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states from producing and proliferating  
Weapons of Mass Destruction (WMD)

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Monterey, California. Naval Postgraduate School

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**NAVAL  
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**MONTEREY, CALIFORNIA**

**THESIS**

**AN INFLUENCE ANALYSIS OF DISSUADING NATION  
STATES FROM PRODUCING AND PROLIFERATING  
WEAPONS OF MASS DESTRUCTION (WMD)**

by

Carl P. Poe

March 2011

Thesis Co-Advisors:

Steven J. Iatrou  
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**AN INFLUENCE ANALYSIS OF DISSUADING NATION STATES FROM  
PRODUCING AND PROLIFERATING WEAPONS OF MASS DESTRUCTION  
(WMD)**

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Submitted in partial fulfillment of the  
requirements for the degree of

**MASTER OF SCIENCE IN INFORMATION SYSTEMS OPERATIONS**

from the

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## **ABSTRACT**

This thesis analyzes the influence of deterrence and dissuasion measures against nation-states in an effort to further prevent the production and proliferation of weapons of mass destruction (WMD) among emerging nation-states. The case study within provides a historical background for the evolution of WMD programs, emphasis on nuclear programs, in India and Iraq. The study then examines the influences that prompted the nation-state leaders to convert their commercial nuclear programs to into militarized nuclear weapons programs with the intended goal of producing nuclear weapons. The study addresses dissuasion and deterrence measure used against these nation-states at the nation strategic level. Social influence techniques are then analyzed for their adaptation from the tactical (person-to-person) level to the strategic (nation-on-nation) level. The final analysis provides indications of which social influence techniques are apparently the most successful and unsuccessful in dissuading and deterring emerging nation-states in their potential quest to obtain WMD. Indications suggest that social influence tactics, such as fear appeals, coalition formulation, repetition of a message, be a credible source, guilt sells, public audience, and norm of reciprocity will only be successful in deterring and dissuading emerging nation-states in their quest to produce and proliferate WMD, if the appropriate nation deterrence/dissuasion strategy is selected.



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## TABLE OF CONTENTS

I.	INTRODUCTION.....	1
A.	BACKGROUND .....	1
B.	PURPOSE.....	2
C.	THE RESEARCH QUESTIONS .....	3
1.	Primary Research Question.....	3
2.	Secondary Research Questions.....	3
D.	SCOPE .....	3
E.	METHODOLOGY .....	3
F.	ORGANIZATION OF THE THESIS.....	4
II.	LITERATURE REVIEW .....	5
III.	METHOD .....	13
A.	OVERVIEW .....	13
B.	RESEARCH DESIGN.....	13
IV.	CASE STUDIES.....	15
A.	INDIA.....	15
1.	Planting the Seed for a Nuclear Nation.....	15
2.	World Event Changes the Perspective.....	15
3.	Continuing the Establishment of the Nuclear Program.....	16
4.	1960s Influences .....	18
5.	Lead Up to the Fission Device Test 1974 .....	22
6.	Maintaining Nuclear Policy 1974-1998 .....	24
7.	1998 Nuclear Test.....	25
8.	Summary.....	27
B.	IRAQ.....	28
1.	Nuclear Overview.....	28
2.	Nuclear Militarization Influences.....	29
3.	Early U.S.-Iraq Relations.....	30
4.	Development of Clandestine Nuclear Program (1970s) .....	31
5.	Development of Clandestine Nuclear Program (1980s) .....	34
6.	Invasion of Kuwait Ends Nuclear Weapons Program.....	35
7.	Early Preemptive Efforts Against Iraq's Program.....	36
8.	UN Resolutions to Dissuade Iraq.....	37
a.	UNSCR 687.....	37
b.	UNSCR 707.....	39
c.	UNSCR 715.....	41
d.	UNSCR 1051.....	42
e.	UNSCR 1060.....	43
f.	UNSCR 1154.....	44
g.	UNSCR 1194.....	45
h.	UNSCR 1205.....	46
i.	Implementation Results of Res. 1154, 1194, 1205.....	46

	<i>j.</i>	<i>UNSCR 1284</i> .....	47
	9.	Summary.....	48
V.		RESULTS/FINDINGS.....	49
	A.	INDIA CASE FINDINGS .....	49
		1.    Deterrence/Dissuasion Measures.....	49
		2.    Identification of Social Influence Tactics.....	51
		3.    Change in Strategy.....	55
	B.	IRAQ CASE FINDINGS.....	60
		1.    Deterrence/Dissuasion Measures.....	60
		2.    Identification of Social Influence Tactics.....	61
		3.    Change in Strategy.....	66
VI.		CONCLUSION .....	69
		LIST OF REFERENCES .....	73
		INITIAL DISTRIBUTION LIST .....	77

## **LIST OF ACRONYMS AND ABBREVIATIONS**

AEC	U.S. Atomic Energy Commission
ALVIS	Atomic Vapor Layer Isotope Separation
BARC	Bhabha Atomic Research Center
BJP	Bharatiya Janata Party
CISR	Council for Scientific and Industrial Research
CTBT	Comprehensive Test Ban Treaty
EMIS	Electromagnetic Isotope Separation
FMCT	Fissile Material Cut-Off Treaty
IAEA	International Atomic Energy Agency
IAEC	Iraq Atomic Energy Commission
JSP	Jana Sangh Party
MTCR	Missile Technology Control Regime
NEC	National Electrostatic Corporation
NPT	Non-Proliferation Treaty
NRC	Nuclear Research Center
OSD	Office of Studies and Development
PNE	Peaceful Nuclear Explosion
RCC	Revolutionary Command Council
UN	United Nations
UNMOVIC	United Nations Monitoring, Verification and Inspection Commission
UNSCOM	United Nations Special Commission
UNSCR	United Nations Security Council Resolution
WMD	Weapons of Mass Destruction

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# I. INTRODUCTION

## A. BACKGROUND

The development and nonproliferation of weapons of mass destruction (WMD) among emerging states is critical in today's global context where the power struggle among nation-states is increasing. Deterrence has been and will continue to be a viable strategic method to curtail the development and proliferation of (WMD) among emerging states. The importance of identifying techniques to potentially be successful in deterrence efforts are based on the need for maintaining regional stability. This could significantly enhance the balance of power among nation-states in the future. Identifying those tactical influence techniques that appear to have translated to the strategic level is just one of the key factors involved in successful deterrence or the failure of deterrence. Assessing how the identifiable techniques could be used in the future is just as important as other nation-states in pursuit of WMD capability achieve their mission.

In an effort to try and identify not only the strategic deterrence measures, but also the social influence tactics at work, two nuclear weapons development cases were analyzed, India and Iraq. Despite strategic deterrence efforts and the use of social influence tactics, the nation-states of India and Iraq were able to pursue their quest to become nuclear weapons nations. India, the first nation-state to be analyzed, was able to produce and test nuclear weapons twice, once in 1974 and again in 1998. Iraq, the second nation-state, was not able to completely produce and test nuclear weapons. However, Iraq was able to clandestinely build a nuclear infrastructure and produce many of the components for nuclear weapons assembly despite deterrence measures used against them.

Looking at the nation-states, there were two distinct differences. First, India was a nation-state that set out to produce nuclear energy for research and civilian energy consumption. Its government maintained a policy of peace nuclear energy usage unless it was pushed in the direction of nuclear weapons based on nation security. On the other hand, Iraq was a nation-state that, from the beginning, clandestinely pursued nuclear



weapons production based on the threat of national security. Both cases required strategic deterrence measures and social influence tactics to be utilized to slow their rate of progress or halt the progress of their nuclear weapons production. The case study analysis of these two nation-states provided insight into the strategic deterrence/dissuasion measures utilized as well as the supporting tactical level social influence tactics. Aside from identification, the effectiveness of each was also analyzed.

## **B. PURPOSE**

The purpose of this research is to explore the application of social influence tactics in the area of strategic deterrence of weapons of mass destruction.

Deterrence is a complex issue involving incentives, threats, norms, images, roles, world pressure, etc. As defined by the Nuclear Threat Initiative, “deterrence is the action of a state or group of states to dissuade a potential adversary from initiating an attack or conflict by the threat of retaliation. Deterrence should credibly demonstrate to an adversary that the costs of an attack would be too great and would outweigh any potential gains” (NTI, 2011). The associated costs mentioned above could be in the form of materials, internal economic strain, national image or prestige, etc. In the context of deterring nation-states from developing and proliferating weapons of mass destruction (WMD) deterrence must carefully balance these incentives and threats in a way that does not tip the scale to violent action.

There are strategic measures and tactical level social influence techniques that can be applied in many different situations to cause one entity to act in a manner favorable to another entity’s objectives. In terms of social influence tactics, do the tactical level influence techniques translate to the strategic level, to include the realm of nation-to-nation WMD deterrence/dissuasion? Nation-states, such as India and Iraq, are examples where it appears that influence techniques have been utilized in the deterrence/dissuasion of the proliferation/nonproliferation and production of WMD. Identifying the strategic measures and social influence techniques could be critical in how nation-states deal with emerging nation-states claiming to have or wanting to obtain WMD.

## **C. THE RESEARCH QUESTIONS**

### **1. Primary Research Question**

What tactical (person-to-person) level influence techniques can successfully be utilized at the strategic (nation-on-nation) level of interaction to address development and proliferation of weapons of mass destruction by emerging nations?

### **2. Secondary Research Questions**

What influence factors appear to have been successful in dissuading nation states from producing and proliferating WMD?

What influence factors appear to have been unsuccessful in dissuading nation states from producing and proliferating WMD?

## **D. SCOPE**

The scope of this thesis includes:

- A discussion of the theory surrounding strategic nation-state deterrence and dissuasion.
- An analysis of social influence techniques that appear to translate from the tactical level (person-to-person) to the strategic level (nation-state-to-nation-state).
- A discussion of the theories and concepts that are directly related to deterrence and dissuasion of WMD and the application of social influence techniques.

## **E. METHODOLOGY**

Case study analysis will be used in this investigation. This analysis will include a composite review of a nation-state that has apparently been successfully deterred from proliferating WMD, as well as a nation state that appears to have not been deterred from production or proliferation of WMD. Upon completion of the case study reviews, a link

between the tactical social influence techniques that appear to have been utilized and their role in strategic state-on-state interaction will try to be established.

## **F. ORGANIZATION OF THE THESIS**

Chapter II, Literature Review, provides a framework of the important concepts and theories appropriate pertinent to the fields of deterrence, dissuasion, and social influence techniques.

Chapter III explains the selection process of the two case study nation-states.

Chapter IV contains the case studies of India and Iraq in terms each individual nation-state's development of their WMD programs.

Chapter V describes the analysis of deterrence/dissuasion efforts that have apparently been utilized against the nation-states and how tactical level social influence techniques have apparently translated to the strategic level given the empirical examples.

Chapter VI provides a conclusion of the research study, as well as articulates areas that warrant further analysis through future research.

## II. LITERATURE REVIEW

Colin Gray put forth the most compelling argument that the more vehement the American opposition to proliferation, the greater the political and strategic value of such proliferation in the calculations of adversaries desperate for some way to secure asymmetric advantage (Gray, 2003). Therefore, the development and nonproliferation of weapons of mass destruction among emerging states is critical in today's global context where the power struggle among nation-states is increasing. Deterrence has been and will continue to be a viable strategic method to curtail the development and proliferation of WMD among emerging states. The importance of identifying techniques to potentially be successful in deterrence efforts are based on the need for maintaining regional stability. This could significantly enhance the balance of power among nation-states in the future. Identifying those tactical influence techniques that appear to have translated to the strategic level is just one of the key factors involved in successful deterrence or the failure of deterrence. Assessing how the identifiable techniques could be used in the future is just as important as other nation-states in pursuit of WMD capability achieve their mission.

