapon Brazil would have to have one, too (#79), also tend rather strongly to believe that having a nuclear weapon would offer Brazil an advantage in its negotiations (#81). On the other hand, those who do not think it would be important for Brazil to get the bomb if Argentina had it, also tend to believe that a nuclear weapon would not offer Brazil

any advantage in its negotiations with other countries.

Three of the spheres have significant inter-item correlations which show a consistency of beliefs for that domain. The individual sphere has only two items and they have a somewhat weak correlation. There appears to be a degree of consistency within the four levels on beliefs about competition and cooperation.

There are a number of significant correlations across the four spheres in this sub-system. Each sphere is linked to some other domain and no sphere is completely isolated. For example, responses to question 16 on international beliefs relates significantly to responses on both questions 30 and 31 on individual beliefs. Those who believe what one side wins the other side must lose (#16) also tend to believe that life is generally a competition (#30). On the other hand, those who believe in mutual gain through cooperation also tend rather strongly to believe that people can get what they need through cooperation. In addition, those who believe what one side wins the other side must lose on a personal level (#31) tend to believe the same thing on the international level (#16). Those who think there is mutual gain on the international level also tend to think there is mutual gain on the personal level.

Responses to questions 14 and 15 on international beliefs relate significantly to responses to question 51 in the national sphere. Those who believe nations should compete a

lot (#14) also tend to believe that it is important for Brazil to be competitive with Argentina (#51). Those who believe that leaders can achieve national goals better through cooperation also tend to believe that it is unimportant for Brazil and Argentina to compete economically. Those who think that competition works better believe that Brazil and Argentina should compete economically.

Responses to question 14 also relate significantly to responses to question 79 on nuclear policy. Those respondents who believe that nations should compete a lot (#14) also have a tendency to believe that if Argentina acquired a nuclear weapon Brazil would have to have it, too (#79). Those who do not believe nations should compete very much tend to believe that it would not be important for Brazil to acquire a nuclear weapon if Argentina had one. This is a very important relationship for this study because there has existed a very strong nuclear rivalry between these two nations until recently when they signed an agreement not to develop nuclear weapons. Beliefs on this issue are extremely important to the future of the agreement.

Responses to question 51 on the national level also relate to responses to question 79. The respondents who believe that Brazil and Argentina should compete economically (#51) also tend to believe that Brazil would have to have a nuclear weapon if Argentina had one (#79). Conversely, those who believe that Brazil and Argentina should not compete

economically also do not think that Brazil would need the bomb if Argentina had it.

Beliefs about cooperation and competition appear to have a level of consistency which is somewhat lower than that of power and status but, nevertheless, significant. So far, prescriptions for behavior on power, status, and cooperation/competition show significant levels of consistency.

4. Moral Considerations

There are four questions on moral considerations in the questionnaire, one for each of the four spheres. Therefore, the matrix only has four variables and is much smaller than for the other concepts. What is remarkable about this index, though, is that every item is significantly correlated to every other item in the matrix. Because there is only one question for each sphere there cannot be any within-sphere correlations. All the correlations are across spheres. Not only do all the items correlate significantly, some of the correlations are extremely high. Table 11D shows the correlations for beliefs on moral considerations.

TABLE 11D
MATRIX ON MORAL CONSIDERATIONS

	<u>#13</u>	<u>#29</u>	<u>#49</u>	<u>#78</u>
13	1.000	.6728*	.7730*	.4137@
29			.8064*	.4269"
49				.5579*
78				

*coefficients significant at $p < .001$

"coefficients significant at $p < .002$

@coefficients significant at $p < .003$

Summary of questions for Table 11D.

#13: To what extent should national leaders be guided by moral considerations?

#29: In making decisions to what extent should people be guided by moral considerations?

#49: To what extent should Brazil's leaders be guided by moral considerations?

#78: Is having nuclear weapons a moral issue or not a moral issue?

Those who believe that in personal relationships people should be guided by moral considerations most of the time (#29) also tend to believe that Brazil's leaders (#49) and national leaders in general (#13) should be guided by moral considerations most of the time. Those who believe that in personal relationships people should be guided by moral considerations to a lesser extent, also tend to believe that Brazil's leaders and national leaders in general should be guided by moral considerations to a lesser extent.

Responses to the questions on moral guidance in the three spheres of thinking e.g., individual, national, and international, all correlate significantly with the responses

to question 78 on nuclear policy. Those who believe in each sphere that people should be guided by moral considerations most of the time also tend to believe that having a nuclear weapon is a moral issue. Conversely, those who believe that people should be guided by moral considerations to a lesser extent, also tend to believe that nuclear weapons are not a moral issue. This is an extremely important phenomenon in understanding the formation of nuclear policy thinking and preference. Beliefs about moral considerations appear to be very strong and consistent and unaffected by the sphere of personal or political thinking on which one is focused. The correlations are the most consistent and the highest of all the sub-systems.

In the chapter on moral considerations, it was demonstrated that those who believe that nuclear weapons are a moral issue do not support having a nuclear weapons capacity and do support international arrangements to inspect nuclear facilities. The pattern of thinking which is significant here is that 1) those who feel that people should be guided by moral considerations most of the time
2) tend to believe that nuclear weapons are a moral issue and
3) don't support a nuclear weapons policy.

On the other hand, 1) the less that someone believes that people should be guided by moral considerations 2) the less they believe that nuclear weapons are a moral issue and 3) the more they support a nuclear weapons policy.

5. Trust

The seven questions on trust were cross correlated and placed into a matrix like the previous sub-system. There is one question on individual beliefs, three on Brazilian national beliefs, one on international beliefs, and two on nuclear policy. Because there is only one question in both the individual and international spheres, there are no inter-sphere correlations for those two sections. In addition to that, however, there was not even a weak correlation on the two nuclear questions. That leaves only one significant inter-sphere correlation. Table 11E shows the only two significant correlations that occurred on trust.

TABLE 11E

TRUST MATRIX

	<u>#35</u>	<u>#36</u>	<u>#69</u>
35	1.000	.4605*	.5740*
36			
69			

*coefficients significant at $p < .001$

Summary of questions for Table 11E.

#35: Should Brazilian leaders trust the Great Powers?

#36: Can Brazilian leaders trust other nations to abide by international agreements?

#69: Should Brazil trust that the nuclear powers would never attack Brazil with a nuclear weapon?

Of the 21 possible correlations on trust there are only two that are significant. One is an intra-sphere relationship between responses to questions 35 and 36 on the national

level. The respondents who believe that Brazil's leaders should trust the Great Powers not to violate Brazil's interests (#35) also tend to believe that their leaders can trust other nations to abide by international agreements (#36). Those who do not believe that Brazil's leaders should trust the Great Powers also tend to believe that Brazil's leaders cannot trust other nations to abide by international agreements.

There is only one significant relationship across the four spheres. Responses to question 35 in the national sphere and 69 on nuclear policy correlate significantly. Those people in the study who believe that Brazil's leaders should trust the Great Powers (#35) also tend to believe that Brazil should trust that the nuclear powers would never attack Brazil with nuclear weapons (#69). Those who think that Brazil's leaders should not trust the Great Powers also tend to believe that they should not trust that the nuclear powers would never attack Brazil with a nuclear weapon.

It should be remembered that the range of responses to these three questions (35, 36, and 69) was somewhat skewed toward the "not trust" end of the scale. Still the answers showed a few of the respondents marking the trust side and the mid-range numbers on the scale. Most of the Brazilians in the study, however, do not trust the Great Powers.

As stated, on the entire trust matrix there are only two significant correlations. While those show some interesting

relationships, in general, consistency within and across levels on trust is very weak. There are important differences in the way people feel about trusting nations in general e.g., more trusting, and trusting the Great Powers e.g., less trusting. Trust on a personal level seems to have a different quality for the respondents than trust on the political level. Trust appears to be much more dependent on context than beliefs about power, status, morality, or even competition which are more consistent across the four levels.

B. DESCRIPTIONS OF THE WORLD: WORLDVIEW SYSTEMS

The worldview sub-systems, in general, are made up of beliefs which describe how the individual sees the world. It represents an effort to describe reality. These beliefs are not value oriented in the same way that the prescriptions for behavior systems are. These questions do not ask "should" or "how important." They ask "what is the world like?"

Individual perception still plays an important role in describing the world as information is interpreted by the viewer in terms of his or her own experience and cultural norms. While an individual's view of the world may have implications for behavior, as we have seen from this research, values on particular behavioral strategies and policy choices do not necessarily spring from worldview. This section will examine consistency within the sub-sections of the worldview system to see whether consistency sheds some light on

understanding the gap between worldview and policy thinking.

1. Conflict/Harmony

There are 7 questions on the questionnaire which ask the respondent to describe the amount of conflict and harmony in the world across the four spheres of thought. There is one question on individual beliefs, two questions on national Brazilian beliefs, three questions on international beliefs, and one question on nuclear policy. A matrix on conflict and harmony was developed using the seven questions. Results show that there are no inter-sphere correlations. There is only one question in the individual sphere and only one in the nuclear sphere, so there could not be any interrelationships there. However, there are three questions in the international sphere and two in the national sphere which could offer the possibility for correlations. None exist. There are not even any weak interrelationships within the two spheres. The correlation coefficients within levels range between .0259 and .1630, practically no relationship at all. It appears that beliefs about conflict and harmony are very context specific and the strength of the beliefs are not dynamic enough to transcend even subtle differences.

There is only one strong significant correlation between spheres and one other somewhat weak relationship. Responses to question one on the international level correlate highly with responses to question 18. That relationship is .6643

with a significance of $p < .001$. Those that believe that the nature of international politics is more conflictual also tend to believe that the world is essentially more conflictual. Conversely, those who believe the world is essentially more harmonious also tend to believe that international politics is more harmonious. The difference in the way the two questions are asked is not very great, and that is probably why these two questions correlate when others do not. When the differences become greater the strength of the belief appears not to be able to transcend the gap.

There is a weaker correlation between questions 1 and 33. Question 33 asks: In recent years do you think that Brazil's relations with other nations is best characterized by harmony or conflict? The correlation coefficient is .3790 with a significance of $p < .005$. Those who believe that Brazil's relations with other nations in recent years is more harmonious also tend to believe that the nature of international politics is more harmonious. Those who believe that Brazil's relations with other nations is more conflictual also tend to believe that international politics is more conflictual. Even though this relationship is somewhat weak the pattern of the responses to the three questions, 1, 18, and 33, show a pattern of thinking that could be described as a worldview on conflict and harmony. As we have seen, however, in earlier chapters the link between beliefs on conflict and harmony and policy thinking is also very weak.

There does not appear to be a strong sense of consistency within the sub-system on conflict and harmony and these beliefs tend to be very context specific.

2. Threat

There are eight questions on the questionnaire which ask about beliefs on threat and anxiety. Threatening and/or anxious make up one end of the polar continuum and friendly and/or secure make up the opposite end. The two concepts are so close that they were combined in the same matrix. Combining them does not dilute the correlations between the variables because each item is individually correlated with every other item. The advantage is that it offers the opportunity of looking at a complete picture of their interaction. However, of the 28 possible correlations, there is only one significant correlation in the entire matrix. There are 7 correlations in the .30 to .37 range but they are still very weak. They are weaker than the one weak correlation on the conflict/harmony matrix but there are more of them. So, there may be a weak pattern formation, but it does not reach the significant level.

The one significant relationship is between the two items on individual beliefs. Question 23 asks: In a general way do people usually feel secure or anxious? Question 24 reads: Is the world basically a friendly or a threatening place in which to live? The correlation between these two items is .5247

with a significance of $p < .001$. Those who believe that people usually feel secure also tend fairly strongly to believe that the world is a friendly place. On the other hand, those who believe that people usually feel more anxious also tend to believe that the world is a more threatening place. This demonstrates that there is a link between feeling threatened and feeling anxious on a personal level.

The strongest of the remaining weaker correlations is between questions 23 and 55 in the national sphere. Question 55 asks: Are there reasons for Brazilian leaders to fear internal threats to Brazil's security? Yes/No That correlation is .3784 with a significance of $p < .009$. Those who believe people usually feel secure believe somewhat that there are internal threats to Brazil's security. This was not the expected relationship. However, through the interviews it was discovered that these people are concerned about inflation and social problems in Brazil and not military threats. In this case, it depended on what issues the respondents were focused.

Like beliefs about conflict and harmony, beliefs about threat appear also to be very context specific. It depends on whether people are thinking about threats from other nations, or people, or social and economic threats. The strength of the belief itself is not strong enough to transcend differences in context or sphere of thought. There does appear to be a weak consistency across the sub-system on

threat but, it does not reach the significant range.

3. Control

There are five questions on the questionnaire which ask about control. These five questions were organized into a control matrix like the others. There is one question in three of the four spheres and two in the national sphere. There is no inter-correlation on the national level. Because there is only one item in the other spheres, the matrix shows no significant correlations within spheres. There are, however, two significant correlations across the items which link the three non-nuclear spheres of thought. Responses to question 42 correlate with the responses to questions 9 and 25.

Responses to questions 9 and 42 correlate at .4375 with a significance of $p < .001$. Question 9 asks: Can national and international leaders control global events or does chance make events uncontrollable? As a group the respondents believe that leaders can control events most of the time. Question 42 asks: Can Brazil's leaders control events so that they can get what Brazil needs or are events up to chance? Those who believe that leaders can control global events almost all the time tend to believe that Brazil's leaders can also control events most of the time. Those who believe that chance plays a greater role in global events tend to believe that chance plays a greater role for Brazil, also.

Responses to question 25 on the individual level also correlate with responses to question 42. On a personal level beliefs about control are more centered around the middle of the 9 point scale. Those who believe that people can generally have control over how their lives are going tend also to believe that Brazil's leaders can control events most of the time. Those who believe that people's lives are more up to chance also tend to believe that in Brazil events are more up to chance. This relationship is .4684 with a significance of $p < .001$.