Gray focused his efforts on maintaining effect deterrence from a national perspective. Like other scholars who conducted research in this field, he stated that deterrence works by persuading potential adversaries that the costs of their aggression will exceed any probable gains (Gray, 2003). The associated costs could be in the form of physical materials, internal economic strain, national image or prestige, etc. Gray then goes on to discuss the notion that the United States has no other practical obligation than to pursue deterrence to its greatest extent even though there is the potential for unfulfilled expectations. More importantly, he stated that deterrence, though diminished in significance, remains absolutely essential as an element in U.S. grand strategy (Gray, 2003). This line of thought and concern crosses over directly to the realm of proliferation and production of weapons of mass destruction. The ability to deter emerging nation-

states from obtaining weapons of mass destruction reflects directly on U.S. national security and regions of interest abroad and, therefore, is reflected in our nation's grand strategy.

As well as discussing the impact of deterrence on the U.S. grand strategy, Gray introduced six general measures for maintaining effective deterrence. These measures are as follows: (1) don't talk down deterrence, (2) look for deterrable foes, (3) don't discount general deterrence, or dissuasion, (4) develop a more empirical theory of deterrence, (5) deterrence should be employed as part of a broad strategy of influence, (6) take the ideas of others seriously (Gray, 2003). Perhaps the final contribution by Gray in the theory of deterrence that sums up why this research is of importance is a comment by former President George W. Bush. The former President in his National Security Strategy stated that deterrence based only upon the threat of retaliation is less likely to work against leaders of rogue states more willing to take risks, gambling with the lives of their people, and wealth of their nations (Gray, 2003). This comment could never be more real when a lens is placed on emerging nation-states and how the leaders of those nation-states would react if they were to obtain weapons of mass destructions. Marrying Gray's six measures for maintaining effective deterrence with the social influence tactics identified by Pratkanis may provide a credible means to deter/dissuade nation-states from producing and proliferating WMD. Therefore, there is a real need to continue to develop deterrence theory and influential techniques in this field.

Building on the concepts set forth by Gary and the influence tactics identified by Pratkanis, Thomas Schelling's research on game theory also included the theoretical substance of deterrence and the elements required to influence the adversary. He opened his discussion by considering the applicability of credibility. Schelling says that the threat must be credible to be efficacious, and that the credibility may depend on the costs and risks associated with fulfillment for the party making the threat (Schelling, 1966). The notion of being a credible entity is a key aspect of strategic deterrence because without being credible, it is quite possible that all of the efforts being put forth will simply fail to produce the intended effect on the adversary. While Schelling looked at this element from a strategic level, Pratkanis identified it as a tactical level influence element. Therefore,

when making a credible threat the influencer must get themselves committed to the fulfillment through the stretching of a trip wire or by making fulfillment of the situation a matter of national honor and prestige (Schelling, 1966). In other words, the influencer must decide when actions will no longer suffice thus resulting to some action being taken. The second point is to consider how much national blood and treasure is the influencer willing to put forth to gain the intended effect and this course of action is not only viable at the strategic level but also at the tactical (one-on-one) influence level.

After taking into account credibility, Schelling then recognized the efficacy of the threat. He stated that the efficacy of the threat may depend on what alternatives are available to the potential adversary and that the enemy must be left with a tolerable recourse (Schelling, 1966). The influencer must provide the influenced enough room to act in a manner predicted by the influencer in order to ensure the intended effect takes place. Likewise, he recognized that, to the extreme, the threat of all out retaliation gives the enemy every incentive, in the event he should choose not to heed the threat, to initiate his transgression with an all out strike at us because it limits the enemies lesser courses of actions available and forces the enemy to choose between extremes (Schelling, 1966). This is crucial information when translated to the world of deterring and dissuading the production and proliferation of weapons of mass destruction. The worst outcome would be for an emerging nation-state to obtain WMD and then be backed into a corner by another nation-state causing the influenced nation-state to think the only way out is through use of WMD. This is why the efficacy and credibility of the threat must become key components of the deterrent and dissuasion strategy against the production and proliferation of WMD and why the social influence tactics identified by Pratkanis used be used in conjunction with the nation strategy for an enhancing effect.

While Gary's work focused on maintaining effecting deterrence and Schelling's focused on efficacy and credibility, Freedman's work focused on the use of threats. Freedman stated that deterrence is concerned with deliberate attempts to manipulate the behavior of others through conditional threats (Freedman, 2004). The individual whose behavior manipulation is of concern is the nation state leader because he or she generally has the most influential power over the actions taken by the nation state. Freedman

provided the etymology of deterrence that starts with the Latin *deterre*—to frighten from or away (Freedman, 2004). He then shows the evolution of the term, so that by the end of the nineteenth century, the term ‘deterrence’ was being used to refer to the policy of influencing the behavior of potential wrongdoers through the prospect of punishment (Freedman, 2004). Freedman also brought to the forefront that there was an international sense to the concept [of deterrence which means]: to scare off another with a purpose (Freedman, 2004). Finally, in the Oxford English Dictionary ‘to deter’ is defined as: to discourage or turn aside or restrain by fear; to frighten from anything; to restrain or keep back from acting or proceeding by any consideration of danger or trouble (Freedman, 2004).

Up to this point, Freedman has discussed deterrence as an effective tool to be used against a potential adversary. He then points to an example where deterrence begins to unravel when applied to the realm of weapons of mass destruction (WMD) by the Soviet Union as an example. He stated that the Soviet Union, having tested its own nuclear weapons as a policy of deterrence through punishment, was always going to be problematic. The likely offenders would have formidable and equivalent means of counter-punishment (Freedman, 2004). The problem of the adversary having a means of counter-punishment is just one of the major issues that will potentially arise as emerging nation-states begin to achieve their goals of obtaining WMD.

Now that deterrence has been defined, and one of the problematic issues with this strategy has been identified, how then do you determine whether or not the deterrent efforts are taking their intended effect? Freedman provided an example that highlights the problems that determine the result of this very question. His example specifies that

It is obvious when it fails. B has been told not to do X if he wishes to avoid dire consequences but X is nonetheless done. But when deterrence succeeds, all that is known is that X has not happened. That could be because B had never intended to do X in the first place, or was only suggesting he might for bargaining purposes. If he has the intention and then held back, this could be because of a whole range of factors, both internal and external. These might include the probability of being able to accomplish the act, the resources that would need to be expended, the

opportunity costs, domestic opposition, problems of acquiring allies, local resistance and uncertainties over the benefits, as well as any dire threats of punishment. (Freedman, 2004)

This example not only applies to one individual trying to deter another individual but also transcends to the national strategic level where one nation-state is attempting to deter another. The concepts specified in the example above were also set forth by Pratkanis ,but instead of having a nation-on-nation connotation, Pratkanis' application was focused on the individual (one-on-one) application.

Additionally, Freedman advanced deterrence as a coercive strategy where it involves the use of overt threats of force to influence another's strategic choices (Freedman, 2004). In his explanation of coercion, he divided the strategy into two categories, which were deterrent and compellent. The difference is essential between persuading another that they must not act for fear of the consequences if they do (deterrence), and that they must act for fear of the consequences if they do not (compellent) (Freedman, 2004). This strategy typically involves two-way traffic between coercer and coerced, and the relationships between the individuals or nation-states involved will include times of cooperation and conflict. The difficulty arises when there are multiple parties involved as the situation moves from one-to-one to a situation of one-to-many. As Freedman explained, the more actors that are involved in a coercive activity, the more complex it may become, as bargaining within a group complicates bargaining between the coercer and the coerced (Freedman, 2004).

Ultimately, as the conflict develops, its character will change and adjustments will have to be made. States will be forced to come clean on what is of central importance to them and what is peripheral. These interests may well be reappraised continually in the light of changing circumstances, with the costs and risks of attending to one set of interests constituting an interest in themselves, and new interests will develop beyond those which prompted the crisis in the first place (Freedman, 2004). The evolution of the situations pertaining to emerging nation-states and their goals to obtain WMD will undoubtedly affect the nature of the nonproliferation measures used against that nation-state from both a national strategic level and a social influence level. Unfortunately, as



the number of nation-states within a scenario increases, the effectiveness of the deterrent measures decrease and may prompt a changing in strategy or influence to regain effectiveness.

Alexander George, much like the scholars discussed above, further expanded the theories of deterrence and persuasion. His focal point was the use of coercive diplomacy. The general idea of coercive diplomacy is to back one's demand on an adversary with a threat of punishment for noncompliance that he will consider credible and potent enough to persuade him to comply with demand (George, 1991). This strategic measure can also be seen in Pratkanis' fear appeals tactic. Just as with deterrence, this strategy also relies heavily on the adversary being rational, meaning that the adversary has the ability to receive all relevant information, evaluate it correctly, make proper judgments as to the credibility and potency of the threat, and see that it is in his interest to accede to the demand made on him (George, 1991). This strategy is used in response to an action that has already been undertaken rather than persuading the adversary from carrying out a particular action in the future. Both strategies are of great importance in the realm of WMD nonproliferation. There is a need to dissuade those nation-states that already have the capability from spreading their own controlled materials, technology, and knowledge, and there is also the same need to prevent emerging-nation states that do not have the capability from obtaining it.

Coercive diplomacy is a strategy that, much like deterrence, leaves room for the use of force as a resolution to the situation. If force is used in coercive diplomacy, it consists of an exemplary use of quite limited force to persuade the opponent to back down. Exemplary meaning the use of just enough force of an appropriate kind to demonstrate resolution to protect one's interests and to establish the credibility of one's determination to use more force if necessary (George, 1991). Additionally, much like the work of Freedman, there is also the potential for bargaining and negotiating between the initiator and adversary. If this particular strategy were to be utilized the initiator must decide (1) what to demand of the opponent; (2) whether and how to create a sense of urgency for compliance with the demand; (3) whether and what kind of punishment to

threaten for noncompliance; and (4) whether to rely solely on the threat of punishment or also to offer conditional inducements of a positive character to secure acceptance of the demand (George, 1991).

George explained three different approaches to carrying out this strategy. The first of which was the use of an ultimatum which consists of the following three components: (1) a demand on the opponent; (2) a time limit or sense of urgency for compliance with the demand; and (3) a threat of punishment for noncompliance that is both credible to the opponent and sufficiently potent to impress upon him that compliance is preferable (George, 1991). The second was the “try and see” approach which is a variant of the ultimatum. Using this approach, only the first element of an ultimatum—a clear demand—is conveyed; the coercing power does not announce a time limit or convey a strong sense of urgency for compliance (George, 1991). The third approach put forth by George was the “gradual turning of the screw approach.” When utilizing this approach, a threat to step up pressure gradually is conveyed at the outset and is carried out incrementally. It lacks a sense of time urgency for compliance and relies on the threat of gradual, incremental increase in coercive pressure rather than threatening large escalation to strong decisive military action if the opponent does not comply (George, 1991). The key to utilizing either of the approaches discussed above is that the coercer must remain flexible and adapt the utilization of the approaches to the situation as it develops. This is especially important in the realm of WMD because there are so many different factors that may or may not cause an emerging nation-state to proliferate its WMD, if it were to obtain such capability.

George, like Pratkanis, further explained that the message that is being delivered has both actions and words. When considering what actions and words to take against an adversary, George listed eight variables to consider. The variables are (1) Type of Provocation, (2) Magnitude and depth of the conflict of interests, (3) Image of War, (4) Time Pressure to achieve objective, (5) Unilateral or Coalitional coercive diplomacy, (6) Strong relationship, (7) The isolation of the adversary, and (8) The preferred post-crisis relationship with the adversary (George, 1991). Whether speaking in terms of deterrence or persuasion, the above list of variables must be carefully thought out as the outcome of

each will shape the message being delivered to the adversary and could potentially affect the reaction of the adversary to the message. Pratkanis' concepts of message delivery mirror George's concept in that the message being communicated has both content and action to be taken (Pratkanis, 2007).

Freedman and George discussed deterrence and coercion in terms that speak to the national strategic level for nation-state to nation-state interaction. Pratkanis, in his book *The Science of Social Influence: Advances and Future Progress*, provides a detailed list of 107 social influence tactics that are intended to be utilized at the person-to-person tactical level. These tactics are divided into four categories corresponding to the four main tasks of a communicator according to classical rhetoric theory: (a) establish a favorable climate for the influence attempt, (b) create a relationship with the audience, (c) present the message in a convincing fashion, and (d) use the emotions to persuade (Pratkanis, 2007). From the discussions of Gray, Schelling, Freedman, and George, one can see that there are elements of Pratkanis' influence tactics within the framework of the previous authors. The next question is to ask whether or not any of the 107 tactical level social influence techniques of Pratkanis cross over into the national strategic level when deterring/dissuading emerging nation-states in their potential quest to produce and proliferate WMD.

### **III. METHOD**

#### **A. OVERVIEW**

This research was conducted in order to determine whether or not tactical level (person-to-person) social influence techniques translate to the strategic level (nation-state-on-nation-state) in the realm of deterrence and dissuasion of weapons of mass destruction. More specifically, the primary focus of the research is to determine what tactical (person-to-person) level influence techniques can successfully be utilized at the strategic (nation-to-nation) level of interaction to address development and proliferation of weapons of mass destruction by emerging nations. Additional focus is also being aimed at determining what influence factors appear to have been successful in dissuading nation states from producing and proliferating WMD, as well as determining which of those factors appear to have been unsuccessful.

#### **B. RESEARCH DESIGN**

This study focuses exclusively on an analysis of the WMD programs of India and Iraq. In particular, it focuses on the apparent influential deterrence/dissuasion events that occurred during the time period of India's nuclear tests of 1974 and 1998, as well as the apparent deterrence/dissuasion events that seemed to have influenced Iraq's WMD program. No other nation-state's WMD programs were analyzed. The goal of the analysis is to determine the influential strategic nation-on-nation influence techniques that were utilized. The next step is to identify which of the tactical (person-to-person) social influence techniques put forth by Dr. Anthony Pratkanis appear to translate from the tactical to this strategic level of influence when considering the proliferation and deployment of weapons of mass destruction. The resultant identification of these techniques could be of great importance when dealing with emerging nation-states and their potential quest of obtain weapons of mass destruction.

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## IV. CASE STUDIES

### A. INDIA

#### 1. Planting the Seed for a Nuclear Nation

India's nuclear program lends its origins to the ambitions of Indian physicist Dr. Homi Bhabha. In 1932 he won the Rouse Ball Traveling Fellowship. Having won the fellowship, he used it to visit and work with physicists Wolfgang Pauli in Zurich and Enrico Fermi in Rome (Venkataraman, 1994). Then in 1934, he received an Isaac Newton Studentship, which enabled him to study at Cambridge and also study at the Institute of Theoretical Physics in Copenhagen, Denmark with Niels Bohr and James Franck (Sreekantan, Singh, & Udgaonkar, 1985). Following the ground breaking travels and studies by Dr. Bhabha, the Council for Scientific and Industrial Research (CISR) was created by the British government in 1942. The mission of CISR was to carry out science related activities of the Indian government to support the World War II war effort (Venkataraman, 1994).

In 1944, Dr. Bhabha wrote a grant request for funding in order to create an Indian institute for conducting fundamental nuclear power research, and subsequently on April 14, 1945, the request was approved and the Tata Institute of Fundamental Research was funded and Dr. Bhabha became the Institute's first director on June 1, 1945 (Abraham, 1998). The actions and ambitions of Dr. Bhabha thus became the stepping stones for India's introduction into the realm of nuclear research. However, other world events would begin to change the perspective of India's leadership and its vision for nuclear progression.

#### 2. World Event Changes the Perspective

The trigger that changed the course of history and India's perspective of nuclear energy was the United States' bombing of Japan with nuclear weapons. This action caused Ramaswamy Iyer, Dewan of Travancore, to ban U.S. exports of monazite sands containing thorium from Travancore except for a limited amount necessary to fulfill war needs (Abraham, 1998). The two nuclear bomb explosions in Japan had confirmed Iyer's

impression of the value of thorium to foreign interest (Abraham, 1998). An indication of the influence the bombing of Japan had on India's perspective can be seen in Indian Prime Minister Jawaharal Nehru's speech that he gave in Bombay on June 26 1946. He states:

It is a very grave responsibility for any country to use atomic bombs. A very great responsibility rests with the United States. It justified the use of the atomic bomb on the ground that it stopped the war, but by unleashing such a weapon, it has created a dangerous situation. The atomic bomb brought a measure of hope also. Faced with such a destructive weapon, people might wake up. As long as the world is constituted as it is, every country will have to devise and use the latest scientific devices for its protection. I have no doubt that India will develop her scientific researches and I hope Indian scientists will use the atomic force for constructive purposes. But if India is threatened, she will inevitably try to defend herself by all means at her disposal. I hope that India, in common with other countries, will prevent the use of atomic bombs. (Dorothy Norman, 1965)

The statement above by Nehru foreshadows multiple internal views of the future of India's nuclear program.

First, it points out how actions by an outside force can very quickly persuade a nation-state to change the course of its nuclear power program to produce nuclear weapons. Another element is the indication that India will show restraint in its progression toward developing nuclear energy. However, it also shows that if India is backed into a corner, it will not hesitate to pursue militarization of the nuclear program. Finally, there is the notion that India will work on the national level to deter/dissuade the use of nuclear weapons. All of the aforementioned viewpoints of the speech would be persistent in India's nuclear history.

### **3. Continuing the Establishment of the Nuclear Program**

The Indian government continued to develop the infrastructure of their nuclear research program with the assistance of Dr. Bhabha. Continuing in 1946, the government formed the Atomic Energy Research Committee with Dr. Bhabha as the chairman. The Committee was a subsection of the CSIR, and its mission was to promote education in nuclear physics in colleges and universities. Also during this time, Dr. Bhabha utilized

his position to advise Indian leadership on all atomic energy matters (Venkataraman, 1994). Later, Nehru would formally nominate Dr. Bhabha as the scientific advisor to the Indian government. The result of this nomination was that Dr. Bhabha became the known as the national expert on atomic energy.

To further codify the nuclear research program, in April 1948, Dr. Bhabha wrote a note to Prime Minister Nehru titled *Organization of Atomic Research in India*. Within the note, he expressed his view that the development of nuclear energy should be entrusted to a small and highly empowered group of personnel who only answer to the Prime Minister on matters dealing with atomic energy. He suggested that this group be labeled the Atomic Energy Commission (AEC) and that the Board of Research on Atomic Energy be abolished with the standing up of the AEC. Another key element of the note was that Dr. Bhabha requested permission from the Prime Minister to negotiate with Britain, France, and Norway under complete secrecy, and permission to prepare bilateral agreements with each country (Abraham, 1998).

The Indian government took direct control of the atomic energy efforts and the Prime Minister introduced the Atomic Energy Act before India's Constituent Assembly in April 1948. The purpose of the Atomic Energy Act was to formally create the AEC and establish the operational framework. The construct of the Act was modeled after Britain's Atomic Energy Act, which called for the development of atomic energy under a cloud of secrecy. The Act also implied that ownership of all raw materials, including thorium and uranium, would reside with the government. During ensuing debates over the establishment of the AEC and its secrecy, Nehru argued that secrecy was necessary to protect materials and know-how from being exploited by industrialized nations and to assure the U.S. and United Kingdom that if they cooperate with India their secrets would be protected (Perkovich, 1999). A further debate within the Constituent Assembly led Nehru to make the following statement regarding the necessity for developing the program on April 6, 1948.

If we are to remain abreast in the world as a nation which keeps ahead of things, we must develop this atomic energy quite apart from war-indeed I think we must develop it for the purpose of using it for peaceful purposes. Of course, if we are compelled to as a nation to use it for other purposes,



possibly no pious sentiments of any of us will stop the nation from using it that way. But I do hope that our outlook in regard to this atomic energy is going to be a peaceful one for the development of human life and happiness and not one of war and hatred. (Abraham, 1998)

Once again, the perspective of the nuclear program being presented was one in which the development of nuclear power was for peaceful purposes and to further research in the field. Nuclear restraint was also being expressed in the statement. However, there was the underlying notion that India, if backed into a corner, would convert a portion of its research and development to militarization of nuclear energy and the production of a nuclear weapon. India's intention was to enter into the nuclear field in order to remain relevant in the world.

On August 15, 1948, the Atomic Energy Commission was established. The three person Commission consisted of Dr. Bhabha, Dr. K. S. Krishnan, and Dr. Bhatnagar, director-general of CSIR. Pursuant to the establishment of the AEC, the Prime Minister maintained direct oversight of the actions and decisions being carried out (Abraham, 1998). With the progression of the nuclear program, Prime Minister Nehru would find himself answering many questions concerning the overarching purpose for pursuing technologies in the field. Over and over he would answer that India is not thinking of atomic energy in terms of atomic weapons but rather in terms of processing minerals out of which atomic energy comes. The end result was the processing of the minerals for energy to conduct research (Bhatia, India's Nuclear Bomb, 1979). Prime Ministers throughout India's nuclear history have repeatedly been asked the question of program purpose, and the resounding answer has become nuclear energy for peaceful purposes with a caveat for militarization if pushed to do so. With this rhetoric well entrenched in the Indian government, the nation continued its quest to create a nuclear infrastructure to delivery nuclear energy for economic needs with the assistance of the United States and other nations.

#### **4. 1960s Influences**

India's nuclear infrastructure continued to grow and develop under the purview of Prime Minister Nehru and Dr. Bhabha. However, from the onset of the 1960s, India's

nuclear power program would begin to take a different route, one of possible militarization. This path began when Dr. Bhabha met with Major General Nichols, a U.S. military engineer, to discuss plans to build India's first nuclear reactor. Major Nichols had supervised the nuclear plants of the Manhattan Project and knew very well the processes and equipment necessary to enrich uranium and plutonium. Major Nichols persuaded Dr. Bhabha and the Prime Minister that the U.S. reactors were superior to the British reactors. Then in a conversation among the group, Prime Minister Nehru asked Dr. Bhabha if he could build a nuclear bomb, and he responded that he could in about a year. Major Nichols concurred and saw no reason why they could not. The Prime Minister then proceeded to tell Dr. Bhabha not to proceed in that direction until told to do so (Nichols, 1987).