The rest of the correlations in the matrix are so low that they show basically no other relationships at all. Still these two significant correlations show a pattern across the three levels which indicates a consistency of thinking on how much control exists in world events.

The question on the nuclear level asks: Would the capability to build nuclear weapons give Brazil greater or lesser control over its ability to get what it needs? The range of answers to this question is fairly evenly distributed along the 9 point scale. Responses to this question have no relationship at all to any of the other control questions. Nuclear weapons appear to be a totally different area of thought. Those that think nuclear weapons give greater control have various beliefs about the controllability of events. What was never asked about control is, how important is it to be in control of events. This type of question would

have assessed the value placed on control by the respondents. The importance of control could be a significant factor, but it was not asked on the questionnaire.

There appears to be a significant amount of consistency in the sub-system on control. Those who believe that events are controllable tend to believe that is true at various levels of thought. This does not hold true for beliefs about control on the nuclear level.

4. Trust

The trust matrix was already discussed under the prescriptions for behavior section. As was noted there are only two significant relationships on the trust sub-system matrix. Beliefs about trust on the individual level appear to have a different quality than those on the political level. Trusting or not trusting the Great Powers seems to have some significant consistency across two of the spheres. But, in general, beliefs about trust appear not be significantly consistent.

C. Conclusions About Consistency From This Study

There appears to be a clear contrast between the degree of consistency within the system on prescriptions for behavior and the worldview system. In the system on prescriptions for behavior, power, status, competition, and moral considerations all have a significant level of consistency within and across

the four spheres of thought. The moral considerations sub-system is the most remarkable with its very high correlations among responses to every item in the matrix. Power also showed a high degree of consistency throughout the matrix even though there are so many items in that sub-system. However, consistency within the sub-system on trust is very weak.

In contrast to the high level of consistency in the system on prescriptions for behavior, the worldview system has a low and in some cases non-existent degree of consistency within and across the four spheres. Beliefs about worldview tend to be more context specific and are not dynamic enough to carry significantly across different spheres of thought. On the other hand, beliefs in the sub-systems on prescriptions for behavior show a high degree of tenacity throughout spheres of thought and appear to be dynamic enough to transcend differences in context and domains of thought. The level of consistency within a belief system appears to be an indicator of the driving quality of the central belief. When the level of consistency is high throughout a system and its sub-systems, like those in prescriptions for behavior, there is a stronger correlation to policy thinking. When the level of consistency is weak, the relationship to policy thinking appears to also be weak.

Chapter TwelveCONCLUSION:
THE PREDICTIVE VALUE OF POLITICAL BELIEFS
AND
POLICY IMPLICATIONSI. BELIEF SYSTEMS AND POLICY THINKING

The results of this study, both from the interview and the questionnaire, show that beliefs which constitute prescriptions for behavior correlate significantly with policy thinking on nuclear issues. While it is not possible through this research to confirm causality, the strong level of consistency within the subsystems on these beliefs and the convergent patterns they create demonstrate linkages in thinking. These linkages form an internal logical pattern of thinking which allows the researcher to attain a significant level of predictability from one variable to another, i.e., the more important power is believed to be, the greater the tendency to support nuclear development.

While beliefs on both worldview and prescriptions for behavior both form patterns of thought, unlike beliefs that convey behavioral values, beliefs which constitute a description of the world do not correlate with policy thinking. These findings do not support the operational code literature. Operational code researchers claim that answers to the "master question" on whether people view the world as

harmonious or conflictual set the tone for other political beliefs and shape policy preference (George, 1979; Walker, 1990; and see a further discussion of this literature in chapters one and four above.) The respondents in this study tend to describe a pattern of beliefs about threat, conflict or harmony, trust and control as they perceive them, but consistency within each of these sub-systems is weak and they do not predict policy preference.

Worldview beliefs tend to vary depending on the specific context of the situation and are not tenacious enough to overcome stronger, intervening factors. While there are only a few weak correlations between worldview and policy thinking, there are some indirect linkages. Beliefs about the human capacity for conflict or harmony relate to beliefs on the importance of military strength which correlate significantly with some policy questions. Both threat and trust have indirect links to nuclear policy thinking through relationships to beliefs about competition and rivalry with Argentina and with the importance of military expenditures. Nevertheless, worldview does not appear to be a useful concept in predicting policy thinking.

In contrast, beliefs on power, status, competition, cooperation, and moral considerations show high levels of consistency within and across spheres of thought. These prescriptions for behavior also show a pattern of correlations with policy thinking on nuclear issues. In addition, there

are significant correlations between items on power and those on status and competition and cooperation. Those who believe power is important also tend to believe that status and competition are important. Those who believe that power is relatively unimportant also tend to believe that status is unimportant and that cooperation is the better means for achieving goals.

Beliefs which convey moral considerations are significantly correlated with nuclear policy thinking. In both the interviews and the questionnaire, those who believe that nuclear weapons are a moral issue do not support a nuclear weapons policy. On the questionnaire those who believe that leaders should be guided by moral considerations most of the time also tend to support international agreements and IAEA inspections and don't support any of the policy options that might lead to the development of a nuclear weapons capacity. The less people believe that leaders should be guided by moral considerations, the less they think that nuclear weapons are a moral issue, the less they support international agreements or IAEA inspections, and the more they support a nuclear weapons capability.

II. PATTERNS OF POLICY THINKING

Two distinct patterns of policy thinking emerged from the responses of the extreme groups which comprise the polar opposites of the sample. Rokeach, Holsti, Converse, and

others have found it useful to study model types in order to develop a clearer definition of a specific way of thinking. For this study, two model types were also formulated which corresponded to Holsti's Types A and E from his typology (1977) according to their patterns of policy choices.¹ The Type A tends: to seek consensus on policy formulation, to look for common interests in solving international disputes, not to believe that situations are always win or lose, and not to emphasize military options. On the other hand, the Type E tends to pursue options which impose a solution, believes that most outcomes are either win or lose, and places a strong emphasis on military solutions. In response to the questions in this study on nuclear policy, the Type E* ² group:

- 1) advocates continuing weapons grade fuel research;
- 2) feels no IAEA inspections should take place on nuclear fuel research;
- 3) feels Brazil should not put all its nuclear facilities under IAEA inspections;
- 4) believes Brazil can afford to build nuclear weapons;
- 5) has supported nuclear weapons research previously;

¹) Holsti's type A corresponds to the CICON group discussed above in chapters 4 and 5; type E corresponds to the NIM group.

²) Holsti's Types also had a specific worldview on conflict and harmony which was found in this research not to be consistent with policy thinking, therefore Types E and A are labeled E* and A* in this study.

- 6) feels Brazil should be able to sell nuclear technology to non-nuclear states;
- 7) supports Brazilian efforts to build a nuclear submarine;
- 8) believes that Brazil should not sign the Non-Proliferation Treaty;
- 9) feels Brazil should not put the Treaty of Tlatelolco into effect;
- 10) believes that if Argentina were to get the bomb Brazil would have to have it, too.

The Type A* group tends to:

- 1) think that Brazil should not continue its research on weapons grade nuclear material nor continue nuclear research for peaceful ends;
- 2) advocate IAEA inspections on nuclear fuel research;
- 3) feel Brazil should put all its facilities under IAEA inspections;
- 4) believe Brazil cannot afford to build nuclear weapons;
- 5) have not supported nuclear weapons research previously;
- 6) feel Brazil should not sell nuclear technology to non-nuclear states;
- 7) not support Brazilian efforts to build a nuclear submarine;

- 8) believe Brazil should sign the Non-Proliferation Treaty;
- 9) feel Brazil should put the Treaty of Tlatelolco into effect;
- 10) believe that even if Argentina were to get the bomb, Brazil would not have to have it.

In general, both groups demonstrate a pattern of thinking on nuclear issues. The Type E* group tends not to believe that cooperation in international arrangements would bring mutual benefit to all the participants. International cooperation is represented in this study by IAEA inspections, the Treaty of Tlatelolco, and the Non-Proliferation Treaty. The Type E* group appears to believe that cooperation by Brazil in these kinds of international arrangements would jeopardize Brazil's sovereignty and national security. In the interviews it was mentioned that the NPT is a colonialist document and that IAEA inspections would be intrusive to Brazil's sovereignty. Nationalism plays a strong role in Type E* thinking.

The thinking reflected by the Type E* group seems to indicate a system of beliefs similar to political "realism."³ Realist theory claims that the world is anarchic and each nation must rely on self-help. Any other nation could be the enemy and there must be a defense that can

³ The theory of political "realism" has been carefully defined by Hans Morgenthau in his book, Politics Among Nations, 1985.

counter whatever means of aggression that might come from any source. Therefore, weapons must be as advanced as whatever a potential enemy might have. The interviews reveal that many in this group believe that nuclear technology is the most advanced form of weapons offense and defense.⁴ One admiral stated his belief that the best technology always wins. The Type E* group believes that research must continue on nuclear weapons grade material and nuclear propulsion unincumbered by inspections which might interfere with developing this capability. This group also feels that if Brazil's traditional competitor, Argentina, were to acquire a nuclear weapon capability, then Brazil would have to it, too, as a deterrent and as a matter of prestige.

The Type A* pattern of policy thinking reflects a different belief system. The Type A* group believes that cooperation is necessary and beneficial to those who participate in international agreements. In the interviews it was expressed that Brazil cannot afford to become isolated from the rest of the world and take the chance of foregoing trade and development aid. For this group interdependence rather than anarchy is the prevailing dynamic of international relations.⁵ The best interest of any nation is to seek

⁴) 42% of the Type E* group are military officers. None of the Type A* are military officers.

⁵ For a more complete analysis of political interdependence see Robert O. Keohane's Power and Interdependence: World Politics in Transition, New York: Little Brown, 1977.

agreements which lessen the need to invest resources in weaponry so that scarce resources can be used to enhance other aspects of society. This group also tends to believe that if Argentina were to get the bomb Brazil would not need it. The interviews revealed that for this group Argentina was not a threat to Brazil. One interviewee pointed out that Argentina could not use the bomb on Brazil without jeopardizing its own territory with radiation contamination.

Responses by these two groups correlate significantly to their responses to questions on beliefs which express prescriptions for behavior. While members within each group have varying worldviews, their beliefs on the importance of power, status, competition and cooperation, and moral considerations are highly consistent with their policy thinking. The Type A* group, which does not advocate a nuclear capability, does not think that power, status, and competition are important. The group believes that cooperation is the best strategy and that leaders should be guided by moral considerations most of the time. The Type E* group, on the other hand, believes that power, status, and competition are important and believes that leaders should be guided or not guided by moral considerations to about an equal extent.

III. IMPLICATIONS FOR BRAZIL

The relationship between belief systems and policy

implications for Brazil and for the proliferation of nuclear weapons and nuclear weapons capability. The study has demonstrated that there are significant correlations between belief systems on prescriptions for behavior and policy thinking and preference on nuclear issues. While there is a range of beliefs and policy thinking within the elite group that participated in the study, those who believe that power, status, and competition are important also tend to support the development of a nuclear weapons capability without interference by international arrangements. Those who support a pro-nuclear policy may believe that nuclear weapons project a symbol of power and status for Brazil. Also, beliefs about moral considerations appear to play an important role in shaping policy thinking on nuclear issues. In the chapter on power, the responses by the participants to the question "who has power in Brazil?" was discussed. Whoever has power also has a greater opportunity of implementing policy thinking and implanting belief system onto the political process. It is, therefore, valuable to examine the belief systems of the different groups involved in the study and the position these groups are perceived to have in the power hierarchy in Brazil.

A. Policy Thinking by Sector

There are 9 sectors of the Brazilian elite society represented in the study: business, military, government,

media, labor, scientists, the Church, environmentalists, and artists. The responses from each sector were examined to ascertain how each group answered the policy questions on nuclear issues in either a Type A* or E* manner. Table 12A shows the breakdown by group in descending order from more Type E* profile to more Type A* profile of thinking. The percent refers to the number of people in the sector who answered at least one question in a Type E* manner. The range refers to the total number of the ten policy questions selected that members of the group answered in a Type E* manner, e.g. 7 out of ten, 1 out of ten, etc. The total number of people who returned the questionnaire is 46.

TABLE 12A

Number of Questions answered in a Pro-nuclear by Sector

(N=46)

- 1) Military:(N=5) 100%; range of 6-8 out of ten.
- 2) Government:(N=6) 100%; range of 1-4 out of ten.
- 3) Scientists:(N=7) 71%; range of 1-3 out of ten.
- 4) Media:(N=5) 60%; range of 1-6 out of ten.
- 5) Labor:(N=5) 60%; range of 1 out of ten.
- 6) Business:(N=8) 38%; range of 3-4 out of ten.
- 7) Environment:(N=4) 25%; range of 1 out of ten.
- 8) Church:(N=3) 0%; 0
- 9) Artists:(N=3) 0%; 0

The Type E* group is widely distributed across the nine sectors. Because the Type E* group supports some, or most, of the issues related to the development of a nuclear weapons capability their position in leadership roles is critical to policy thinking on these matters. Clearly, the strongest Type E* group is the military. All of the members of the military who participated in the study answered most of the policy thinking questions in a Type E* manner. Each member of the military in the study answered 6 to 8 of the ten nuclear policy questions in accordance with the Type E* profile. They tend to support the continuation of research on weapons grade nuclear material without IAEA inspections, the development of a nuclear submarine, and the sale of nuclear technology to non-nuclear nations. They do not advocate the signing of the Non-Proliferation Treaty and some do not support putting the Treaty of Tlatelolco into effect. They also tend strongly to believe that if Argentina were to get the bomb, Brazil would have to have it, too.