On July 10, 1960, the CIRUS research reactor came on line. Following this achievement, in August the Prime Minister announced that India would construct its first nuclear power station at Tarapur and follow that up with building a plutonium separation facility at Trombay (Perkovich, 1999). While pushing forward with its own nuclear program, India was also pushing its agenda for a nuclear test ban which was part of their stance that no nation should have nuclear weapons. In September 1960 at the UN General Assembly meeting, Prime Minister Nehru met with President Eisenhower and the conversation centered on India's push for a nuclear test ban. President Eisenhower could not concede to the Prime Minister's requests because he was not making any progress with the Soviet Union concerning arms control verification (Perkovich, 1999). It is here that the third party aspect of deterrence/dissuasion and proliferation started to take shape and influence India's future responses. This was no more evident than when Russian Diplomat V.S. Emelyanov told a U.S. official that Dr. Bhabha had been trying to make arrangements with Russia to supply India with a nuclear power plant. As the conversation progressed, Emelyanov warned the U.S. official that India might be interested in atomic weapons in the future. He also warned that India could produce the necessary plutonium from the natural reactors (Foran, 1992). The Russian's concern had already been foreshadowed in conversation between Major Nichols and the Prime Minister.

Then on January 9, 1961, in an unprecedented move, Prime Minister Nehru announced to the National Development Council and thus the world that India had reached a stage within its nuclear development that it could produce atomic weapons (Beaton & Maddox, 1962). Dr. Bhabha would later back the statement and provide a time projection of approximately two years to produce an atomic weapon. Dr. Bhabha continued his quest to expand the nation's nuclear infrastructure by announcing that India was seeking contracts to build nuclear power plants and that his intentions were to have the plants built quickly and with few safeguards. He was also looking for Western firms to join in the contracting process and in order to propel a response he claimed that the Indo-Soviet nuclear cooperation was gaining momentum (Setting Up Nuclear Power Plant, 1961). This was another influential test for the U.S. because U.S.-Soviet nuclear cooperation was already strained over export controls. Then in another cautious move, U.S. Secretary of State Dean Rusk, on March 3, 1961, sent messages to the U.S. Embassies stating a general awareness that among American officials India was developing a nuclear infrastructure that could produce nuclear weapons (Foran, 1992). India's nuclear power program was rapidly expanding and conclusions were already being drawn by a select group of U.S. officials that India's program could potentially take a path of militarization.

In September 1961, growing concern over China began to take center stage. In a memorandum to Secretary of State Dean Rusk, U.S. State Department official George McGee illustrated his concern over the current intelligence estimate that China could detonate a nuclear device as early as 1962. Coupled with his expressed concern, he argued that it would be a great strategic move if a friendly Asian nation was to be ahead of China in the endeavor and that India would be the perfect candidate. McGee then went on to even suggest that the U.S. should persuade India through technical assistance to detonate a nuclear device. His arguments for persuading Prime Minister Nehru were the ability to prevent China from committing nuclear blackmail against India; reduce Chinese intimidation of India's neighbors; and to preclude the opportunity for India's Communist Party to claim that the Chinese test was a demonstration of the superiority of communism (McGhee, 1995). Later, Secretary Rusk would reject McGee's arguments in an effort not

to persuade the extension of nuclear weapons capabilities to India. India's nuclear program progression was being fully understood in Washington.

China would become a trigger for the beginning stages of altering the course of India's nuclear power program. On November 21, 1962, China called a cease-fire to end the Indo-China border conflict. As a result of India's defeat at the hand of the Chinese, the opposition Jana Sangh Party (JSP) called for the Indian Parliament to reverse their course action concerning India's nuclear policy and to authorize the production of nuclear weapons (Perkovich, 1999). Prime Minister Nehru did not reverse the nation's peaceful nuclear policy. However, there would be growing internal pressure from the JSP and eventually Dr. Bhabha to pursue nuclear weapons.

On May 27, 1964, Prime Minister Nehru died and Lal Bahadur Shasti succeeded him. Shortly after Shasti became Prime Minister, Secretary Rusk reported that the United States was anticipating that China would conduct a nuclear atmospheric test in the near future. Dr. Bhabha, having heard of this announcement, began to try and persuade Prime Minister Shasti to authorize work on direct military applications of nuclear energy (Mirchandani, 1968). Fast forward to October 16, 1964, China conducted a nuclear weapons test followed immediately by a declaration from Prime Minister Shasti that the test now threatened world security. China had just stepped onto the stage as a nuclear power and an even greater influence in the region and world.

Prime Minister Shasti did not over-react and immediately initialized a plan for developing nuclear weapons. Instead, he called upon other nuclear powers for assistance in deterring China. In December 1964, Prime Minister Shasti met with British Prime Minister Wilson to discuss the possibilities of gaining assurance from the "great power" to deter China. During further discussions with the British Prime Minister, the efforts were centered on the protection of all nonnuclear nations. In particular, Prime Minister Shasti considered it the responsibility of the United States and Russia to deter nuclear proliferation and that the only way to do so was through total elimination of weapons (Perkovich, 1999). India had called for the world super powers to use their power and prestige along with peer pressure to deter/dissuade China. While continuing to express

his nation's policy, the Prime Minister continually had to refrain from being pressured by the BJP to authorize the produce nuclear weapons based on a new threat from China.

## **5. Lead Up to the Fission Device Test 1974**

A debate on the Nuclear Non-Proliferation Treaty (NPT) commenced in May 1965. In the debate, an Indian delegate to the UN Disarmament Commission expressed that India had five requirements for acceptance of the NPT. The requirements were: promise by nuclear powers to not use nuclear weapons against nonnuclear states; guarantee from the UN to protect states threatened by nuclear weapons states; tangible progress toward nuclear disarmament to include a test ban treaty; halting production of weapons and means of delivery and cutting existing stockpiles; and promise by nonnuclear states not to obtain or produce nuclear weapons (Perkovich, 1999). India would maintain these five requirements and use them as reasons of why not to sign the NPT. Later that year, India and Pakistan fought a short war over Kashmir. During the conflict, China had pledged to support Pakistan, but China never entered into any military action. However, Pakistan used U.S.-supplied weapons against India and the U.S. cut off aid to both countries. India and Pakistan agreed to a UN cease-fire on September 23, 1965 (Perkovich, 1999). The outcome of this conflict would send shockwaves through the Indian Parliament and various party members would come together and draft a letter to the Prime Minister expressing that the country's survival as a nation and as a democracy, given China's apparent backing of Pakistan, called for the government to take immediate action toward developing nuclear weapons (Gupta, 1967).

On January 10, 1966, Prime Minister Shastri died and was succeeded by Indira Gandhi. Following the death of Prime Minister Shastri, Dr. Bhabha was killed in a plane crash on January 24, 1966 and succeeded by Vikram Sarabhai. The regime was now in place that would see the program through its first underground fission test. With a new regime in place, China continued to conduct nuclear tests, accomplishing its fifth nuclear test on December 28, 1966. China's actions continued to trigger internal debates in Parliament over the development of nuclear weapons.

The 1960s ended with the threat of China still looming and the 1970s proved to be a departure point in India's nuclear policy. In April 1970, China launched a long-range rocket carrying a satellite into orbit and by doing so alarmed Indian officials and once again incited the national debate over the country's nuclear policy (Perkovich, 1999). Pursuant to previous actions by China, in the early part of 1972, Prime Minister Gandhi authorized a nuclear explosion device experiment and detailed work on the components for the explosive device begins. Showing concern for the developing situation in India, the United Nation Association of the United States issued a report on the problems associated with the spread of nuclear weapons. Worth noting, the report identified that India had enough unsafeguarded plutonium not guarded against weapons production to produce 19 atomic bombs (Times, 1972). This report clearly showed that the UN and the United States had a firm grasp of the perceived capabilities of India's nuclear program to produce nuclear weapons. The final step for India's peaceful nuclear explosion (PNE) was put into place on September 7, 1972 when Prime Minister Gandhi authorized the fabrication of a device for a PNE (Perkovich, 1999).

On May 18, 1974, India conducted a nuclear test at Pokhran in the Rajasthan desert. The government formally announced the completion of the test without providing the location and declared it a PNE. That announcement was followed up by another announcement from the AEC that it had no intentions of trying to produce nuclear weapons (Perkovich, 1999). In an effort to dissuade India from conducting additional tests, Pakistan's Prime Minister Bhutto declared India's test a threatening development and that Pakistan was determined not to be intimidated by India nor was it going to fall prey to nuclear blackmail (Perkovich, 1999). Other measures were taken by Canada who felt betrayed by India for using material supplied by the Canadian-CIRUS reactor for the test. Canada subsequently froze all assistance to India for the Canadian supplied reactors. India was also criticized by the international community at the May 22, 1974 Geneva Disarmament Conference for having conducted the test. Claims were made that India had become the 6th nuclear power. India rejected the notion and stated that it had no intentions of becoming a nuclear power (Times, ProQuest Historical Newspapers The New York Times (1851–2007), 1974). Pakistan continued to put pressure on Prime

Minister Gandhi for India's actions. Prime Minister Bhutto in a letter to Prime Minister Gandhi denied distinction between PNE and military detonation and continued on to declare India's new military capability a permanent factor to be reckoned with. Pakistan then called on nuclear weapons states to provide those without nuclear weapons protection. As a result, future talks between the two countries were cancelled (Perkovich, 1999). Pakistan and Canada both were trying to bolster international peer pressure to deter/dissuade India from carrying out future nuclear device production and testing. However, the United States concluded that the test had not violated any previous agreements, and therefore, continued to ship uranium fuel for the Tarapur reactor that had previously been approved. There were two approaches to the situation: public outcry for peer pressure and continued cooperation in an effort to maintain shaping capability

## **6. Maintaining Nuclear Policy 1974–1998**

Despite there being a succession of 10 different Prime Minister's from 1974 to 1998, India was still able to maintain its peaceful use of nuclear energy policy. The nuclear program continued to grow within this time period and there were no nuclear tests conducted. India's Prime Ministers were able to overcome the internal pressures from opposing parties within Parliament that were advocating a shift in nuclear policy to be able to produce nuclear weapons based on the perceived nation security threat in the region, China and Pakistan. However, it was during this period that one political party would press harder than the others for a shift in nuclear policy. The BJP party led by Atal Bihari Vajpayee made the strongest case for policy change. The party came into power for thirteen days May 16, 1996 to June 16, 1996. Prime Minister Vajpayee was not able to win the majority and on June 1, 1996 H. D. Deve Gowda of the Janata Dal political party took over as Prime Minister. Vajpayee and the BJP party would once again come to power on March 19, 1998 with a manifest to produce and test nuclear weapons. During this time period, the opportunity existed for utilization of deterrence/dissuasion measures against the BJP party that could have prevented the nuclear tests of 1998.

## **7. 1998 Nuclear Test**

The second series of nuclear tests in May 1998 occurred under the leadership of Prime Minister Vajpayee. The origins of this series of tests can be traced back to the 12th parliamentary election campaign. During the campaign, the right-winged Bharatiya Janata Party (BJP) expressed in its manifesto that the party rejects any notions of there being a nuclear apartheid, and that it would actively oppose any attempts to impose a regime that would comply with the Comprehensive Test Ban Treaty (CTBT), Fissile Material Cut-Off Treaty (FMCT), and Missile Technology Control Regime (MTCR). The manifesto also identified that the BJP would not be dictated by anyone in terms of security requirements or its ability to exercise the nation's nuclear option. The BJP party had every intention of exercising its option to produce nuclear weapons and to do whatever it needed to in order to become a nuclear weapons power (Malhorta, 1998). On March 19, 1998, Vajpayee became Prime Minister and then on April 6, 1998, Pakistan tested its Ghauri medium-range ballistic missile. The missile had a reported range of 1,500 km with a payload capability of 700 kg. The test represented a step forward for Pakistan's missile capabilities (Baruah, 1998).

As a result of Pakistan's successful test, Prime Minister Vajpayee authorized preparations to carry out nuclear tests. As India prepared for its upcoming tests, the Prime Minister was issuing reassurances that India was not interested in a nuclear weapons race in the Asian subcontinent, but that India was prepared to take on the challenge should it arise (NTI, 1998).

India's Chief of Army mirrored the Prime Minister's view of the need to obtain nuclear weapons when he expressed that there was a need for strategic deterrence to counter emerging nuclear and missile challenges. He also stressed that India needed a clear strategic vision in order to be able to exploit emerging opportunities in the global strategic environment (Malhorta, 1998). India continued to prepare for the upcoming nuclear tests at Pokhran.

In late April 1998, the testing teams converged at the Pokhran site disguised as military personnel. Then in May, the six devices to be tested were delivered to the site



from nuclear hardened vaults at Bhabha Atomic Research Center (BARC) via the Indian Air Force. In an effort to conceal the operation from U.S. reconnaissance satellites, the Indian Army's 58 Engineers buried cables connecting the test shafts and camouflaged them with vegetation. Additional measure included using mounds of dirt surrounding the shafts that were aligned with natural wind directions and vehicle movements were controlled to avoid detection (Chengappa, 2000). On May 10, 1998, the nuclear devices were lowered into the test shafts and the shafts sealed. India's Prime Minister announced on May 11, 1998 that India had conducted three nuclear tests at the Pokhran site in Rajasthan. This series of tests proved that India had the capability to produce nuclear weapons with its program. The government also made a point to say that it will now consider negotiations on the CTBT and the FMCT (NTI, 1998). Following the tests on May 11, India conducted two more tests on May 13.

In response to India's series of tests, the United States imposed economic sanctions under Section 102 of the Arms Control Act. Among the sanctions were the following: termination of assistance under the Foreign Assistance Act of 1961; termination of sales of defense items; termination of foreign military financing under the Arms Control Act; denial of any credit, credit guarantees, or other financial assistance by any department, agency or instrumentality of the U.S. government; opposition to the extension of any loan for financial or technical assistance by any international financial institution; prohibition of U.S. banks from making any loans or providing any credit to the government of India, except for food and agriculture; prohibiting export of specific goods and technologies subject to export licensing (Secretary, 1998). Aside from sanctions levied by the United States, Japan also imposed its own set of sanctions while Canada and Australia suspended their assistance toward India. The UN also demanded that India refrain from conducting further tests for fear of destabilizing the region. In a letter to U.S. President Bill Clinton on why India conducted the tests, Prime Minister Vajpayee explained that his decision was due to deteriorating security environment, especially the nuclear environment. Additionally, the Prime Minister stated

We have an overt nuclear weapon state on our borders, a state which has committed armed aggression against India in 1962. Although our relations with that country have improved in the last decade or so, an atmosphere of

distrust persists mainly due to the unresolved border problem. To add to the distrust that country has materially helped another neighbor of ours to become a covert nuclear weapons state. (Vajpayee, 1998)

Even though the international community came down on India with a heavy hand, India's intentions were clear not only to its neighbors but to the international community. India was now a true nuclear weapons power state, and it had a credible deterrent. India's reaction was decades in the making under continual external security pressures by China and Pakistan.

## **8. Summary**

India, unlike Iraq, was a nation whose choice to develop nuclear technology was first a venture in providing nuclear power to the nation vice conventional power, but due to external and internal pressures, was backed into a corner, which resulted in militarizing the program. The external pressures came in the form of China's advancement in nuclear and missile technologies that resulted in China conducting a series of nuclear tests in the early 1960s. This was perhaps the first major triggering point that led India to militarize their program. The next major trigger came from Pakistan. Operation Brasstacks, a border dispute over Kashmir, and later the clandestine development of nuclear weapons forced India to step onto the international stage as a nuclear power and conduct a series of tests in 1998.

Prime Ministers throughout India's history had done their best to maintain the nation's nuclear policy of economic development with a caveat of not ruling out nuclear weapons, if pressured to do so. This held true until the BJP came to power with nuclear weaponization embedded in their campaign manifesto. Even though India did produce an arsenal of nuclear weapons, they maintained a no first-strike policy and continued to show great restraint by not conducting subsequent testing after May 1998.

India's issue with the other nuclear powers was that there appeared to be an image within the nuclear arena of the have and have-nots. India saw the NPT and CTBT as legislation that prevented the nuclear have-nots from being able to pursue future technologies in the field and maintain current in the global economy. Also, India did not

agree with the disarmament language contained within the documents. They wanted a complete disarmament and destruction of stockpile policy with a concrete timeline. The nuclear powers would never see India's point of view. Overall, India saw the NPT and CTBT as legislation that would hold them back on the global stage and not provide them with any protection. Therefore, India felt it had no other option than to pursue nuclear weapons. India refused to sign the NPT but did try to wage in negotiations on the CTBT after May 1998 testing.

Measures used to deter/dissuade India from future testing came in the form of sanctions and the breaking of ties for continued technological support from other nations. After May 1998 testing, the main elements were outcries for international condemnation and peer pressure while the sanctions put in place by the United States were mainly geared to strip all future financial aid. The United Nations also condemned India for its testing.

Unlike the response to the 1998 nuclear testing, the 1974 testing brought about a different response. The measure used with that incident was one of continued cooperation. Despite India's surprise test, the United States found that India had not committed any violations and thus continued to provide support based on previously signed agreements. This allowed the United States to maintain a watchful eye and prolong the inevitable. In the end, the resounding background for developing nuclear weapons was preservation of national sovereignty and security. India felt it had no choice but to develop a nuclear deterrent.

## **B. IRAQ**

### **1. Nuclear Overview**

The origins of Iraq's nuclear program began in 1956 under the Atoms for Peace Program. It was then that the Iraq Atomic Energy Commission (IAEC) was established with assistance from the United States. The initial aim of the establishment of the IAEC was to foster and conduct research, development, and training in nuclear science and technology (NTI, 2010). From a governmental perspective, the IAEC fell under the Minister of Higher Education, and it was divided into two subdivisions, one being the

Nuclear Research Center (NRC) and the other the Secretariat which was the administrative body of the organization. In an effort to get the program off the ground, the United States donated most of the U.S. Atomic Energy Commission (AEC) unclassified documents from the Manhattan Project and in addition to the documents, the U.S. also provided training to the initial set of personnel (NTI, 2010).

The nuclear program within Iraq continued to grow and in 1959, Iraq sent 375 students to the Soviet Union to study nuclear technology (“The Development of Iraq’s Nuclear and Biological Weapons,” 1999). Then in 1962, construction began on a Soviet 2 megawatt IRT-5000 research reactor at Al-Tuwaitha. This site, approximately 30 kilometers south of Baghdad, became the Nuclear Research Center with all of the associated facilities required (Albright, Gray, & Hamza, 1999). Five years later, the Soviet supplied reactor came on line thus marking the beginning of nuclear research in Iraq.

Following the reactor going coming on line, there were three key events that occurred shaping the future of the nuclear program within Iraq. The first was July 1, 1968, the date which Iraq signed the Non-Proliferation Treaty (NPT). The second was July 17, 1968, when a Baath coup overthrew the current president, General Abd-al-Rahman Muhamad Arif and General Ahmad Hasan al-Bakr became president with Saddam Hussein assuming the Vice Presidency position as well as becoming the deputy head of the Revolution Command Council (RCC) (Hamza, 2000). Finally, on October 29, 1969, Iraq ratified the NPT and thereby pledged to not develop nuclear weapons (Hamza, 2000). The important issues to draw from these dates are Saddam’s emerging rise to power and the declaration, inclusive with the signing of the NPT, that Iraq would not develop nuclear weapons.

## **2. Nuclear Militarization Influences**

Iraq’s nuclear program, having peaceful origins in the mid-1950s, then began to evolve into a clandestine effort to produce a nuclear weapon. This was despite having signed the NPT. What influenced this turn of events? Perhaps the first influential piece to the puzzle was the publication of *The Israeli Bomb* by Fouad Jabir. Jabir asserted that the

Arab world would face a bleak future of Israeli dominance unless it matched Israel's nuclear capability (Central Intelligence Agency, 2004). Other factors that influenced the militarization of Iraq's nuclear program were the external security threat from Iran, and Saddam's belief that nuclear weapons were a symbol of power (Hamza, 2000). A statement produced by Dr. Khidhir Hamza concerning the threat from Iran made it clear why the ambition to build a nuclear bomb was so great. His statement showed that as Saddam was planning to attack Iran, a country that is much larger than Iraq in terms of population; Saddam wanted an equalizing weapon in case things did not go as planned. He wanted a bomb that could vaporize an invading army or destroy Tehran. Saddam also sought the same respect that Israel got from its development of a nuclear bomb (David Albright et al., 1999).

### **3. Early U.S.-Iraq Relations**

U.S. support for Iraq and Saddam has origins that can be traced back to 1979 and the Carter administration. Saddam became president of Iraq in the summer of 1979 when he forced his cousin, Ahmad Hassan al-Bakr, to resign. However, even though President Carter knew how Saddam came to power and the potential dangers that existed, there was an even larger concern, the Shah of Iran.

During this time period, the Shah of Iran was a key American ally in the Middle East. Due to the shah's actions, President Carter publically pressured him to reform his repressive regime and along with an increase in religious uprisings and economic crisis, the shah and Iran was taken over by Islamic fundamentalists led by Ayatollah Khomeini (Military Channel, 2011). Following the Islamic fundamentalist takeover, the Iran hostage situation at the U.S. Embassy in Tehran occurred. This event would lead to a shift in U.S. policy and in the eyes of the U.S. leaders; Saddam Hussein would start to get favorable recognition (Military Channel, 2011).

Saddam feared that the Ayatollah would incite a rebellion among Iraq's Shiite Muslim population. The Shiite population was the nation's majority religious group but had little power (Military Channel, 2011). In September 1980, Saddam's military forces moved into Iran, but by spring 1982, Iranian forces had pushed Iraqi forces out of Iran.

This action caused great concern within the Reagan administration for fear that if Iran won the war, there could be disastrous effect on the American power base in the Middle East (Military Channel, 2011).

Fearing the worst, the Reagan administration turned to Saddam and Iraq. In an unprecedented move, in 1982, the U.S. removed Iraq from the list of terrorist supporting nation-states. Then in December 1983, the Reagan administration sent Donald Rumsfeld, special envoy to the Middle East, to Baghdad to initiate relations with Iraq (Military Channel, 2011). Bolstering this decision, the U.S. lobbied to friendly nations within the Persian Gulf region that an Iraqi defeat at the hands of the Iranians would be detrimental to U.S. interests. As a result, allies such as Egypt, Saudi Arabia, Jordan, and Kuwait would send howitzers and other weaponry to Iraq. Later, the U.S. would finalize the sale of helicopters to Iraq (Military Channel, 2011).