This last issue is important. Argentina and Brazil have been in competition in the last several years to see who could develop a nuclear weapon first. In recent years bilateral agreements have been aimed at curbing that competition and

promoting cooperation between the former rivals. However, these agreements are based on the political will of the leaders of these two nations and the stability of civilian rule. As long as the military in Brazil are in control of the development of nuclear technology as they have been, they may very well continue with their former policy developed during the years of the secret parallel program, to develop nuclear weapons capability in case it is needed.

While it seems unlikely that a military coup would take place in Brazil at the moment, the military are already increasing their influence on policy. A recent article explains:

Indeed, the quiet re-emergence of Brazil's military in politics is a measure of the weakness of Mr. Franco, Brazil's third civilian President since 21 years of military rule ended in 1985.

On May 18, the military high command met in Brasilia with Mr. Franco. After the meeting, a joint statement issued by the President's office warned, "Democracy cannot commit suicide." The following day, the President dismissed Luiza Erundina, a left-wing leader of the Workers' Party, as Secretary of Federal Administration and named Romildo Canhim, a recently retired army general.

In other changes, a retired army colonel, Wilson Romão, was named acting Minister of Agriculture, and Sydney Possuelo was dismissed as president of Funai, Brazil's Indian Protection Service. Mr. Possuelo asserted that the army had opposed his plans to create Indian reserves in Amazon border regions. (James Brooke, "Brazil Answers Inflation With Cabinet Shuffle," New York Times, May 27, 1993, p. A9)

With the military asserting increasing influence over policy in the government, it is unlikely that they are going

to relinquish control over the nuclear projects. With no credible oversight on these facilities, the military can continue to pursue their goals. The project at Aramar, for example, has continued on its course of development uninterrupted even after President Collor denounced the nuclear program in the fall of 1990.⁶ As the interviews indicate, they have adopted a politically acceptable policy of "mastering the nuclear cycle." However, the process is exactly the same as what the military was doing under the secret "parallel program."

In addition to the military, 100% of the government members also answered at least one question in a Type E* manner. However, the range of the number of questions answered in this manner is much lower. Two government officials who are closely associated with nuclear policymaking answered four questions as a Type E* but the other four answered only one or two that way.

Former President Collor was a strong opponent of the nuclear weapons program, but he and the members of his administration who were working to establish controls on this program are now out of office. In their absence and while the government struggles to establish some level of order those

⁶) In an interview on Nov. 3, 1992, nuclear physicist, Luiz Pinguelli Rosa, former president of the Brazilian Physics Society, explained that more centrifuges had been added to the Aramar facility and had reached a level of about 900. In March, 1993, the director of Aramar told Gazeta Mercantil (see bibliography) that the capacity at Aramar would increased by 29% during this year.

who support nuclear development are most likely to continue business as usual. With the government setting policy and the military in control of nuclear development these two sectors are clearly the most influential in terms of policy thinking and implementation. It is significant that 100% of these two groups in the study are favorable to some degree of developing a nuclear capability. In other words, all of the members of government and military groups answered at least one of the policy questions in a pro-nuclear manner. Some answered only one question in a pro-nuclear manner, while others answered as many as 8 that way.

The group of scientists included in the study is made up of nuclear physicists and social scientists, some of whom study the military.⁷ Seventy-one percent of the scientists answered one or more of the questions in a Type E* fashion. The range is 1 to 3 out of the ten questions were answered in a pro-nuclear manner. Mainly the items that they support are the sale of nuclear technology and the development of the nuclear submarine.

The members of the media included in the study had a wide range of answers with 60% answering some questions in a Type E* manner. A newspaper journalist who writes about military-security issues for a Brazilian newspaper answered 6 of the ten questions as a Type E*. The editor of another newspaper

⁷) There was no difference in the way the social scientists and the physical scientists responded to these questions.

answered two of the questions in a Type E* manner. All of those in this group who answered in the Type E* manner feel that it is extremely important for Brazil to have the bomb if Argentina were to get it. In the interview with the editor he explained:

I also think that Brazil ought to have a technology very close to nuclear weapons technology. I think it would be a good idea that if some crazy person in Latin America were to make a nuclear weapon that Brazil could make its own rapidly. I am absolutely against proliferation, but I think that having this assurance we would not have to be at someone's mercy. We should continue not with a secret project but with an open project, and with the collaboration of Argentina, working together. (interview #13)

While 60% of the labor group answered one question in a somewhat Type E* manner, the issues were less critical to nuclear weapons development. One person does not support the Treaty of Tlatelolco and another thinks it would be somewhat important for Brazil to have a nuclear weapon if Argentina were to get one. Another supports the nuclear powered submarine. But all of them support IAEA inspections and do not think that research should continue on weapons grade material. Other labor leaders in the study are completely against any aspect of nuclear development.

Members of the business community show a mixture of thinking on nuclear issues. While only 38% of this group answered at least one question in a Type E* fashion, 2/3 of those that did answer that way support continuing the research on weapons grade nuclear fuel and selling nuclear technology

to non-nuclear nations. All of the 38% support the nuclear submarine and do not think that Brazil should sign the NPT. In contrast, the remaining 62% of the business sector do not support any of the nuclear policies listed in the questionnaire and do advocate entering into international agreements and undergoing IAEA inspections. The business sector appears to show a very wide range of policy thinking on nuclear issues. As a group it appears that it would be difficult to generalize. A closer look at their individual belief systems would be necessary before any judgement could be made.

Of the environmentalists, only one person did not support signing the NPT. Otherwise, the group as a whole answered as Type A* and do not support any development of a nuclear weapons capability. They feel very strongly that Brazil does not need a nuclear weapon even if Argentina were to get one.

The remaining two groups, artists and the Church, did not respond to any of the questions in a Type E* fashion. They do not support any development of nuclear technology even the nuclear powered submarine. They do not advocate selling nuclear technology and feel that all nuclear facilities should undergo IAEA inspections. They also believe that Brazil should enter into international agreements that ban nuclear weapons.

In conclusion, the groups vary a great deal in their

thinking on nuclear policy issues. The military as a group highly supports nuclear development. The government sector also is supportive of nuclear issues but to a lesser degree. The media and business are very mixed in their policy thinking. Some are strong supporters of nuclear policies and others are completely against the development of a nuclear capability of any kind. Scientists show some limited support of certain nuclear policies as do some of those who represent labor. Environmentalists, artists, and the Church make up the other end of the nuclear policy spectrum by not supporting any aspect of nuclear weapons development and advocating IAEA inspections which would keep control over what research is going on.

B. The Power of Each Sector as Perceived By the Respondents

In the interview, the participants were asked to explain who holds power in Brazil. A complete discussion of these responses is in chapter five. While most of the respondents believe that elites in Brazil in general hold power, specific elite subgroups are believed to have different levels of power. The list below places members of the elite in general at the top of the list followed by other elite groups in descending order according to the amount of power they are believed to hold.

- 1) Elites in general
- 2) Business and urban industrialists

- 3) The President and Congress
- 4) Landowners, government in general, labor ⁸
- 5) Military, multi-nationals, bureaucrats
- 6) Alliance between business and landowners, the media
- 7) Middle class technocrats, intellectuals, the people

Business and urban industrialists are believed to hold the greatest power. This finding confirms the observation by political analyst Hélio Jaguaribe, who describes Brazil as having several centers of power dominated by the consolidation of corporate interests (Jaguaribe, 1989, p. 16). The interviewees explained that members of the business community enter government in order to develop policy that protects and promotes business interests, after which they may return to business life. Therefore, business interests are influential both inside and outside the policymaking process. A recent study by Ben Ross Schneider published in Comparative Politics also describes Brazil's government bureaucracy as being very fluid. According to his findings, Brazilian bureaucrats move in and out of government more frequently than their counterparts in countries like France or Japan where people make government service a career.

This study shows that members of the business community have very polarized thinking on nuclear issues. The President

⁸) These three groups are not taken here as an aggregate. They are all listed on line four because they were all mentioned with the same frequency by the respondents.

and Congress are listed as the next most powerful group. President Collor during his administration demonstrated a great deal of power and influence in exposing the secret military parallel nuclear weapons program and developing agreements and mechanisms to curb and control that program. However, he has been impeached on corruption charges and his credibility has been destroyed. His leadership on nuclear issues is gone and the recent quadrilateral agreement with the IAEA had not been approved by Congress as of this writing in January 1994. The inspection mechanisms that that agreement was to put into place cannot be implemented until the agreement is approved.⁹ The mood in the Congress is unclear. A member of the Chamber of Deputies who has been very outspoken against nuclear weapons has this to say about IAEA inspections:

In regards to IAEA inspections Brazil takes a reasonable position that when the nuclear nations like the United States submit themselves to IAEA inspections then Brazil will do it also. What Brazil needs to do is assume a different position. Brazil does not accept IAEA and it should be simply stated that Brazil will accept IAEA when those countries also accept it. (interview #41)

A member of the Senate explains:

The Congress would most likely approve inspections by a team of Brazilian civilians. IAEA inspections are another story. That would be much more difficult. The issues are nationalism and sovereignty. Many are against what they consider

⁹) see Appendix for IAEA agreement. As of October, 1993, the Congress still had not approved the agreement. This information was taken from a telephone interview with Deputado Luiz Salomao, a member of CPI, in October, 1993.

intrusion by outside agencies. Any inspections have to be approved by Congress before they can take place. But, things are changing in the Congress and there is more interest in controlling this research. (interview #47)

At the time of this writing (January 1994) Congressional approval of the agreement with IAEA, which was signed in December of 1991, has not been forthcoming. Constitutional review begins in October, 1993, and will occupy most of the attention of Congress for several months, probably delaying ratification of the IAEA agreement for some time. (See footnote above.)

Congressional approval of the bilateral accord with Argentina in which both agree to carry out mutual inspections on nuclear facilities and to seek IAEA cooperation, was given only a few days before the final agreements were signed with IAEA and under strong pressure from President Collor. (Nucleonics Week, Dec. 1991) Without pressure from former President Collor, inspections may be put off. Timing is critical on the issue of inspections because, while delays linger, nuclear enrichment continues at facilities like Aramar which is adding more centrifuges to increase its capacity for enrichment (Gazeta Mercantil, March, 1993).¹⁰

Government in general in this study showed a slight leaning toward a Type E* view despite President Collor's

¹⁰) Gazeta Mercantil, March 12, 1993: "Admiral Othon Luiz Pinheiro da Silva told Gazeta Mercantil that Brazil will expand its capability to produce enriched uranium by 29 percent this year."

leadership in opposition to the program. A cabinet member who was interviewed and who supported Collor's position explains:

Congressional praise for the military's parallel program was a bit too enthusiastic. They thought that the military was doing a great job. There is an element of nationalism involved. The Congress seems to be willing to allow less control than I would like to see. (interview #42)

Landowners as a separate group were not included in this study. However, some of the business members are also landowners. The business community as a whole does not appear to have a consistent pattern of thinking on nuclear issues and this may hold true for landowners who the respondents see as linked to business interests in Brazil.

Labor in this study only shows a very slight support for some nuclear issues, but, in general, demonstrates a more Type A* view in this area of policy thinking. Labor was ranked after business and government by the respondents when asked who holds power in Brazil. Yet, their candidate, Lula, lost to Collor in the last presidential election by only a few percentage points. The Workers' Party (PT) was actively involved in the demonstrations prior to Collor's impeachment which brought pressure to bear on Congress to remove Collor from office. It was mentioned in the interviews, however, that when the Workers' Party has gained elected office, e.g., the Mayor of São Paulo, they have had to compromise with the business interests who wield significant power in Brazil. On the other hand, the PT is one of the biggest parties of the

current functioning political parties in Brazil¹¹ and is also one of the biggest parties. They are also well organized and less dependent on a single charismatic political figure than many of the other 19 or so political parties in Brazil. That is not to say that today's politicians have not been members of political parties before 1980. Those parties, however, are no longer in existence. Jaguaribe explains that politicians in Brazil change parties frequently and there is very weak party loyalty. Parties generally, in Brazil, have been formed around a particular personality perpetuating a patrimonial system rather than group interests or ideology (Jaguaribe, 1989, p. 13). The Workers' Party is different in this case because it represents the interests of the working class that make up its membership. The Party takes a position against the development of nuclear weapons. (interview #26) If a labor candidate were to gain the presidency in the next election, that candidate's belief systems and policy thinking would have a greater influence on shaping policy, unless the military were to decide to overthrow a labor oriented government.

The military were ranked after labor in terms of power in Brazil at the time of the interviews. However, it must be

¹¹) Political parties were weakened during the military regime and only allowed to reorganize in 1980. Some previous parties under the leadership of long established politicians were reconstituted under new names in 1980. Therefore, while the PT is one of the oldest of the parties that exist by name today in Brazil, some other parties, e.g. the PDT under Brizola's leadership, are ones that existed before under another name (Roett, 1992, pp. 41-74).

remembered that the military still have complete control over all nuclear fuel enrichment research in Brazil and recent accounts point to a re-emergence of military influence on policy decisions (Brooke, May 27, 1993). These nuclear facilities continue to be under navy, airforce, and army control. So, in terms of power in decision making regarding nuclear issues, the military still has almost absolute power. There have been some efforts to implement oversight mechanisms but, according to one of the interviewees who studies the military and is very close to several military leaders, these oversight mechanisms are not functioning. (interview #24) So far, IAEA inspections have not taken place at nuclear enrichment facilities like Aramar. In addition, while Brazil is suffering from economic troubles, no cutbacks have been visible at Aramar. (interview #27)

While the civilian run government is still operating without strong leadership after President Collor's impeachment¹², the military continue to be one of the best organized and stable institutions in Brazil along with the Catholic Church. According to the information gathered from interviews with members of the armed forces, the military do not appear to be interested in orchestrating a coup. As

¹²) In October, 1993, President Franco offered to resign if the Brazilian Congress were willing to schedule early elections. He has not been an active president, holding an average of one Cabinet meeting every three months and only one scheduled news conference in the past year. (Brooke, Oct. 21, 1993, p. A9)

mentioned above, nevertheless, a group of mid-level officers and businessmen in the fall, 1993, tried to persuade President Franco of orchestrating a Fujmori-type government takeover with the help of the military. President Franco, supported by his three military ministers, is reported to have denied their request (Jornal do Brasil, Jan. 6, p. 1). However, the military can take advantage of the disorder in the government to continue with their agenda without civilian oversight.