Aid would continue to flow into Iraq. In addition to the previously supplied equipment, the U.S. sold the Iraqis military jeeps and Lockheed L-100 transports. The U.S. also provided critical intelligence support to Iraq to aid in the defeat of Iran (Military Channel, 2011). U.S. assistance toward Iraq's war effort continued despite having knowledge that the Iraqis were using chemical weapons against the Iranians. The prospect of an Iranian victory and the potential regional instability caused the U.S. to turn a blind eye toward military actions being carried out by Iraq. The U.S. would continue to deliver aid until the war ground to a halt in 1988.

#### **4. Development of Clandestine Nuclear Program (1970s)**

Throughout 1970, Iraq's nuclear research site at Al-Tuwaitha continued to grow and prosper. New additions to the site during this time period included an isotope production laboratory, power substations, workshops, physics and chemistry laboratories, and expansion of the office spaces provided for the NRC. In addition to the infrastructure expansion, the number of individuals increased from a few dozen personnel to a few hundred (Hamza, 2000). Then in 1971, the clandestine nuclear weapons programs was initiated when Dr. Moyesser al-Mallah, secretary general of the IAEC, and Husham Sharif, director of the NRC, approached Dr. Hamza and requested that he develop a plan

for acquiring nuclear weapons. The plan was to be ambitious in nature and had to be carefully designed as a civilian nuclear program which was to be a guise to obtain the technology, skills, and infrastructure to create a nuclear arsenal (Hamza, 2000).

The first step in the process was taken later that year when Dr. Hamza purchased an IBM 360/135 mainframe computer, which would become the centerpiece for the clandestine nuclear program. The next step came in the form of a 40 page report produced by Dr. Hamza to Saddam that outlined his plan for acquiring a medium sized research reactor from the French under the guise of a civilian nuclear program. In addition, the plan called for a clandestine reprocessing unit necessary to separate the plutonium. Dr. Hamza's report was reviewed by the RCC and eventually approved by Saddam himself (Hamza, 2000). In 1973, the quest to develop a clandestine nuclear weapon achieved a milestone when French Prime Minister Jacques Chirac and Saddam reached an agreement in which France would provide Iraq with a nuclear reactor. For providing the reactor, Iraq agreed to approve petroleum concessions, import French automobiles, and make future purchases of military aircraft ("Iraq's Nuclear Weapons Program - From Aflaq to Tammuz," 2001). This step was the beginning of a theme that was carried out through the entirety of Saddam's quest to obtain a nuclear bomb. The theme was that in his eyes oil money was king and Saddam was opening the checkbook with no spending limit to Dr. Hamza and other associates of the program.

Once the agreement to purchase a reactor from the French was secured, further efforts were ensued to protect the clandestine program. To fulfill the requirements, Saddam ordered an Iraqi delegation to get inside the International Atomic Energy Agency (IAEA) and leverage it to their benefit. The Iraqi delegation traveled to Vienna and lobbied for a seat on the IAEA board of governors and was successful in doing so. Al-Shawi took the seat on the board. Then a special intelligence office was created at the Iraqi embassy in Vienna. Following, Al-Shawi was able to get Abdul-Wahid al-Saji appointed as an IAEA inspector (Hamza, 2000). Now, Iraq was firmly entrenched in the IAEA and Saddam utilized this to his advantage in being able to circumvent the IAEA while carrying out their clandestine operations.

Following the entrenchment into the IAEA, Saddam, in an effort to maintain tight control over the nuclear weapons program, transferred oversight of the IAEC to the RCC and appointed himself as chairman of the IAEC. He then appointed Dr. Khalid Ibrahim Saeed as deputy chief for overseeing the IAEC and the nuclear weapons effort (Hamza, 2000). In June 1974, a delegation from the IAEC traveled to Paris to negotiate the purchase of the French reactor. The reactor, named Osirak by the French and Tammuz-1 by Iraqis, was a large materials reactor that was considered to be inappropriate for beginning a peaceful nuclear program but rather for irradiating target material with the ability to producing plutonium-239. During the negotiations, the delegation also pursued a contract for a low-power reactor called Tammuz-2 (Hamza, 2000).

The clandestine nuclear weapons program continued to grow with a secretive operation at the Al-Hazen Ibn Al Hayatham Center for Research. The research conducted centered around laser and optics technology necessary for carrying out the atomic vapor laser isotope separation (ALVIS) enrichment process, which could be used to enrich uranium. The research facility was able to take advantage of British and American university contacts to gain information and be able to procure funding from Saddam to further research at the facility (Hamza, 2000). In 1975, Dr. Hamza and Dr. Hadi al-Obeidi attended a nuclear developments conference in Santa Fe, NM. While at the conference, they inquired about information concerning ALVIS technology and whether or not Israel had used this method to enrich uranium for their nuclear weapon. During their visit, Dr. Hamza and his colleague visited the National Electrostatic Corporation (NEC) headquarters in Madison, WI to inquire about purchasing a Pelletron accelerator (Albright et al., 1999).

Additional program acquisitions in the late 1970s occurred in 1976 with the finalization of the French contract for Tammuz-1 and Tammuz-2 along with a materials testing hot laboratory, workshops, and a radioactive waste treatment station. Then in 1979, Iraq signed a contract with the Italian firm SNIA-Techint to purchase a plutonium separation handling facility and a uranium refining and fuel-manufacturing plant. The Italian facilities were not subject to IAEA safeguards (Hamza, 2000).



Other key events that occurred in the 1970s that shaped Iraq's nuclear program were the saboteur attacks on Tammuz-1 and Tammuz-2 while their reactor cores were in storage in Seyne-sur-Mer awaiting shipment to Iraq, which forced the Iraqis to either accept the damaged reactors or be forced to wait two years. The Iraqis decided to accept the damaged reactor cores (Hamza, 2000). Another key event and probably the most important occurred on July 16, 1979, when Iraqi President Al-Bakr was forced to resign his position allowing Saddam to take over as president and chairman on the RCC (Hamza, 2000).

## **5. Development of Clandestine Nuclear Program (1980s)**

The 1970s saw the foundation for Iraq's clandestine nuclear weapons plan being forged. The 1980s would see a continuance of the quest to produce a nuclear weapon through acquisition and assistance. The first form of assistance came from the Swedish company Brown Boveri, who was contracted to design calutron magnets under the guise of a peaceful research project (Hamza, 2000). The next form of assistance included Brazil secretly providing nuclear assistance in the form of photogrammetry and location of uranium ore. Brazilian assistance also included a five-year industrial project to supply a facility to convert uranium yellowcake into uranium dioxide (Weissman, 1981). Without having the indigenous capability to develop and sustain its nuclear program, outside assistance became the cornerstone as cited in a December 3, 1981 Congressional Research Service report provided to the Senate Foreign Relations Subcommittee on Arms Control. In the report, assistance from Brazil for nuclear technology and training; Italy for hot cell insulation units of the nuclear reactor; and Portugal for supplying uranium are cited (Willis, 1981).

Late in 1981, Iraq settled on a strategy for acquiring weapons grade nuclear material. The primary strategy chosen to enrich uranium was to use electromagnetic isotope separation (EMIS) with a secondary strategy of gaseous diffusion. The EMIS program would be comprised of three stages and would run throughout the decade (Secretary General, 1997). With a strategy chosen, in 1982, the Office of Studies and Development (OSD) was established with a mission to secretly pursue uranium

enrichment and weapons activities. Establishment of the OSD was just the first step of a decade long expansion of the Al-Tuwaitha site to enable the clandestine approach to produce a nuclear weapon.

Other acquisitions that resulted in progression and expansion of the program were made in the late 1980s. For instance, in 1987, Iraq signed a \$600 million dollar deal with the Yugoslavian Serbs to build a magnetic uranium enrichment facility. In addition, Dr. Hamza, in August 1987, traveled to Germany to purchase a foundry capable of manufacturing high-precision bomb components. He and his associates tried to disguise the purchase as a means to be able to commercially purify tungsten. The representatives from Degussa and Leybold were immediately able to see the real reason for the transaction but they went ahead with the sale. During his visit, Dr. Hamza was in the market for a camera used for photographing explosive sequences and desktop computers (Hamza, 2000). For the remainder of the 1980s, Dr. Hamza continued his travels with specific intentions on purchasing the necessary equipment that would be required to successfully complete the nuclear weapon project. Saddam had given him an open checkbook to achieve the desired endstate.

## **6. Invasion of Kuwait Ends Nuclear Weapons Program**

The 1990s show a continuance in the efforts to produce a nuclear weapon through such means as installation of required equipment at the Al-Tarmiya nuclear site. As a means to tighten security surrounding the clandestine program, personnel, equipment, and testing systems pertaining to the weapons effort are transferred from Al-Tarmiya and other nuclear sites to the Al-Atheer nuclear site. Al-Atheer was the research and development site for the nuclear weapons program and its existence would remain undisclosed until after the end of the Persian Gulf War. Likewise, the significance of this clandestine site would not be known until the defection of Hussein Kamel in 1995 (David Albright & Mark Hibbs, 2002). Other nuclear weapons projects continued to prosper at the Al-Tuwaitha and Al-Tarmiya sites. On August 2, 1990, Iraq invaded Kuwait. This event foreshadowed the end of Iraq's ability to continue to grow its nuclear facilities and its ability to produce a stockpile of nuclear weapons. However, in an effort to produce a

single nuclear weapon, Hussein Kamel initiated a crash program to extract highly enriched uranium for their stock of safeguarded highly enriched uranium fuel. The goal was to have the weapon built by the end of February 1991 (Hamza, 2000). This attempt was never completed as the Allied campaign; Operation Desert Storm began on January 17, 1991 and continued until a cease fire was declared on February 28, 1991. Perhaps the most critical impediment to Iraq's quest was the Allied bombing campaign in January 1991, which destroyed the Atomic Energy headquarters building along with three of the nuclear sites to include Al Sharqat, Al Tarmiya, and Al Tuwaitha. The Al Atheer site survived with only the explosives bunker damaged (Hamza, 2000). Salvageable materials from all of the nuclear sites are collected and redistribute to various locations and storage facilities.

## **7. Early Preemptive Efforts Against Iraq's Program**

There were three preemptive events against Iraq's quest to become a nuclear power that occurred in the late 1970s and early 1980s. The first event occurred on April 6, 1979, when the French acquired reactor cores of Tammuz-1 (Osirak) and Tammuz-2 (Isis) where damaged by saboteurs while in storage at a warehouse in the town of Seynesur-Mer. At first, a group of French environmentalists laid claimed to the event. However, upon further investigation by authorities, it was deemed that the bombing had been carried out by a group of professionals. The Mossad, Israeli Institute for Intelligence and Special Operations, were believed to have carried out the bombing. As a result of this event, the reactor cores received hairline fractures and the French informed the Iraqis that the timetable for manufacturing new cores would be two years. In order to not have the program regress, the Iraqis agree to accept the damaged reactor cores (Weissman, 1981).

The next event occurred on September 30, 1980 during the onset of the Iran-Iraq War. The Israeli Chief of Army Intelligence publically urged the Iranians to bomb the Osirak reactor under suspicions that it was the location in which Saddam was building infrastructure for producing nuclear weapons. During a bombing raid on a conventional electrical power plant south of Baghdad, two Iranian F-4 Phantom jets dropped bombs on

the reactor. However, the ill-trained pilots were unsuccessful in destroying the reactor and its associated facilities. No further air raids were made by Iran on the reactors (Hamza, 2000).