The military officers whose depositions were taken during the Congressional investigation into the parallel program claimed that they only intended to develop the capability to build a nuclear weapon and did not plan to build an actual bomb. (see the Final Report of the Parliamentary Commission on the Investigation into the Parallel Program, Dec. 14, 1990) Both the interviews and the results of the questionnaire do not appear to indicate that there has been any change in military thinking since that time.

Other groups mentioned by the respondents to have some level of power in Brazil are multi-nationals, bureaucrats, and the media. This study did not include multi-nationals but one could hypothesize that leaders of multi-national corporations would be primarily interested in international trade and not supportive of nationalistic tendencies and status symbols like nuclear weapons technology.

Bureaucrats, as such, were not included in the study.

However, some government bureaucrats connected with nuclear policy areas like the Ministry of Science and Technology and CNEN, the National Commission on Nuclear Energy, were included in the research. These bureaucrats answered some of the questions in a pro-nuclear manner.

The media has the power to bring issues before the public and shape public opinion by when and what it decides to print or broadcast. The media played an important role in exposing the corruption scandals that ultimately brought about President Collor's impeachment. Members of the media expressed in the interviews that the press and media in general now are free from government censorship and are actively involved in overseeing the government. In this study members of the media were mixed in their policy thinking on nuclear issues. Their beliefs on nuclear issues would most likely be reflected in their journalism. As a group, then, their influence on public opinion would come from varying points of view. This could create a basis for an open dialogue on these issues.

The last groups mentioned by the respondents are middle class technocrats, intellectuals, and the people. This covers just about everybody else. This is an elite study and, therefore, the general public was not included in the research. However, notably missing from the power groups mentioned by the elites in the study is the Church. The Church is a major institution in Brazil and played an

important role in pressing for democratization. (Della Cava, in Stepan 1989, p. 143) However, the Church is not perceived as playing a power role in Brazilian politics today. Riordan Roett explains:

By the March 1985 inauguration of a democratic government, Catholic groups had lost part of their political impact, both as a result of their own political ingenuousness and of the consolidation of a traditional Brazilian pattern of elitist style politics. . . . Thus, the Church at the beginning of the 1990s appeared to have been sidelined in its efforts to spur social and political change in Brazil, in part because of the political climate in the country and in part because of the external ecclesiastical challenges facing it. (Roett, 1992, p. 105)

In this study, members of the Church who participated in the research demonstrate a belief system which does not emphasize power and status and does not support nuclear policy. Their absence from the centers of power weakens the position of a anti-nuclear belief system. If the Church were to take a stand on nuclear policy, it could make a difference, but according the priests who were interviewed this is not a priority.

This study also includes artists and environmentalists which were not mentioned by the elites as being in the power circle. Artists, like the Church, played an active role in organizing protests against the military regime (Fernandes, 1985), but today they do not seem to be playing an active political role (interview #29). Environmentalists are also included in this study but were not mentioned by elites as a major source of power. Environmentalists are active in Brazil

but have a specific agenda, which includes an anti-nuclear policy. Pressure from environmentalists would have to take the form of mass demonstrations or through connections with more powerful elites in policy making positions.

IV. MILITARY THINKING AND THE BRAZILIAN MILITARY

A. The Brazilian Military and National Security

As was discussed in chapter two, the Brazilian military is not only held responsible for defense against external threats, but is also held responsible for the maintenance of internal order. This is still written in the new Constitution completed in 1988. During the military rule in Brazil from 1889 to 1894, the "armed forces assumed the position of guardians of the republic, a position that was confirmed in the Constitution of 1891 and in succeeding documents." (Roett, 1992, p. 79) Internal order is a part of the military's legitimate political domain. The military is given the task of defending the "nation of people" (interview #53) and not necessarily a particular government. Roett explains the rationale behind the 1964 coup:

By 1964, the armed forces came to believe, that they possessed a constitutional mandate to remove Goulart from office. The constitutions of 1891, 1934, and 1946 stated that the military existed as a national institution with the responsibility of maintaining public order and guaranteeing the normal functioning of three branches of government. But the constitutions also stipulated that while the military was subordinate to the chief executive, its obedience was required only when the president acted within the limits of the law. In the final analysis, the military held the

discretionary power to determine whether the chief executive was acting within constitutional limits. (Roett, 1992, p. 94)

If there is a threat to the nation, even economic threat, according to this theory, the military would have the right to take over the government to save the nation. While many Brazilians do not agree with this view of the military's function, this definition of the military's role is still a part of the Brazilian political culture for many of Brazil's citizens. This is not a familiar concept in Western cultures. However, in Brazil as in other Latin American cultures, the military has been one of the best organized institutions along with the Church, and many people in Brazil place greater confidence in the military than in politicians and political parties.¹³

B. The Military and Nuclear Policy

Because the military still maintain control of the nuclear research facilities in Brazil, it is important to understand military thinking on nuclear policy issues. As described in chapter two, each branch of the military has its own nuclear enrichment and research projects. The navy facility which conducts its centrifuge enrichment research is

¹³) A poll done by a Brazilian research institute, IBOPE, in December, 1990, showed that in ranking the confidence that people had in various institutions in Brazil, the Church was ranked first, President Collor 3rd, the military 5th; political parties 14th, and politicians 15th. The results of the poll were obtained directly from IBOPE, Rio de Janeiro. (See above for address and phone number.)

located at the Aramar center for research in Iperó, a town outside of São Paulo. The airforce conducts research on laser enrichment at its facility, CTA, the Center for Aerospace Technology, in São José dos Campos near Sao Paulo. The army has a jet nozzle enrichment facility at Resende near Rio de Janeiro and a gas graphite enrichment research project at CETEX, Centro Tecnológico do Exército, in Guaratiba outside Rio, which plans to produce small quantities of plutonium. A test site with two underground wells for detonating nuclear explosions was built at the Military Geographic Center, CGM, at Serra do Cachimbo in the State of Pará. (Final Report of the Parliamentary Commission on the Investigation into the Parallel Program, 1990) The Cachimbo site is run by the airforce but is used by all branches of the military for testing.

To date the only government oversight of these military projects is conducted by CNEN, the National Commission for Nuclear Energy. CNEN was formed by the military during the years of dictatorial rule to administer the nuclear power program, develop nuclear weapons capability, and to hold secret bank accounts to fund the projects. [See the Final Report of the Parliamentary Commission to Investigate the Parallel Program (CPI).] Those who oppose the project question CNEN's ability to inspect and oversee these research and development facilities. (See the the Report by the Brazilian Physics Society, Sociedade Brasileira de Física.)

Several people who were interviewed explain how the military think. A journalist who writes on politics puts it this way:

There was a time when the military wanted the bomb as a symbol of being an important country, just like the US or the Soviet Union. It is a matter of military logic and they are not going to stop thinking in this manner.(interview #24)

Another journalist for a different paper also states:

The navy is very frustrated because it does not have the modern technology that it wants. They will continue to put pressure on to gain this technology. It is the way the military thinks. It is their life. In their way of thinking modern warfare is with the use of nuclear technology. Otherwise, you might as well be throwing stones. The Gulf War demonstrated what modern warfare is all about, high tech. The Brazilian military now feel useless and feel they must acquire modern technology to regain their status. That is their plan. Their position is to continue with nuclear research. (interview #20)

A nuclear physicist says that the bomb is wanted for:

. . . prestige, the image it creates to the outside world. . . . [nuclear research] will continue because there are those who want it and they will find a way to keep going. It is more a thing of the navy. (interview #4)

A social scientist who studies the military explains:

It is mainly prestige. Nuclear weapons are a symbol of technological advancement. . . . it is something that is in the heads of the military. It is the way they think. And it is a matter of nationalism, patriotism. There are plenty of people outside the military who think that way, too.

In a study conducted by Milton Rokeach on college students to test for levels of dogmatism, a career follow-up study showed that those who scored the highest in terms of closed mindedness "more frequently entered the military and commercial careers of an administrative nature." Rokeach, 1960, p. 346) It may be that people with certain patterns of thinking and belief systems seek out the military and business administration as careers. The consistency within the military thinking found in this study may reflect not only military thinking as such but also the belief systems of those who seek the military initially as a career. The belief systems of military aspirants and the belief system of military institutions are probably mutually reinforcing.

Brazilians who follow these issues seem to be aware of military thinking and the military's ability to implement that thinking at least in the past. How that impacts on the future is still not clear. Former Minister of the Navy, Admiral Maximiano da Fonseca, who was questioned under oath during the Congressional investigation of the parallel program said that "to build an atomic bomb would be 'stupid.' But he defended the idea that the program should be open to all interests, with the objective being to demonstrate that Brazil possesses the equipment and the technology to produce it, when necessary." (Final Report, 1990, p. 9) He advocates developing the capacity to build the bomb without actually doing it, but to be ready to build it when necessary. The

military and some others who were interviewed still support "mastering the nuclear cycle." There does not seem to be any technical difference between mastering the nuclear cycle and developing the capability to build the bomb.

In an interview in February, 1992, General Lepesqueur, the director of the army's nuclear project at CETEX, admitted that "in nuclear research which seeks the capacity to work towards peaceful objectives, one also develops the ability to achieve military objectives." (Caldas, 1992) The question which could be asked of Brazil's leaders is: If Brazil has no military intentions for its nuclear research, why is the military still in charge of it? Will civilian oversight make any difference if the military still runs the projects?

V. IMPLICATIONS FOR NON-PROLIFERATION

A. The Treaties

Brazil and Argentina are still not parties to the Non-Proliferation Treaty, claiming that the agreement is discriminatory. Seventy percent of the sample said that Brazil should sign the NPT. However, from responses to the interviews and the questionnaire, many government and most (5 out of 6) military officials oppose becoming a party to the agreement. With such strong military opposition and a level of opposition in the government, it does not look likely that Brazil would join the NPT in the near future. (Spector, 1990; Goldemberg, 1990) While it looks like Brazil may put the

Treaty of Tlatelolco into effect, the Treaty still has the clause that allows the development of nuclear fissile material for peaceful explosions.

Responses to the question on whether the nuclear powers should be trusted not to attack Brazil with a nuclear weapon, show that 59% of the sample do not believe that the nuclear powers should be trusted. Thirty-five percent of the group believe that nations can be trusted to abide by international agreements; 24% believe they can be equally trusted or not trusted; and 41% feel nations cannot be trusted to abide by agreements. Trust in the nuclear powers or agreements with other nations does not appear to be very strong, even though the group in general supports signing the NPT. With this level of ambivalence and with the military reasserting their influence, those who oppose the agreement would probably prevail.

B. Controls on Exports of Nuclear Materials to Brazil:

Controls placed on the export of nuclear material and technology may not affect Brazil at this point in its nuclear development. The Nuclear Suppliers Group, an informal group of 27 nations, in April of 1992 extended its export controls to include industrial technologies which have nuclear applications. (Spector, 1992, p. 24) These measures may slow down the proliferation process, but Brazil has already acquired, or developed indigenously with the help of Germany,

the necessary technology and is unlikely to be affected by these new measures.

C. Brazil as a Proliferator

The sale of nuclear material and technology by Brazil to other non-nuclear nations is also an important issue. In 1981 during the military regime in Brazil, 8 tons of uranium were secretly sold to Iraq by the Brazilian military. (Fullgraf, 1988, p. 156) Also, a number of Brazilian engineers were working in Iraq until shortly before the Gulf War under the direction of Hugo Oliveira Piva, a retired Brazilian general who had been the head of the secret nuclear parallel program. After the Gulf War, quantities of Brazilian produced uranium dioxide (UO₂) were found in Iraq by the United Nations inspection team. (8th UN-IAEA special report)

About 3/4 of the sample do not support the sale of nuclear technology by Brazil to non-nuclear nations. The 25% that do support nuclear sales are from various sectors. Neither the government nor the military are united on this issue. It seems that in this area there is considerable opportunity for the non-proliferation regime to encourage the formulation of export controls on nuclear material and technology.

D. The IAEA

Brazil's new agreement with the IAEA leaves open some doubts among experts. The agreement could exempt some nuclear

materials from accounting and controls. Article 13 of the agreement states that nuclear materials intended for use to power vehicles including submarines need not undergo accounting procedures (Redick, 1992). The enrichment technology for reactor fuel used in propulsion is the same as the technology used to enrich to the weapons-grade level. Both Argentina and Brazil have devoted a significant portion of their nuclear research to submarine propulsion and Brazil's controversial facility, Aramar, has been precisely involved in that activity. Inspections at Aramar are critical to the control of the development of nuclear weapons grade material. Even if the Congress approves the agreement, it would be essential that Aramar undergo thorough inspections and accounting procedures if the non-proliferation community is to be assured that Brazil's program is completely safeguarded.

Doubts about IAEA's ability to detect clandestine activities in the past and particularly in Iraq are also a consideration. The IAEA is under tremendous pressure with its work in Iraq, the failure of inspection efforts in North Korea, the breakup of the Soviet Union, and the thousands of nuclear warheads which now exist in unstable political situations. Furthermore, the IAEA has continued to experience chronic shortfalls in its budget. In 1992 there was \$60 million budgeted for safeguards. Despite its additional responsibilities it is still held to a zero-growth budget. (Congressional Research Service Report, March 1993, p. 8)

E. A Brazilian Inspection Team

The Brazilian Physics Society has suggested in a report submitted by their Commission on the Nuclear Question (A Viabilidade de Enriquecer Uranio no Brasil em Grau para Bomba e o Projeto Conceitual de um Explosivo Nuclear, 1991) that a Brazilian team of trained professionals answering to the Congress be assigned to analyze data and inspect the nuclear installations.¹⁴ Such a team might include scientists, environmentalists, and concerned local citizens living around the facilities who can monitor activities on a regular basis. A local organization of mayors and citizens living in the region surrounding Aramar has called for civilian inspections of the Aramar facility and already carry on their own informal watch over the facility.¹⁵ This local system of inspections and oversight by credible and concerned parties would certainly add to a system of oversight which included IAEA periodic inspections.

F. Brazil's Needs

However, all this does not address the perceived needs and concerns expressed by those Brazilians who advocate a

¹⁴) see Appendix for a translation of the proposal by the Brazilian Physics Society for a Brazilian team of inspectors.

¹⁵) The local organization located in the region near Aramar is called the Conselho Regional Acompanhamento Fiscalizacao Aramar, or CRAFA. (Regional Council for the Inspection of Aramar) address: Rua Monsenhor Soares, 251; CEP.:18200, Itapetininga, SP.

nuclear weapons capacity. Brazilians want to be included in First World dialogue and trade. Brazil needs to be assured that nuclear states have no intentions of attacking or "blackmailing" Brazil, concerns which came out in the study. The First World could make a greater effort to invite and encourage Brazil to become involved in other means of advanced technology that would offer the same level of prestige but would not threaten proliferation. Greater confidence in the nuclear powers could be gained by Brazilians through the continued reduction of nuclear arsenals already begun by the US and Russia. The remaining nuclear powers would show good faith by joining in the disarming of nuclear weapons systems. The signing of a comprehensive test ban by the five would also add a great deal to the credibility of non-proliferation efforts.

Greater involvement in the United Nations might offer Brazil global recognition and prestige. Brazil could be encouraged to participate in high profile peacekeeping operations and offer logistical support. This could bring Brazil into a global dialogue with the great powers that would ameliorate a sense of isolation that some Brazilians seem to have. As a regional power, Brazil could be invited to become a permanent member of the Security Council when the UN begins to re-evaluate the legitimacy and credibility of that body in the changing world environment.

G. Concluding Comments:

In conclusion, the present research reveals that there are patterns of beliefs regarding prescriptions for behavior on the importance of power, status, and competition or cooperation as well as beliefs about moral considerations. These belief systems correlate significantly with policy thinking and preference on nuclear issues. While people seem to have beliefs which constitute a description of the world, these beliefs do not hold up substantially across different spheres of thought and do not correlate significantly with policy thinking.

Importantly for nuclear policy in Brazil, this study shows that military thinking is deeply imbedded in beliefs about prescriptions for behavior which include a high value for power, competition, and status. These beliefs tend to be consistent across several spheres of thought demonstrating that are tenacious and pervasive. Worldview and changes in the world do not appear to affect policy thinking the way that beliefs about power, status, and competition do. Those whose belief systems do not place such importance on power, status, and competition and who do believe that moral considerations are important would appear to support a different policy on nuclear issues than the military. If the Brazilian people want their government to follow a non-nuclear weapons policy, an oversight team could be constituted from non-military experts, those who have no vested interest in the projects,

and individuals and representatives of groups that fit the Type A* profile described in this study.

APPENDIX

Jean Krasno
April 17, 1991

The Role of Belief Systems
in Shaping Nuclear Weapons Policy Thinking
in Brazil

Questionnaire

INTERNATIONAL POLITICAL BELIEFS

I. Conflict/Harmony

1. Is the nature of international politics more one of harmony or more one of conflict?

Harmony	Conflict
1-----2-----3-----4-----5-----6-----7-----8-----9	

2. Human nature being what it is, will there always be war and conflict or will harmony emerge as the normal state of affairs?

Harmony	Conflict
1-----2-----3-----4-----5-----6-----7-----8-----9	

3. In looking at conflict or harmony internationally, is it necessary to take into account different regions of the world or does the same basic rule of human nature apply overall?

Regional differences	Same over all
1-----2-----3-----4-----5-----6-----7-----8-----9	

II. Trust

4. Should nations be trusted to abide by agreements or should they not be trusted?

Trusted	Not trusted
1-----2-----3-----4-----5-----6-----7-----8-----9	

III. Self-esteem

5. Is it important for nations to demonstrate their strengths to the rest of the world?

Important	Unimportant
1-----2-----3-----4-----5-----6-----7-----8-----9	

6. Should nations always maintain a strong sense of national pride?

Strong pride		Strong Pride
necessary		
unnecessary		
---	1----	2-----3-----4-----5-
---	6-----7-----8-----9	

IV. Anxiety/Security

7. In the international arena are nations generally friendly or threatening to each other?

Friendly		Threatening
1----	2-----3-----4-----5-----6-----7-----8-----9	

8. What portion of a nation's expenditures should be devoted toward national security?

Little or no expenditure		Large expenditures
1----	2-----3-----4-----5-----6-----7-----8-----9	

V. Control/Chance

9. Can national and international leaders control global events or does chance make events uncontrollable?

Control		Chance
1----	2-----3-----4-----5-----6-----7-----8-----9	

VI. Power

10. How important is power in international politics?

Important		Unimportant
1----	2-----3-----4-----5-----6-----7-----8-----9	

11. Is military strength the most important source of power or are economic resources more important?

Military		Economic
1----	2-----3-----4-----5-----6-----7-----8-----9	

12. Do you believe that it is essential for political leaders to always negotiate from a position of military strength?

Essential		Not Essential
1----	2-----3-----4-----5-----6-----7-----8-----9	

VII. Moral

13. In pursuing national goals to what extent should leaders be guided by moral considerations?

Completely guided Not at all guided
 1-----2-----3-----4-----5-----6-----7-----8-----9

VIII. Competition/Cooperation

14. On a geopolitical level how much should nations compete with other nations?

Compete a lot Not Compete
 1-----2-----3-----4-----5-----6-----7-----8-----9

15. Can leaders achieve national goals better through competition or through cooperation with other countries?

Competition Cooperation
 1-----2-----3-----4-----5-----6-----7-----8-----9

IX. Zero-sum/Collective Bargaining

16. In dealing with an opponent should one assume that what one side wins the other side must lose, or should one assume that there is mutual gain through cooperative bargaining?

Mutual gain What one side wins
the other side loses
 1-----2-----3-----4-----5-----6-----7-----8-----9

17. Is it your belief today that the "enemy" is other nations or is it more economic, social, and ecological problems?

Nations Other problems
 1-----2-----3-----4-----5-----6-----7-----8-----9

PERSONAL BELIEFS

I. Conflict/Harmony

18. Do you believe that the world is essentially harmonious or conflictual?

Harmony conflict

VI. Power

26. In relationships between people is it important to maintain power?

Important Unimportant
 1-----2-----3-----4-----5-----6-----7-----8-----9

27. To get what people want or need is it necessary to hold some kind of leverage?

Necessary Unnecessary
 1-----2-----3-----4-----5-----6-----7-----8-----9

28. Is power necessary to get what people need?

Necessary Unnecessary
 1-----2-----3-----4-----5-----6-----7-----8-----9

VII. Moral

29. In making decisions to what extent should people be guided by moral considerations?

Completely guided Not at all guided
 1-----2-----3-----4-----5-----6-----7-----8-----9

VIII. Competitive/Cooperative

30. Is life generally a competition to get what people need or can everybody get what they need through cooperation?

Competition Cooperation
 1-----2-----3-----4-----5-----6-----7-----8-----9

IX. Zero-sum/Collective bargaining

31. Can compromise and bargaining bring gains for both sides or does one side have to win and the other lose?

Gains for both sides What one side wins
the other side loses
 1-----2-----3-----4-----5-----6-----7-----8-----9

BRAZIL'S POLITICAL ENVIRONMENT

I. Conflict/Harmony

32. Is Brazil's regional political environment harmonious or conflictual?

Harmonious Conflictual
1----2----3----4----5----6----7----8----9

33. In recent years do you think that Brazil's relations with other nations is best characterized by harmony or conflict?

Harmony Conflict
1----2----3----4----5----6----7----8----9

II. Trust

34. Should Brazil's leaders trust the neighboring countries in the region?

Trust Not trust
1----2----3----4----5----6----7----8----9

35. Should Brazilian leaders trust the Great Powers not to violate Brazil's interests?

Trust Not trust
1----2----3----4----5----6----7----8----9

36. Can Brazilian leaders trust other nations to abide by international agreements?

Trust Not trust
1----2----3----4----5----6----7----8----9

III. Self-esteem

37. Is it important for Brazil to demonstrate its strengths and achievements to the rest of the world?

Important Unimportant
1----2----3----4----5----6----7----8----9

38. Should Brazilian leaders maintain a sense of national pride for Brazil?

Pride important Pride unimportant
1----2----3----4----5----6----7----8----9

IV. Anxiety/Security

39. Are Brazil's neighbors in the region generally

friendly or threatening?

Friendly Threatening
 1-----2-----3-----4-----5-----6-----7-----8-----9

40. Do Brazilians feel secure or anxious in their relations with nations outside the region, for example, the major powers?

Secure Anxious
 1-----2-----3-----4-----5-----6-----7-----8-----9

41. What portions of Brazil's expenditures should Brazil spend on military security against external aggression?

Little or no expenditures Large expenditures
 1-----2-----3-----4-----5-----6-----7-----8-----9

V. Control/Chance

42. Can Brazil's leaders control events so that they can get what Brazil needs or are events up to chance?

able to control up to chance
 1-----2-----3-----4-----5-----6-----7-----8-----9

43. How much control do outside sources have over Brazil?

a lot of Control No control
 1-----2-----3-----4-----5-----6-----7-----8-----9

VI. Power

44. How important is power to Brazilian politics?

Important Unimportant
 1-----2-----3-----4-----5-----6-----7-----8-----9

45. Is military strength the most important source of power for Brazil or are there other more important sources?

Military strength Other sources
 1-----2-----3-----4-----5-----6-----7-----8-----9

46. How important is it for Brazil to demonstrate its power to the rest of the world?

Important Unimportant
 1-----2-----3-----4-----5-----6-----7-----8-----9

47. How important is it for Brazil to become a major world power?

Important Unimportant
1----2----3----4----5----6----7----8----9

48. How important is it for Brazil to maintain a status of power in Latin America?

Important Unimportant
1----2----3----4----5----6----7----8----9

VII. Moral

49. To what extent should Brazil's leaders be guided by moral considerations in the way they set and carry out goals?

Completely guided Not at all guided
1----2----3----4----5----6----7----8----9

VIII. Competition/Cooperation

50. To what extent should Brazil and Argentina be political rivals?

Strong rivals Not rivals
1----2----3----4----5----6----7----8--
--9

51. Is it important for Brazil to be competitive with Argentina economically?

Important Unimportant
1----2----3----4----5----6----7----8----9

52. To what extent should Brazil be involved in cooperative regional and international endeavors?

Very involved Not involved
1----2----3----4----5----6----7----8----9

IX. Zero-sum/Cooperative Bargaining

53. How much are Brazil's problems due to conflictual relationships with other nations and how much are they due to other causes like inflation, pollution, productivity, etc.?

Conflictual relations Other Causes
1----2----3----4----5----6----7----8----9

54. In negotiating with other nations over important issues how much should Brazil's leaders compromise

or how much should they hold the line?

Compromise Hold the Line
 1-----2-----3-----4-----5-----6-----7-----8-----9

Anxiety/Security

55. Are there reasons for Brazilian leaders to fear internal threats to Brazil's security? Yes/No
 If the answer is yes, please explain what those internal conditions are.

NUCLEAR WEAPONS IN BRAZIL

I. General Nuclear Policy Questions

56. Should Brazil have nuclear weapons? Yes/No
 Explain.
57. Should Brazil continue its research on weapons grade nuclear fuel? Yes/No
58. Should Brazil continue its research on nuclear fuel for peaceful ends? Yes/No
59. Should nuclear fuel research continue at the facilities which do not undergo inspection by the International Atomic Energy Agency? Yes/No/I don't know
60. With Brazil's present economic problems can it afford to build nuclear weapons? Yes/No
61. Did you support a nuclear weapons capability when Brazil was in better economic shape a few years ago? Yes/No
62. Should Brazil sell nuclear technology to other non-nuclear nations? Yes/No
63. Should Brazil build a nuclear powered submarine? Yes/No
64. Have you expressed your opinion on nuclear weapons in Brazil in writing or in speeches or are you a member of a group which supports one side or the other on this issue? Yes/No Explain.

65. Should Brazil sign the Non-Proliferation Treaty?
Yes/No/I don't know
66. Should all Brazil's nuclear facilities be placed under inspections by the International Atomic Energy Agency?
Yes/No/I don't know
67. Should Brazil put into effect the Treaty of Tlatelolco which designates Latin American as a nuclear weapons free zone?
Yes/No/I don't know

NUCLEAR WEAPONS IN BRAZIL -- CONCEPTS

I. Conflict/Harmony

68. In today's world which is witnessing an end to the Cold War, are nuclear weapons needed to insure peace?

Needed Not needed
1-----2-----3-----4-----5-----6-----7-----8-----9

II. Trust

69. In your opinion should Brazil trust that the nuclear powers would never attack Brazil with nuclear weapons?

Should trust Should not trust
1-----2-----3-----4-----5-----6-----7-----8-----9

70. Are the signatories to the Non-Proliferation Treaty living up to the measures in the Treaty?

Living up to Not living up to
1-----2-----3-----4-----5-----6-----7-----8-----9

III. Self-esteem

71. How important is it for Brazil to acquire a nuclear weapon to show it has obtained world power status?

Important Unimportant
1-----2-----3-----4-----5-----6-----7-----8-----9

IV. Anxiety/Security

72. Does Brazil need nuclear weapons to maintain its national security?

Needed Not needed
 1-----2-----3-----4-----5-----6-----7-----8-----9

73. Does the Brazilian military need nuclear weapons to secure its position of status?

Needed Not needed
 1-----2-----3-----4-----5-----6-----7-----8-----9

74. If Brazil had nuclear weapons would that make its neighbors more or less secure?

More secure Less secure
 1-----2-----3-----4-----5-----6-----7-----8-----9

V. Control/Chance

75. Would the capability to build nuclear weapons give Brazil greater or lesser control over its ability to get what it needs?