The final preemptive event was carried out by Israel on June 7, 1981 in an operation known as Operation Babylon (codeword Opera). The initiation of the operation came on the heels of failed Israeli diplomatic efforts with French, Italian, and United States leaders. The French were large suppliers of military equipment to Iraq and the Italians did not want involvement in the operation because they were a major importer of Iraqi oil, and they also felt that the situation could be dealt with through diplomatic means. The United States was seen as not having a full grasp of the situation brewing in Iraq and there was influence stemming from the fact that Iraq was fighting America's enemy, Iran (Hein, 2003). Fourteen jets conducted the raid on Tammuz-1 (Osirak) destroying the reactor. The smaller Tammuz-2 (Isis) reactor was not destroyed in the raid. Additionally, the jets focused on the 100 foot long tunnel connecting the Tammuz-1 reactor and a large laboratory facility that was believed to house experiments crucial to the nuclear program. The timing of the raid was such that the reactor fuel, which had been loaded in 1980, had been removed due the Iran-Iraq war and there so that there would be no chance of radiological contamination within the area (Rubin, 1981)

## **8. UN Resolutions to Dissuade Iraq**

### ***a. UNSCR 687***

The set of United Nations Security Council resolutions (UNSCR) passed from 1991 to 1999 toward Iraq were a set of ultimatums geared to formally end their WMD programs and bring all related facilities under strict inspection and monitoring standards. Like with any ultimatum there was both the theory of the way events should unfold and there was the practical/reality that came with implementation. The efforts to implement the UNSCRs as a means to influencing Iraq's programs would see both the theoretical approach and the pitfalls of practical application.

UNSCR 687 was approved on April 3, 1991. Paragraphs 7, 8, and 9 of this resolution underscore the elements of this ultimatum. Under paragraph 7, the UNSC

invited Iraq to reaffirm unconditionally its obligations under the Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on 17 June 1925, and to ratify the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, of 10 April 1972. Paragraph 8 states that Iraq shall unconditionally accept the destruction, removal, or rendering harmless, under international supervision, of the following:

(a) All chemical and biological weapons and all stocks of agents and all related subsystems and components and all research, development, support and manufacturing facilities.

(b) All ballistic missiles with a range greater than 150 kilometers and related major parts, and repair and production facilities.

The final key points to this resolution are brought out in paragraph 9 which concerns the implementation of the provisions brought forth in paragraph 8. The implementation was as follows:

(a) Iraq shall submit to the Secretary-General, within fifteen days of the adoption of the present resolution, a declaration of the locations, amounts and types of all items specified in paragraph 8 and agree to urgent, on-site inspection as specified below.

(b) The Secretary-General, in consultation with the appropriate Governments and, where appropriate, with the Director-General of the World Health Organization, within forty-five days of the passage of the present resolution, shall develop, and submit to the Council for approval, a plan calling for the completion of the following acts within forty-five days of such approval.

(i) The forming of a Special Commission, which shall carry out immediate on-site inspection of Iraq's biological, chemical and missile capabilities, based on Iraq's declarations and the designation of any additional locations by the Special Commission itself.

(ii) The yielding by Iraq of possession to the Special Commission for destruction, removal or rendering harmless, taking into account the requirements of public safety, of all items specified under paragraph 8 (a) above, including items at the additional locations designated by the Special Commission under paragraph 9 (b) (i) above and the destruction by Iraq, under the supervision of the Special Commission, of all its missile capabilities, including launchers, as specified under paragraph 8 (b) above.

(iii) The provision by the Special Commission of the assistance and cooperation to the Director-General of the International Atomic Energy Agency (United Nations Security Council, 1991).

The reality that resulted from this resolution was that Iraq would not declare all the elements within its weapons of mass destruction program. Instead, Iraq would take on a role to effectively deny and deceive UN inspectors while at the same time ramping up efforts to conceal elements of their WMD programs. Additionally, the inability to produce missiles with a range greater than 150 km would allow them the opportunity to research and design systems with shorter ranges having adaptations to longer range systems. It also allowed them to modify full sized aircraft into UAVs as a potential delivery system with obvious ranges greater than 150 km (Director of Central Intelligence, 2002).

***b. UNSCR 707***

United Nations Security Council Resolution 707, adopted on August 15, 1991, was the next ultimatum issued by the United Nations toward Iraq. The key information pertaining to this resolution can be found in paragraph 3(i) to 3(ix), which issued demands to Saddam and his regime. The demands were as follows:

Para 3. Demands that Iraq:

(i) provide full, final and complete disclosure, as required by resolution 687 (1991), of all aspects of its programmes to develop weapons of mass destruction and ballistic missiles with a range greater than 150 kilometres, and of all holdings of such weapons, their components and production facilities and locations, as well as all other

nuclear programmes, including any which it claims are for purposes not related to nuclear-weapons-usable material, without further delay,

(ii) allow the Special Commission, the IAEA and their Inspection Teams immediate, unconditional and unrestricted access to any and all areas, facilities, equipment, records and means of transportation that they wish to inspect,

(iii) cease immediately any attempt to conceal, or any movement or destruction of any material or equipment relating to its nuclear, chemical or biological weapons or ballistic missile programmes, or material or equipment relating to its other nuclear activities without notification to and prior consent of the Special Commission,

(iv) make available immediately to the Special Commission, the IAEA and their Inspection Teams any items to which they were previously denied access,

(v) allow the Special Commission, the IAEA and their Inspection Teams to conduct both fixed wing and helicopter flights throughout Iraq for all relevant purposes including inspection, surveillance, aerial surveys, transportation and logistics without interference of any kind and upon such terms and conditions as may be determined by the Special Commission, and to make full use of their own aircraft and such airfields in Iraq as they may determine are most appropriate for the work of the Commission,

(vi) halt all nuclear activities of any kind, except for use of isotopes for medical, agricultural or industrial purposes until the Security Council determines that Iraq is in full compliance with this resolution and paragraphs 12 and 13 of resolution 687 (1991), and the IAEA determines that Iraq is in full compliance with its safeguards agreement with that Agency,

(vii) ensure the complete implementation of the privileges, immunities and facilities of the representatives of the Special Commission and the IAEA in accordance with its previous undertakings and their complete safety and freedom of movement,

(viii) immediately provide or facilitate the provision of any transportation, medical or logistical support requested by the Special Commission, the IAEA and their Inspection Teams,

(ix) respond fully, completely and promptly to any questions or requests from the Special Commission, the IAEA and their Inspection Teams,

The theoretical purpose of the above language contained within the ultimatum was to immediately allow the UNSCOM and the IAEA full access to inspect and survey all programs and facilities and to fully comply with all other requests made by the teams (United Nations Security Council, 1991).

However, much like the previous resolution, the Iraqi regime refused to adhere to full compliance. According to report prepared for the Director of Central Intelligence, Iraq devised methods of conformity to delay inspection by the UNSCOM. In particular, Baghdad restricted the number of personnel on an inspection team going to a site deemed sensitive to four personnel and denied total access to sites that it declared as sovereign. The effect of this action gave Iraq an advantage over individual inspections. Eventually, larger inspection teams were able to visit sites but only after there had been lengthy negotiations (Director of Central Intelligence, 2002).

*c. UNSCR 715*

Two of the key information elements brought forward in UNSCR 715, adopted October 11, 1991, were in the form of an additional ultimatum being restated and a piece of dissuasion. These information elements are found in paragraphs 5 and 7. Paragraph 5 contains the ultimatum restatement while paragraph 7 presents a dissuasion element as seen below.

Para 5. Demands that Iraq meet unconditionally all its obligations under the plans approved by the present resolution and cooperate fully with the Special Commission and the Director General of the International Atomic Energy Agency in carrying out the plans;

Para 7. Requests the Committee established under resolution 661 (1990), the Special Commission and the Director General of the International Atomic Energy Agency to develop in cooperation a mechanism for monitoring any future sales or supplies by other countries to Iraq of items relevant to the implementation of section C of



resolution 687 (1991) and other relevant resolutions, including the present resolution and the plans approved hereunder (United Nations Security Council, 1991).

Once again, there was an ultimatum that was delivered without full compliance. Iraq continued to manipulate inspection teams and their efforts to fully account for WMD sites, as well as not complying with information requests. As for long-term monitoring, Iraq generally accommodated monitors at declared sites. However, they also continued to obstructed access to sites, and they also manipulated monitoring cameras within declared sites (Director of Central Intelligence, 2002).

*d. UNSCR 1051*

UNSCR 1051 was adopted on March 27, 1996. Paragraphs one and two of this resolution set provisions for approval and implantation of long term monitoring systems within Iraq declared sites. Another meaningful provision within this resolution was the requirement for States to report information pertaining to exports of technologies from their state to Iraq that are subject to notification. Additionally, the States were to report information they may have of attempts of suppliers to circumvent monitoring systems to supply Iraq with prohibited items. The official language of the resolution was as follows:

Para 5. Decides, subject to paragraphs 4 and 7 of this resolution that all States shall:

(a) Transmit to the joint unit constituted by the Special Commission and the Director General of the IAEA under paragraph 16 of the mechanism the notifications, with the data from potential exporters, and all other relevant information when available to the States, as requested in the mechanism on the intended sale or supply from their territories of any items or technologies which are subject to such notification in accordance with paragraphs 9, 11, 13, 24, 25, 27 and 28 of the mechanism.

(b) Report to the joint unit, in accordance with paragraphs 13, 24, 25, 27 and 28 of the mechanism, any information they may have at their disposal or may receive from suppliers in their territories of attempts to circumvent the mechanism or to supply

Iraq with items prohibited to Iraq under the plans for ongoing monitoring and verification approved by resolution 715 (1991), or where the procedures for special exceptions laid down in paragraphs 24 and 25 of the mechanism have not been followed by Iraq.

Adding to the conditions set above in this resolution, there was once again an ultimatum delivered to the Iraq regime. The follow statement was issued.

Para 15. Demands that Iraq meet unconditionally all its obligations under the mechanism approved by this resolution and cooperate fully with the Special Commission and the Director General of the IAEA in the carrying out of their tasks under this resolution and the mechanism by such means as they may determine in accordance with their mandates from the Council (United Nations Security Council, 1996).

Even though this was the fourth consecutive resolution demanding full compliance with the IAEA and UNSCOM inspection teams, Iraq still continued to impede and limit the UNSCOM's tasking through minimizing access to inspection sites and sanitizing the sites before inspectors had arrived. There was also the continual denial of access to requested sites and key personnel. When Iraq was not trying to impede the progress of inspectors, they were gaming the system by promising to comply with the resolutions and then later backing out on the promise to come under full compliance (Director of Central Intelligence, 2002).

*e. UNSCR 1060*

United Nations Security Resolution 1060 was adopted on June 12, 1996. The contents within were set to accomplish two goals. The first goal can be found in paragraph one as follows:

Para 1. Deplores the refusal of the Iraqi authorities to allow access to sites designated by the Special Commission, which constitutes a clear violation of the provisions of Security Council resolutions 687 (1991), 707 (1991) and 715 (1991) (United Nations Security Council, 1996). This portion of the resolution condemns the actions of Saddam and his regime for not conforming to the previous requests for

unobstructed access to designated WMD program sites. The second portion of the resolution with substantial interest is paragraph two. This section issues another ultimatum in the following format.