Greater control Lesser control
 1-----2-----3-----4-----5-----6-----7-----8-----9

VI. Power

76. Do nuclear weapons give nations added power?

Added power No added power
 1-----2-----3-----4-----5-----6-----7-----8-----9

77. Would having a nuclear weapon give Brazil more power?

More power Not more power
 1-----2-----3-----4-----5-----6-----7-----8-----9

VII. Moral/Practical

78. Is having nuclear weapons a moral issue or not a moral issue?

Moral Not moral
 1-----2-----3-----4-----5-----6-----7-----8-----9

VIII. Competition/Cooperation

79. If Argentina acquired nuclear weapons how important would it be for Brazil to have them, too?

Important Unimportant

1-----2-----3-----4-----5-----6-----7-----8-----9

80. How important is it for Brazil and Argentina to exchange on-site inspections of all nuclear facilities including those which do nuclear weapons research?

Important Unimportant
 1-----2-----3-----4-----5-----6-----7-----8-----9

IX. Zero-sum/Collective Bargaining

81. Would having nuclear weapons offer Brazil an advantage in its negotiations with other nations?

Advantage No advantage
 1-----2-----3-----4-----5-----6-----7-----8-----9

82. Are you a member of a party? Yes/No Which one?

O Papel dos Sistemas de Crenças
na Formação do Pensamento Político
no Brasil

Questionário

Crenças Políticas Internacionais

1. A política internacional é, por natureza, mais harmoniosa ou mais conflituosa?
Harmoniosa Coflituósa
1-----2-----3-----4-----5-----6-----7-----8-----9
2. Na ordem natural humana, terá sempre guerras e conflitos ou surgirá harmonia normalmente?
Harmonia Conflito
1-----2-----3-----4-----5-----6-----7-----8-----9
3. Para perceber "conflito" e "harmonia" entre as pessoas no mundo, é preciso que levemos em conta regiões diferentes ou a mesma regra se aplica para o todo?
Regiões diferentes Mesma para todo
1-----2-----3-----4-----5-----6-----7-----8-----9
4. Devem os líderes governamentais ter confiança que os outros países cumpram seus acordos, ou não?
Confiança Desconfiança
1-----2-----3-----4-----5-----6-----7-----8-----9
5. É importante que os países demonstrem suas forças para o mundo?
Importante Desimportante
1-----2-----3-----4-----5-----6-----7-----8-----9
6. Devem os países sentir forte orgulho nacional?
Orgulho necessário Orgulho desnecessário
1-----2-----3-----4-----5-----6-----7-----8-----9
7. No cenário internacional geralmente os países são amigáveis ou ameaçadores?
Amigáveis Ameaçadores
1-----2-----3-----4-----5-----6-----7-----8-----9
8. Quanto de seu orçamento deve um país despende para sua segurança nacional?
pouco ou nada Muito
1-----2-----3-----4-----5-----6-----7-----8-----9
9. Podem os líderes nacionais e internacionais controlar os eventos mundiais, ou devem contar com a sorte?
Líderes controlam Sorte
1-----2-----3-----4-----5-----6-----7-----8-----9

10. Qual a importancia do "poder" na politica internacional?
 Importante Desimportante
 1----2----3----4----5----6----7----8----9
11. A fonte de poder mais importante e a forza militar ou sao as fontes economicas?
 Forza militar Fontes economicas
 1----2----3----4----5----6----7----8----9
12. Voce acredita que a forza militar e fator determinante do suceso das negociacoes politicas?
 Fator determinante Nao fator determinnante
 1----2----3----4----5----6----7----8----9
13. Para realizar objetivos nacionais, os lideres devem ser guiados por consideracoes morais?
 Completamente guiado Nao guiado
 1----2----3----4----5----6----7----8----9
14. No nivel geopolitico, ate que ponto devem os paises competir com outros paises?
 Competem muito Nao competem
 1----2----3----4----5----6----7----8----9
15. Os lideres conseguem os objetivos nacionais atraves da competicao ou da cooperacao com outras paises?
 Competicao Cooperacao
 1----2----3----4----5----6----7----8----9
16. En negociacoes com um adversario devem as pessoas assumirem que para um lado ganhar o outro lado tem que perder, ou devem as pessoas assumirem que ha ganho's mutuos em negocios cooperativos?
 Ganhos mutuos O que um lado ganha o outro lado perde
 1----2----3----4----5----6----7----8----9
17. Voce acredita hoje que o "inimigo" sao os outros paises ou sao os problemas economicos, sociaes, e ecologicos?
 Paises Outros problemas
 1----2----3----4----5----6----7----8----9

Crenças Sociais

18. Voce cre que o mundo e harmonioso ou e conflituoso?
 Harmonioso Conflituoso
 1----2----3----4----5----6----7----8----9
19. Em geral, o ser humano e confiavel ou e nao-confiavel?
 Confiavel nao-confiavel

1-----2-----3-----4-----5-----6-----7-----8-----9

20. Em geral, as pessoas tem confianca em suas abilitades, ou sempre tem duvidas sobre suas capacidades?
 Confianca Duvidas
 1-----2-----3-----4-----5-----6-----7-----8-----9
21. E importante para o ser humano mostrar suas forcas as outras pessoas?
 Importante Desimportante
 1-----2-----3-----4-----5-----6-----7-----8-----9
22. Qual a importancia do orgulho para as pessoas?
 Importante Desimportante
 1-----2-----3-----4-----5-----6-----7-----8-----9
23. De um modo geral, o ser humano se sente seguro ou ansioso?
 Seguro Ansioso
 1-----2-----3-----4-----5-----6-----7-----8-----9
24. O mundo e um lugar amigavel ou ameaçador?
 Amigavel Ameaçador
 1-----2-----3-----4-----5-----6-----7-----8-----9
25. Geralmente pode o ser humano controlar sua vida ou e mais uma questao de sorte?
 Controla Sorte
 1-----2-----3-----4-----5-----6-----7-----8-----9
26. Nas relacoes pessoais, e importante manter o poder?
 Importante Desimportante
 1-----2-----3-----4-----5-----6-----7-----8-----9
27. Para conseguir o que se quer ou se precisa, e necessario se ter um trunfo?
 Necessario Nao necessario
 1-----2-----3-----4-----5-----6-----7-----8-----9
28. E necessario ter poder para o ser humano obter o que deseja?
 Necessario Nao necessario
 1-----2-----3-----4-----5-----6-----7-----8-----9
29. As pessoas devem ser guiadas por consideracoes morais em suas decisoes?
 Completamente guiada Nao guiada
 1-----2-----3-----4-----5-----6-----7-----8-----9
30. O que se precisa na vida so pode ser obtido atraves da competicao, ou pode ser conseguido atraves da cooperacao

mutua?
 Competicao cooperacao mutua
 1-----2-----3-----4-----5-----6-----7-----8-----9

31. Nos acordos, existem ganhos para ambos os lados ou e sempre que um lado ganha e o outro lado perde?
O que um lado ganha
 Ganho para ambos o outro lado perde
 1-----2-----3-----4-----5-----6-----7-----8-----9

O Cenario Politico brasileiro

32. O cenario politico brasileiro e harmonioso ou conflituoso?
 harmonioso Conflituoso
 1-----2-----3-----4-----5-----6-----7-----8-----9
33. As relacoes do Brasil com outros paises sao, no periodo mais recente, caracterizadas por harmonia ou conflito?
 Harmonia Conflito
 1-----2-----3-----4-----5-----6-----7-----8-----9
34. Devem os lideres brasileiros ter confianca nos paises vizinhos?
 Confianca Desconfianca
 1-----2-----3-----4-----5-----6-----7-----8-----9
35. Devem os lideres brasileiros ter confianca que os lideres das "Grandes Potencias" nao vao violar os interesses do Brasil?
 Confianca Desconfianca
 1-----2-----3-----4-----5-----6-----7-----8-----9
36. Podem os lideres brasileiros ter confianca que os lideres dos outros paises irao manter acordos internacionais ou nao?
 Confianca Desconfianca
 1-----2-----3-----4-----5-----6-----7-----8-----9
37. E importante que o Brasil demonstre suas forcas e seus empreendimentos para o mundo?
 Importante Desimportante
 1-----2-----3-----4-----5-----6-----7-----8-----9
38. Devem os lideres brasileiros sentir forte orgulho nacional?
 Orgulho forte Nao precisa orgulho
 1-----2-----3-----4-----5-----6-----7-----8-----9

39. Os vizinhos do Brasil são amigáveis ou ameaçadores?
 Amigáveis Ameaçadores
 1-----2-----3-----4-----5-----6-----7-----8-----9
40. Os brasileiros se sentem seguros ou inseguros nas suas relações com países fora da América Latina?
 Seguro Inseguro
 1-----2-----3-----4-----5-----6-----7-----8-----9
41. Quanto de orçamento deve o Brasil despendar em segurança militar contra agressão externa?
 Pouco ou nada Muito
 1-----2-----3-----4-----5-----6-----7-----8-----9
42. Os líderes do Brasil podem controlar os eventos, para conseguir o que o Brasil precisa ou são os fatores de sorte?
 Podem controlar Sorte
 1-----2-----3-----4-----5-----6-----7-----8-----9
43. Qual é o controle sobre o Brasil das forças de fora?
 Muito controle Nenhum controle
 1-----2-----3-----4-----5-----6-----7-----8-----9
44. Qual a importância do "poder" nas relações políticas brasileiras?
 Importante Desimportante
 1-----2-----3-----4-----5-----6-----7-----8-----9
45. A força militar é a fonte de poder mais importante para o Brasil ou existem outras fontes de poder mais importantes?
 Força militar Outras fontes
 1-----2-----3-----4-----5-----6-----7-----8-----9
46. É importante que o Brasil demonstre o seu poder para o mundo?
 Importante Desimportante
 1-----2-----3-----4-----5-----6-----7-----8-----9
47. Qual a importância para o Brasil em se tornar uma grande potência?
 Importante Desimportante
 1-----2-----3-----4-----5-----6-----7-----8-----9
48. Qual a importância para o Brasil em manter o poder na América Latina?
 Importante Desimportante
 1-----2-----3-----4-----5-----6-----7-----8-----9
49. Em que medida os líderes brasileiros devem ser guiados por considerações morais?

- Completamente guiado Nao guiado
 1----2----3----4----5----6----7----8----9
50. Em que medida Brasil e Argentina devem ser adversarios politicos?
 Adversarios fortes Nao adversarios
 1----2----3----4----5----6----7----8----9
51. E importante para o Brasil competir com a Argentina em assuntos economicos?
 Importante Desimportante
 1----2----3----4----5----6----7----8----9
52. Em que medida o Brasil deve se envolver nos esforcos cooperativos regionais e internacionais?
 muito envolvido Nao envolvido
 1----2----3----4----5----6----7----8----9
53. Em que medida os problemas do Brasil estao ligados as relacoes conflituosas com outros paises ou ligam-se mais a questoes como: inflacao, poluicao, producao, etc.?
 Relacoes conflituosas Outras causas
 1----2----3----4----5----6----7----8----9
54. Nas negociacoes com outros paises acerca de assuntos importantes, quanto devem os lideres brasileiros comprometer os interesses nacionais, e quanto devem nada comprometer?
 Comprometer Nada comprometer
 1----2----3----4----5----6----7----8----9
55. Os lideres brasileiros tem razao em temer pela segurancia interna do pais? Sim/Nao Se a resposta e sim, por favor explica que condicoes internas?

Armas Nucleares no Brasil

56. Deve o Brasil ter armas nucleares? Sim/Nao Porque?
57. Deve o Brasil coniuar sua pesquisa no material nuclear explosivo para armas nucleares? Sim/Nao
58. Deve o Brasil continuar sua pesquisa no combustivel para fins pacificos? Sim/Nao

59. Deve a pesquisa do material nuclear explosivo para armas nucleares continuar a ser desenvolvida em usinas que nao sao inspecionadas pela a Agencia Internacional de Energia Nuclear? Sim/Nao/Nao sei
60. Os problemas economicas enfrentados pelo Brasil agora, podem arcar com a despesa de construir armas nucleares? Sim/Nao
61. Voce apoiou a construcao de armas nucleares no pais quando a economia do Brasil estava melhor? Sim/Nao
62. Deve o Brasil vender tecnologia nuclear para outros paises que ate agora nao tem armas nucleares? Sim/Nao
63. Deve o Brasil construir um submarino nuclear? Sim/Nao
64. Voce expressou sua opiniao sobre armas nucleares no Brasil em algum abaixo-assinado ou em discursos? E voce socio de algum grupo que sustenta um dos lados? Sim/Nao Explica.
65. Deve o Brasil assinar o "Tratado de Nao-Proliferacao"? Sim/Nao/Nao sei
66. Devem todas as usinas nucleares sofrer inspecao da Agencia Internacional de Energia Nuclear? Sim/Nao/Nao sei
67. Deve o Brasil por em acao o "Tratado de Tlatelolco" que designa a America Latina como uma zona livre das armas nucleares? Sim/Nao/Nao sei
68. O mundo de hoje, que testemunha o fim da "Cold War", precisa de armas nucleares para assegurar a paz?
Precisa Nao precisa
1----2----3----4----5----6----7----8----9
69. Em sua opiniao, deve o Brasil confiar que as grandes potencias nunca o atacariam com armas nucleares?
Deve confiar Nao deve confiar
1----2----3----4----5----6----7----8----9
70. Os paises que assinaram o "Tratado de Nao-Proliferacao" vivem de acordo com as medidas ali estabilicidas?
Vivem de acordo Nao vivem de acordo
1----2----3----4----5----6----7----8----9
71. Voce acha que para o Brasil ser considerado uma potencia mundial e importante ter uma arma nuclear?
Importante Desimportante

1-----2-----3-----4-----5-----6-----7-----8-----9

72. O Brasil precisa de armas nucleares para manter sua
seguranca nacional?
Precisa Nao precisa
1-----2-----3-----4-----5-----6-----7-----8-----9
73. O Exercicio brasileiro precisa adquirir armas nucleares
para assegurar seu status dentro do pais?
Precisa Nao precisa
1-----2-----3-----4-----5-----6-----7-----8-----9
74. Se o Brasil tivesse armas nucleares, os seus vizinhos se
sentiriam mais ou menos seguros?
Mais seguros Menos seguros
1-----2-----3-----4-----5-----6-----7-----8-----9
75. A capacidade de construir armas nucleares daria ao Brasil
mais ou menos controle sobre o que precisa?
Mais controle Menos controle
1-----2-----3-----4-----5-----6-----7-----8-----9
76. Armas nucleares dao aos paises poder adicional?
Poder adicional Nao poder adicional
1-----2-----3-----4-----5-----6-----7-----8-----9
77. Se o Brasil tivesse armas nucleares, traria mais poder
para o pais?
Mais poder Nao mais poder
1-----2-----3-----4-----5-----6-----7-----8-----9
78. Obter armas nucleares e ou nao uma questao moral?
Questao moral Nao questao moral
1-----2-----3-----4-----5-----6-----7-----8-----9
79. Se a Argentina adquirisse armas nucleares qual a
importancia do Brasil tambem adquirir?
Importante Desimportante
1-----2-----3-----4-----5-----6-----7-----8-----9
80. Qual a importancia para Brasil e Argentina em trocar
inspecoes nas usinas nucleares, inclusive nas usinas que
fazem pesquisa de armas nucleares?
Importante Desimportante
1-----2-----3-----4-----5-----6-----7-----8-----9
81. Se o Brasil tivesse armas nucleares, isto ofereceria
vantagens nas negociacoes com outros paises?
Vantagem Desvantagem
1-----2-----3-----4-----5-----6-----7-----8-----9

82. Voce e socio de algum partido? Sim/Nao Qual?

Por favor, responda as seguintes perguntas marcando o numero mais perto da palavra que expressa melhor o que você pensa. Você pode marcar entre os dois pontos, se achar que e uma mistura. O numero 5 fica no meio.

Tenho muito interesse em saber como você pensa e não ha resposta certa nem errada; so a sua opinião. Eu não vou usar seu nome na pesquisa e não precisa por seu nome no questionário caso não desejar.

LIST OF ACRONYMS AND ABBREVIATIONS

ABACC - Argentine-Brazilian Agency for Accounting and Control (Portuguese: Agencia Brasileira e Argentina de Contabilidade e Controle)

ACDA - Arms Control and Disarmament Agency (A U.S. government agency in the State Department)

CETEX - Army Technology Center (Portuguese: Centro Tecnologico de Exercito)

CGM - Military Geographic Center (Portuguese: Centro Geografico Militar); located at Serra do Cachimbo in the state of Para.

CNEN - National Nuclear Energy Commission (Portuguese: Comisao Nacional de Energia Nuclear)

COPESP - Sao Paulo Center for Enrichment Research (Portuguese: Centro de Pesquisa Enriquecimento de Sao Paulo); located on the campus of the University of Sao Paulo and directed by Admiral Othon Luiz Pinheiro da Silva.

CTA - Aerospace Technology Center (Portuguese: Centro Tecnologico de Aerospacio); located in Sao Jose dos Campos; the director is Colonel Reginaldo dos Santos.

IAEA - International Atomic Energy Agency; headquartered in Vienna, Austria.

IPEN - Nuclear Energy Research Institute (Portuguese: Instituto de Pesquisa Energia Nuclear); located at the University of Sao Paulo.

NATO - North Atlantic Treaty Organization

NPT - Non-Proliferation Treaty

SAE - Secretariat (Ministry) of Strategic Affairs (Portuguese: Secretario de Assuntos Estrategico).

SNI - National Intelligence Service (Portuguese: Servico Nacional de Inteligencia); equivalent to the CIA and FBI combined.

BIBLIOGRAPHY: BELIEF SYSTEMS/BRAZIL

Abelson, R.P. (1959). Modes of resolution of belief dilemmas. Journal of Conflict Resolution 3: 342-352.

Almond, Gabriel A. and Sidney Verba, (eds.). (1980) The Civic Culture Revisited, Little Brown, Boston.

Armanet, Pilar. (1987). The Latin American Nuclear Free Zone and regional cooperation. Estudios Internacionales 77:19-38.

Albright, David. (1989). Bomb potential for South America. Bulletin of the Atomic Scientists (May).

Bacchus, Wilfred A. (1985). Long-term military rulership in Brazil: Ideological consensus and disensus 1963-1983. Journal of Political and Military Sociology 13/1:99-123.

Biasi, Renato de. (1979) A Energia no Brazil, Biblioteca do Exercicio, Rio de Janeiro.

Brigagao, Clovis. (1986). The Brazilian arms industry. The Journal of International Affairs 40/1:101-114.

Brooke, James. (1989). Rain and fires, but mostly rain, slow burning of Amazon forest in Brazil. New York Times: (Sept. 17): 22.

Brooke, James. (1990). Brazil uncovers plan by military to build atom bomb and stops it. New York Times: (October 9): A1.

Brooke, James. (1991). Brazil and Argentina join up to open their nuclear sites. New York Times: (Dec. 13).

Brooke, James. (1992). Looting Brazil. New York Times Magazine: (November 8): 30.

Brooke, James. (1993). Brazil answers inflation with cabinet shuffle. New York Times: (May 27): A9.

Brooke, James. (1993). Brazil's chief offers to quit, but is turned down. New York Times: (Oct. 21): A9.

Bulletin of the Atomic Scientists (1990). The arms race shifts to the third world: A special report. (May): 9-48.

Caldas, Suely. (1992). General admits military use for reactor. O Estado de Sao Paulo: (February 2): 1 & 12.

Cardoso, Fernando Henrique. (1977). The consumption of dependency theory in the U.S.. Latin American Research Review 12/3: 7-24.

Cardoso, Fernando Henrique. (1989). Associated-dependent development and democratic theory. In Stepan A. (ed.), Democratizing Brazil, Oxford University Press, New York.

Carneiro, Luiz Orlando. (1991). O programa nuclear da Marinha. Jornal do Brasil: Rio de Janeiro: (Jan. 24).

Chacel, Julian M., Pamela S. Falk, and David V. Fleischer. (1989). Brazil's Economic and Political Future, Westview Press, Boulder.

Congressional Research Service Report. (1993). March, p. 8.

Converse, Philip E. (1964). The nature of belief systems in mass publics. In Apter, D. (ed.), Ideology and Discontent, The Free Press, New York.

Costo, Gino F. (1989). Brazil's Foreign Policy: Toward Regional Dominance, Westview Press, Boulder.

Culaciati, Miguel J. (1988). Advantages, disadvantages of nuclear accord with Brazil. 51002024b, Joint Publication Research Service (JPRS) TND-88-012. (21 June).

DaMatta, Roberto. (1990). Carnavais, Malandros, e Heróis, 5th ed. Editora Guanabara Koogan S.A., Rio de Janeiro.

de Castro, Antonio Rubens Britto, Norberto Majlis, Luiz Pinguelli Rosa, and Fernando de Souza Barros. "Brazil's Nuclear Shakeup: Military Still in Control," Bulletin of the Atomic Scientists, May, 1989.

de Goes Leite de Barros, Ruy. (ed.), (1988). De Angra A Aramar: Os Militares A Caminho Da Bomba, the Metalurgists Union, CEDI, DESEP-CUT, and NEMI, Sao Paulo.

de Lama, George. (1989). Brazil's arms trade has U.S. worried. Chicago Tribune, (March 5) Sec. 1, p. 23.

Dewitt, David. (1987). Nuclear Non-Proliferation and Global Security, (see part III, 13, "Treaty of Tlatelolco and NPT.")

Donnelly, Warren H. (1990). Argentina, Brazil, and nuclear proliferation. a Congressional Research Service

Issue Brief; (February 13), Washington, D.C.

Dougherty, James E. and Pfaltzgraff, Robert L. Jr. (1981) Contending Theories of International Relations, New York: Harper and Row.

Dreifuss, Rene Armand. (1987). Sociedade politica armada ou forca armada societaria? In Eliezer Rizzo de Oliveira, Geraldo Lesbat Cavagnari Filho, Joao Quartim de Moraes, and Rene Armand Drefuss. (1987). As Forcas Armadas No Brasil. Rio de Janeiro, Espaco e Tempo, pp. 101-144.

Dye, David R. (undated). A developmental approach to the political style of Getulio Vargas. unpublished paper done at Stanford University.

Elkins, D.J. (1982). The nature of belief systems in issue politics. paper presented at the annual meeting of the Canadian Political Science Association, Ottawa.

Epstein, Jennifer A. and Harackiewicz, Judith M. (1992) Winning is not enough: The effects of competition and achievement orientation on intrinsic interest. Personality and Social Psychology Bulletin, April, vol 18(2):128-138.

Erickson, Kenneth. (1979). Brazil: Corporative authoritarianism, democratization, and dependency. In Wiarda, H.J., and Kline, H.F. Latin American Politics and Development, Boulder, Colo.: Westview Press, pp. 160-211.

Estado de Sao Paulo, (1983). Installation of reactor at IPEN scored. (JPRS 8711): 44.

Estado de Sao Paulo, (1992). Feb. 22, p. 3.

Evans, Peter. (1979). Dependent Development: the Alliance of Multinational, State, and Local Capital in Brazil, Princeton University Press, Princeton.

Evron, Yair. (1974) Israel and the atom: The uses and misuses of ambiguity, 1957-1967. Orbis, Winter, 17:136-143.

Falkowski, Lawrence S. (ed.), (1979) Psychological Models in International Politics, Westview Press, Boulder.

Feldman, Shai. (1982) Israeli Nuclear Deterrence, A Strategy for the 1980s, Columbia University Press, New York.

Fernandes, Rofran. (1985). Teatro Ruth Escobar, 20 Anos

de Resistencia, Global Editora, Sao Paulo.

Festinger, L. (1964). Conflict, Decision, and Dissonance, Stanford University Press, Stanford.

Final Report of the Parliamentary Commission on the Investigation into the Parallel Program. (1990). Brazilian National Congress (December 14).

Freedman, Lawrence and Virginia Gamba-Stonehouse. (1990). Signals of War, the Falklands Conflict of 1982. Faber and Faber, London and Boston.

Fullgraf, Frederico. (1988). A Bomba Pacifica, Editora Brasiliense, Sao Paulo.

Filho, Eneas Macedo. (1982). IPEN pode fazer hexafluoreto de uranio para usina nuclear. Jornal do Brasil, (July 5).

Friedrich, Carl J., ed. (1949) The Philosophy of Kant: Immanuel Kant's Moral and Political Writings, The Modern Library, New York.

Fromm, Erich. (1941). Escape From Freedom, Rinehart, New York.

Fromm, Erich. (1973). The Anatomy of Human Destructiveness, Holt, Rinehart, and Winston, New York.

Fung, Samuel S. (1991) The effects of power, relationships, and purpose in gaining compliance. Contemporary and Social Psychology, June, vol 15(2):44-52.

Gall, Norman. (1976). Atoms for Brazil: Danger for all. Foreign Policy 23, summer: 155-204.

Gazeta Mercantil. (1993) Government said to expand enriched uranium capability. FBIS-Lat-93-048. (March 15).

George, Alexander. (1969). The operational code: A neglected approach to the study of political leadership and decision making. International Studies Quarterly 13: 190-222.

George, Alexander. (1979). The causal nexus between cognitive beliefs and decision-making behavior: The operational code. In Falkowski, L. (ed.), Psychological Models in International Politics, Westview Press, Boulder.

George, Alexander. (1980). Presidential Decisionmaking in Foreign Policy, Westview Press, Boulder.

George, Alexander. (1992). Adapting to constraints on rational decisionmaking. In Art, R. and R. Jervis (eds.), International Politics: Enduring Concepts and Contemporary Issues, 3rd ed., Harper Collins, New York.

Glad, Betty. (1983). Black and white thinking: Ronald Reagan's approach to foreign policy thinking. Political Psychology 4: 33-74.

Goldblat, Jozef and P. Lomas. (1990). Nuclear Proliferation: An Agenda for the 1990s, (see chapter II by J. Simpson)

Goldemberg, Jose. (1990). Finance Minister discusses nuclear energy. Jornal do Brasil: (April 8).

Goldman, Etel. (undated) Brazil's nuclear program and Brazilian scientists. special paper, Univ. of Calif.

Grabendorf, Wolf. (1987). Brazil's nuclear and non-proliferation policy. Estudios Internacionales 80: 520-568.

Hepple, Leslie W. (1986). Geopolitics, generals and the state in Brazil. Political Geography Quarterly 5: (suppl.) (October), 79-90.

Herrera, Amílcar O., Clóvis Brigagao, Laymert G. Dos Santos, Luiz Pinguelli Rosa, Renato P. Dagnino, and Ricardo Arnt. (1985). O Armamentismo e o Brasil. Editora Brasiliense, Sao Paulo.

Hibbs, Mark. (1991). Brazil's military may block safeguards with Argentina. Nucleonics Week (November 28).

Hoagland, Stephen W. and Stephen G. Walker. (1979). Operational codes and crisis outcomes. In Falkowski, L. (ed.), Psychological Models in International Politics, Westview Press, Boulder.

Hollenbach, David. (1983). Nuclear Ethics; a Christian Moral Argument, Paulist Press, New York.

Holsti, Ole R. (1970). The 'operational code' approach to the study of political leaders: John Foster Dulles' philosophical and instrumental beliefs. Canadian Journal of Political Science 970 (a) 3: 123-155.

Holsti, Ole R. (1977). The 'operational code' as an approach to the analysis of belief systems. Final Report to the National Science Foundation, Grant #soc75-15368, Duke Univ.

Hopple, Gerald. (1980). Political Psychology and Biopolitics: Assessing and Predicting Elite Behavior in Foreign Policy Crisis, Westview Press, Boulder.

Inter-American Development Bank. Economic and Social Progress in Latin America, 1989 report.

Jaguaribe, Helio. (1989) Alternativas do Brasil, 3rd ed, Jose Olympio publisher, Rio de Janeiro.

Janis, I.L. and Mann, L. (1977) Decision Making: A Psychological Analysis of Conflict, Choice, and Commitment, Free Press, New York.

Jervis, Robert. (1976). Perception and Misperception in International Politics, Princeton University Press, Princeton.

Jervis, Robert. (1986). A critique of early psychological approaches to international misperception. In White, R. K. (ed.), Psychology and the Prevention of Nuclear War, New York University Press, New York, chapter 18.

Jervis, Robert. (1989). Political psychology--some challenges and opportunities. Political Psychology, 10/3 (Sept.): 481-493.

Jervis, Robert. (1992). Hypotheses on Misperception. In Art, R. and R. Jervis (eds.), International Politics: Enduring Concepts and Contemporary Issues, 3rd Ed. Harper Collins, New York.

Johnson, Loch K. (1977). Operational codes and the prediction of leadership behavior: Senator Frank Church at midcareer. In Hermann, M. (ed.), A Psychological Examination of Political Leaders, Free Press, New York, pp. 80-119.

Jones, Patrice Franko. (1990). The Brazilian defense industry in crisis. (preliminary draft of chapter 8) The Brazilian Defense Industry Westview Press, Boulder.

Jones, Rodney W. (1984). Modern Weapons and Third World Powers, Westview Press, Boulder.

Jones, Rodney W., Merlini, Pilat, and Potter. (1985). The Nuclear Suppliers and Non-proliferation: International Policy Choices, Lexington Books, Lexington, Mass. (see chapter 18 by Daniel Poneman)

Jornal Do Brazil, (1983). Nuclebras heads comments of layoffs, NUCLEP idleness. (Mar. 18):18, JPRS 81384-0023.

Jornal do Brasil. IPEN produces uranium hexafluoride on laboratory scale. (translated from Jornal Do Brazil), JPRS 81384-0018.

Kamm, Thomas. (1990). Brazilian arms experts said to upgrade Iraq's missiles. The Wall Street Journal, (August 30): A5.

Kaplan, Bert. (1961). Studying Personality Theory Cross-Culturally, Harper and Row, New York, pp. 9-90.

Katz, James. (1986). The Implications of the Third World Military Industrialization, Lexington Books, Lexington, Mass.

Keller, Bill. (1993). South Africa says it built 6 atom bombs. New York Times, (March 25): A1.

Kemper, Theodore D. (1991) Predicting emotions from social relations. Social Psychology Quarterly, Dec., vol 54(4):330-342.

Keohane, Robert O. (1977). Power and Interdependence: World Politics in Transition, Little Brown, New York.

Kessler, Richard. (1989). Peronists seek nuclear greatness. Bulletin of the Atomic Scientists, (May).

Krasno, Jean. (1992). Brazil, Argentina make it official. Bulletin of Atomic Scientists, (April): 10.

Kull, Steven. (1988). Minds At War, Basic Books, Inc. New York.

Lamb, Chris. (1984-85). Belief systems and decision making in the Mayaguez crisis. Political Science Quarterly, (winter), 99/4.

Lane, Robert. (1962). Political Ideology: Why the

American Common Man Believes What He Does, Free Press, New York.

Lane, Robert. (1973). Patterns of political belief. In Knutson, J. (ed.), Handbook of Political Psychology, Jossey-Bass, San Francisco.

Lewis, Paul. (1991) Iraq now admits a secret program to enrich uranium. New York Times, July 9, p. A1.

Leventhal, Paul L. and Sharon Tanzer. (1992). Averting a Latin American Nuclear Arms Race, St. Martin's Press, New York.

Levi, Daniel, and Holder, Elaine. Psychological factors in the nuclear power controversy. Political Psychology, 1988 (Sept) vol 9(3):445-457.

Lobato, Elvira. (1990). Buraco custou mais de US\$ 5 milhoes. Folha de Sao Paulo: (Sept. 19).

Macridis, Roy. (1989). Contemporary Political Ideologies: Movements and Regimes, Scott, Foresman, Glenview, Ill.

Malheiros, Tania. (1993). Brasil: A Bomba Oculta, Gryphus, Rio de Janeiro, Brasil.

Maslow, Abraham H. (1954). Motivation and Personality, Harper, New York.

McDonough, Peter. (1981). Power and Ideology in Brazil, Princeton University Press, Princeton.

Milhollin, Gary and Gerard White. (1990). The Brazilian bomb. The New Republic, (August 13):10,11.

Miller, Delbert C. (1983) Handbook of Research Design and Social Measurement, 4th ed. Longman Inc., New York.

Miller, Marvin. (1989). Nuclear-Powered Attack Submarines (SSN) and the Proliferation of Nuclear Weapons. a paper for a conference: "Latin American Nuclear Cooperation: New Prospects and Challenges," organized by the Nuclear Control Institute, Wash., D.C.

Moore, Mike. (1992) The Incident at Stagg Field. Bulletin of Atomic Scientists, Dec., pp. 11-15.

Morganthau, Hans and Kenneth Thompson. (1985). Politics Among Nations, 6th ed., Alfred A. Knopf, New York.

Myers, David J. (1984). Brazil: Reluctant pursuit of the nuclear option," Orbis, (winter):881-911.

Neuman, W. Russell. (1986). The Paradox of Mass Politics: Knowledge and Opinion in the American Electorate, Harvard University Press, Cambridge, Mass.

New York Times (1990). Who's making missiles for Iraq? (September 8):22.

New York Times (1993). Finance minister resigns in inflation dispute. March 2):A9.

O Estado de Sao Paulo (1983). Resende site of uranium reprocessing plant confirmed. (Mar. 30): 27; JPRS 81384-0021.

O Exterminio de Crianças e Adolescentes no Brasil. (1992) Camara dos Deputados, Comissao Parlamentar de Inquerito, Brasilia.

O Globo (1990). Seven reactors to be functioning by 2015. (September 30).

O Programa Nuclear Brasileiro, Brasilia: Republica Federativa do Brasil, 1977.

Paige, Glenn. (1977). On values and science: The Korean decision reconsidered. American Political Science Review, 71/4:1603-1609.

Pinguelli Rosa, Luiz. (1984). Energia E Crise, Petropolis (Brazil), Vozes.

Pinguelli Rosa, Luiz. (1990). A verdade sobre Cachimbo e a bomba nuclear. Folha de Sao Paulo: (Sept. 25).

Pomper, Gerald. (1975). Voter's Choice, Dodd, Mead, and Co., New York.

Poneman, Daniel. (1982). Nuclear Power in the Developing World.

Poneman, Daniel. (1984). Nuclear Proliferation Prospects for Argentina. Orbis, (winter).

Poneman, Daniel. (1985). Latin America. In Jones, R. W. et al., The Nuclear Suppliers and Non-Proliferation, Lexington Books, Lexington, Mass.

Putnam, Robert D. (1973). The Beliefs of Politicians: Ideology, Conflict, and Democracy in Britain and Italy, Yale University Press, New Haven.

Quester, George H. (1982). Nuclear proliferation in Latin America. Current History, 81: 52-55.

Redick, John R. (1970). The Politics of Denuclearization: A Study of the Treaty for the Prohibition of Nuclear Weapons in Latin America, Charlottesville, Va.

Redick, John R. (1987). Latin America: Reducing the threat of nuclear proliferation," Wisconsin International Law Journal, 5 (June).

Redick, John R. (1992). Argentina and Brazil's new arrangement for mutual inspections and IAEA safeguards. A Nuclear Control Institute Publication, Wash., D.C.

Renshon, Stanley. (1989). "Psychological perspectives on theories of adult development and the political socialization of leaders. In Siegel, R.S. (ed.), Political Learning in Adulthood, University of Chicago Press, Chicago, p.203-264.

Roett, Riordan. (1992). Brazil: Politics in a Patrimonial Society, Fourth Edition, Westport, Ct., Praeger.

Rokeach, Milton. (1960) The Open and Closed Mind: Investigations into the Nature of Belief Systems and Personality Systems, New York: Basic Books.

Rokeach, Milton. (1979). The Nature of Human Values, Free Press, New York.

Rosati, Jerel. (1988). Continuity and change in the foreign policy beliefs of political leaders: Addressing the controversy over the Carter Administration. Political Psychology, (Sept).

Rotenberg, Ken and Pilienko, Teresa. (1983-84) Mutuality, temporal consistency, and helpfulness in children's trust in peers. Social Cognition, vol 2(3):235-255.

Sautchuck, Jaime. (1986). Journalist discovers nuclear test site at Cachimbo. Folha de Sao Paulo. (Oct. 18).

Schneider, Ben Ross. (1993) The career connection. Comparative Politics, 25(3):331-349.

Schneider, Ronald M. (1976). Foreign Policy of a Future World Power, Westview Press, Boulder, Colo.

Schneider, Ronald M. (1991). Order and Progress: A Political History of Brazil, Westview Press, Boulder, Colo.

Schuman, Howard and Presser, Stanley. (1981) Experiments in Question Wording, Form and Context in Attitude Surveys, 1971-1980, ISPCR (Inter-university Consortium for Political and Social Research.

Schuman, Howard and Presser, Stanley. (1981) Questions and Answers in Attitude Surveys, Academic Press, New York.

Segall, Marshall H. (1979) Cross-cultural Psychology: Human Behavior in Global Perspective, Brooks/Cole Publisher, Monterey, Cal.

Shannon Keri and Kafer Norman. (1984) Reciprocity, trust, and vulnerability in neglected and rejected children. Journal of Psychology, May, vol 117(1):65-70.

Sociedade Brasileiro de Fisica. (1991) Comisao de Acompanhamento da Questao Nuclear: A Viabilidade de Enriquecer Urânio no Brasil em Grau Para Bomba e o Projeto Conceitual de um Explosivo Nuclear. Nucleo de Publicacoes, COPPE, Rio de Janeiro.

Snyder; Jed and Samuel Wells. (1985). Limiting Nuclear Proliferation, Ballinger Publisher, Cambridge, Mass.

Spector, Leonard. (1984). Nuclear Proliferation Today, Vintage Books, New York.

Spector, Leonard. (1985). The Nuclear Nations, Vintage Books, New York.

Spector, Leonard. (1987). Going Nuclear, Ballinger Publisher, Cambridge, Mass.

Spector, Leonard. (1990). Nuclear Ambitions, Westview Press, Boulder.

Spector, Leonard. (1992). Repentent nuclear proliferants. Foreign Policy, 88:22-37.

Stepan, Alfred. (1988). Rethinking Military Politics: Brazil and the Southern Cone, Princeton University Press, Princeton.

Stepan, Alfred. (1989). Democratizing Brazil, Oxford University Press, New York.

Strahm, Rudolf H. (1991). Subdesenvolvimento: Por Que somos Tao Pobres? Vozes, Petropolis, Brasil.

Strategic Digest, (1983) Nuclear technology in Latin America. 13/1, (Jan.): 33-54.

Talbott, Strobe. (1984) Deadly Gambits, Alfred Knopf, New York.

Tetlock, Philip E. (1973). Structure and function in political belief systems. In Knutson, Jeanne (ed.), Handbook of Political Psychology, Jossey-Bass, San Francisco.

Tetlock, Philip E. (1983). Cognitive style and political ideology. Journal of Personality and Social Psychology, 45:118-126.

Tetlock, Philip E. (1984a) Cognitive style and political belief systems in the British House of Commons. Journal of Personality and Social Psychology, 46:365-375.

Veja. (1991). (Aug. 14):p. 24.

Veja. (1991). Corrupcao. (Sept. 18):18-28.

Velho, Gilberto. (1987). Individualismo e Cultura, Rio de Janeiro, Jorge Zahar Editor.

Walker, Stephen. (1977). The interface between beliefs and behavior: Henry Kissinger's operational code and the Vietnam War. Journal of Conflict Resolution, 21/1 (March).

Walker, Stephen, and Lawrence S. Falkowski. (1984). The operational codes of U.S. presidents and secretaries of state: Motivational foundations and behavioral consequences," Political Psychology, 5/2 (June):237-266.

Walker, Stephen and Timothy G. Murphy. (1981). The utility of the operational code in political forecasting," Political Psychology, (spring/summer):24-60.

Walker, Stephen. (1990). The evolution of operational code analysis. Political Psychology, 11/2 (June):403-418.

Waltz, Kenneth. (1979). Theory of International Politics, Random House, New York.

Warren, Neil. (1977) Studies in Cross-cultural Psychology, Academic Press, New York.

Wiarda, Howard J. and Harvey F. Kline. (1985). Latin American Politics and Development, Westview Press, Boulder.

Wiesner, Jerome B., Morrison, Philip and Tsipis, Kosta. (1993). Ending overkill. Bulletin of Atomic Scientists, (March):12-23.

Winter, D. (1973). The Power Motive, Free Press, New York.

Yager, J. Non-Proliferation and US Foreign Policy, (see part 4 by William Courting)