Para 2. Demands that Iraq cooperate fully with the Special Commission in accordance with the relevant resolutions; and that the Government of Iraq allow the Special Commission inspection teams immediate, unconditional and unrestricted access to any and all areas, facilities, equipment, records and means of transportation which they wish to inspect (United Nations Security Council, 1996).

Even though the UNSC continued with their verbal threats of condemnation and ultimatum deliverances, Saddam and his regime still consistently sought to impede and limit the mission of the UNSCOM by disallowing access to designated WMD sites throughout the inspection process. Aside from blocking access, they also continued to sanitize designated WMD sites ahead of inspection team arrivals, as well as continued to deny access to key personnel within the programs. Saddam and his regime would also continue to play the game of promising compliance with the UNSCRs only later to back out of the situation and continue their denial tactics. This was in an effort to avoid and/or delay consequences (Director of Central Intelligence, 2002).

*f. UNSCR 1154*

The key elements of UNSCR 1154, adopted on March 2, 1998, are listed below. The three sections request procedures for access to Presidential sites by inspection teams, emphasizes the importance of compliance with the resolutions, and states that Iraq's unwillingness to comply has lengthened the imposition of the resolutions. Of particular importance is the ending language of paragraph three where the tone has increased by stating that any violation would result in severe consequences. Instead of wording the opening of the passage as a demand, the UNSC stresses compliance then leaves the result open ended.

Para 2. Requests the Secretary-General to report to the Council as soon as possible with regard to the finalization of procedures for Presidential sites in consultation

with the Executive Chairman of the United Nations Special Commission and the Director General of the International Atomic Energy Agency (IAEA).

Para 3. Stresses that compliance by the Government of Iraq with its obligations, repeated again in the memorandum of understanding, to accord immediate, unconditional and unrestricted access to the Special Commission and the IAEA in conformity with the relevant resolutions is necessary for the implementation of resolution 687 (1991), but that any violation would have severest consequences for Iraq.

Para 4. Reaffirms its intention to act in accordance with the relevant provisions of resolution 687 (1991) on the duration of the prohibitions referred to in that resolution and notes that by its failure so far to comply with its relevant obligations Iraq has delayed the moment when the Council can do so (United Nations Security Council, 1998).

***g. UNSCR 1194***

UNSCR 1194 was adopted on September 9, 1998, with the expressed intention of stressing once again the UNSC's opinion that actions of denial by the Iraqi regime were unacceptable. The two paragraphs below show that the Security Council was once again condemning Iraq for its actions except this time, Iraq had stopped cooperating with the UNSCOM and IAEA teams. The next section was a demand to rescind the suspension of cooperation and fully comply with previous resolutions.

Para 1. Condemns the decision by Iraq of 5 August 1998 to suspend cooperation with the Special Commission and the IAEA, which constitutes a totally unacceptable contravention of its obligations under resolutions 687 (1991), 707 (1991), 715 (1991), 1060 (1996), 1115 (1997) and 1154 (1998), and the Memorandum of Understanding signed by the Deputy Prime Minister of Iraq and the Secretary-General on 23 February 1998.

Para 2. Demands that Iraq rescind its above-mentioned decision and cooperate fully with the Special Commission and the IAEA in accordance with its

obligations under the relevant resolutions and the Memorandum of Understanding as well as resume dialogue with the Special Commission and the IAEA immediately (United Nations Security Council, 1998).

***h. UNSCR 1205***

Much like UNSCR 1194, UNSCR adopted on November 5, 1998, issued a condemnation and a demand. However, this condemnation was for ceasing cooperation with UNSCOM and IAEA inspection teams instead of suspending cooperation. This was a much firmer stance by Iraq in its quest to not come under full compliance with all previous resolutions. The sections below are to show the continued language between the UNSC and Iraq.

Para 1. Condemns the decision by Iraq of 31 October 1998 to cease cooperation with the Special Commission as a flagrant violation of resolution 687 (1991) and other relevant resolutions.

Para 2. Demands that Iraq rescind immediately and unconditionally the decision of 31 October 1998, as well as the decision of 5 August 1998, to suspend cooperation with the Special Commission and to maintain restrictions on the work of the IAEA, and that Iraq provide immediate, complete and unconditional cooperation with the Special Commission and the IAEA (United Nations Security Council, 1998).

***i. Implementation Results of Res. 1154, 1194, 1205***

The aforementioned resolutions all had one thing in common, condemning Iraq for its noncompliance and demanding that Iraq fully comply with previously passed resolutions. Iraq's actions directly affected the ability of the UNSCOM to carry out its mission. Without compliance from Iraq, the UNSCOM could not carry out its full mandate as established by the Security Council. Iraq, instead of trying to cooperate with the UNSCOM, decided to negotiate with the Secretary General because it believed that this individual would be more sympathetic to Iraqi needs (Director of Central Intelligence, 2002).

*j. UNSCR 1284*

UNSCR 1284, adopted on December 17, 1999, dissolved the UNSCOM and established the United Nations Monitoring, Verification and Inspection Commission (UNMOVIC). The mission of UNMOVIC was to carry out the same mandate as the UNSCOM. The resolution, as stated below in paragraph four, also demanded that Iraq allow the UNMOVIC immediate access and unrestricted access to all WMD inspection sites. This was the same mandate that was supposed to be afforded the UNSCOM inspection teams.

Para 1. Decides to establish, as a subsidiary body of the Council, the United Nations Monitoring, Verification and Inspection Commission (UNMOVIC) which replaces the Special Commission established pursuant to paragraph 9 (b) of resolution 687 (1991).

Para 4. Reaffirms its resolutions 687 (1991), 699 (1991), 707 (1991), 715 (1991), 1051 (1996), 1154 (1998) and all other relevant resolutions and statements of its President, which establish the criteria for Iraqi compliance, affirms that the obligations of Iraq referred to in those resolutions and statements with regard to cooperation with the Special Commission, unrestricted access and provision of information will apply in respect of UNMOVIC, and decides in particular that Iraq shall allow UNMOVIC teams immediate, unconditional and unrestricted access to any and all areas, facilities, equipment, records and means of transport which they wish to inspect in accordance with the mandate of UNMOVIC, as well as to all officials and other persons under the authority of the Iraqi Government whom UNMOVIC wishes to interview so that UNMOVIC may fully discharge its mandate (United Nations Security Council, 1999).

In reality, this resolution gave the UNMOVIC chairman less authority than the previous UNSCOM chairman. Additional changes with this resolution were a greater role of the Security Council in defining disarmament tasking and it also required that inspection team members be full time United Nations employees. However, Iraq still

continued to reject the return of inspection teams under the premise that it had fulfilled all of its requirements in relation to the resolutions of disarmament of WMD (Director of Central Intelligence, 2002).

## **9. Summary**

The overview and development of Iraq's nuclear program within this case study shows not only influences that led to the militarization of the nuclear program but they also showcase how easy it was for Dr. Hamza to travel throughout the West and flaunt Saddam's oil money. Third party participant interaction also affected the outcome of Iraq's nuclear weapons program, Iran—Israel—U.S.

Furthermore, the major resolutions outlined from 1991 through 1999, show that the deterrence/dissuasion measures of the UNSC mainly fell on deaf ears within the Iraqi regime. They represented varying measures of ultimatums and coercive diplomacy. Perhaps, there are also elements of the carrot and stick approach to an international issue. Are these measures of deterrence/dissuasion effective against a nation-state with a leader and regime structure such as Iraq? The next chapter will address why these measures were or were not effective. In addition, social influence techniques will be discussed that appear or did not appear to have been effective in dealing with Iraq. The last chapter will address how the findings of this case study could shape future deterrence/dissuasion measures against an emerging nation state and its quest to obtain WMD.

## **V. RESULTS/FINDINGS**

### **A. INDIA CASE FINDINGS**

#### **1. Deterrence/Dissuasion Measures**

India was a nation whose quest for the development of nuclear weapons was born of the pursuit for nuclear energy vice conventional energy. The ambitions of Dr. Bhabha were fundamental in the creation and establishment of the nation's nuclear program. The bombing of Japan by the United States with atomic bombs began to change the perspective of India's leader. India and other world leader's eyes were now open to the realistic destructive power of such weapons. India's Prime Ministers still tried to maintain a policy of peaceful uses of nuclear energy with no desire to pursue nuclear weapons. This message was the cornerstone of statements made by the India's Prime Ministers. Developing nuclear weapons early on in the program development would have had both political and economic consequences. However, progression in the development of their nuclear power infrastructure continued to blossom and India eventually was able to complete all the nuclear processes indigenously. Only when threatened by the bordering nation states of China and Pakistan did India form a divergent path in its nuclear program for the production of nuclear weapons as a deterrent and power balancing mechanism.

In the early 1960s, based on the progression of the nuclear program, the idea that India could produce nuclear weapons had become very clear. The nation still maintained a peaceful use of nuclear energy policy, however, there was a caveat to the policy that expressed India's prerogative to develop nuclear weapons if pushed to do so. A cease fire in the Indo-China border conflict occurred in November 1962 and India was still maintaining its peaceful nuclear energy policy. Then in October of 1964 China conducted its first nuclear test. China had stepped onto the stage as a nuclear power and India not only considered its own security to be in jeopardy but also world security. One of the triggering points that pushed India to develop nuclear weapons had just occurred.



Even after the Chinese nuclear test had occurred, the Indian Prime Minister was still hesitant to fully pursue nuclear weapons. India still maintained its policy of peaceful nuclear research and development. Then in 1974, India surprisingly tested fission devices in an underground test claiming that the test was done in a peaceful manner and for research purposes. The program continued to grow and internal pressures from opposition parties within parliament began to increase the scale of arguments for developing nuclear weapons.

The next triggering point would be the border conflict between India and Pakistan that took place between November 1986 and March 1987 in two primary areas, Kashmir and the desert area of Rajasthan known as Operation Brasstacks. In March 1978, Pakistan claimed that it had maneuvered a nuclear bomb near the border and as a result, there was an apparent fear of nuclear war. India could no longer rest on the security of its conventional forces, the UN, or its allies and was forced to pursue nuclear weapons in order to try and balance the power within the region and not be subject to intimidation. Progression in the development of nuclear weapons continued and in 1998 under the leadership of the BJP party, India conducted a two part nuclear weapons test. India has not tested since.

Deterrence/dissuasion measures used against India for testing the devices in 1974 were felt on a national level but did not slow the progress of their nuclear program. Pakistan's Prime Minister declared the action as threatening and proclaimed that there was no difference between peaceful nuclear explosion (PNE) and nuclear weapons. Canada, on the other hand, froze assistance to India. The United States concluded that India had not violated any previous agreements and chose not to put pressure on India for its actions.

The second series of tests in 1998 would not bear the same deterrence/dissuasion results. Following that series of tests, the United States, not recognizing the tests as PNE, imposed heavy economic sanctions, Japan imposed its own set of sanctions, and Canada along with Australia halted all assistance to India. The United Nations condemned India for its actions and there was a great cry for others in the international community to condemn India's actions.

## 2. Identification of Social Influence Tactics

Aside from the strategic deterrence/dissuasion influence measures used against India, there were also social influence tactics that could have been utilized. *Norm of reciprocity* is one such tactic. Accordingly, the tactic was designed to trigger a feeling of indebtedness or obligation to the person who has given a gift or performed a favor, and it can be employed when the compliance agent supplies a desired course of action for resolving the indebtedness tension state (Pratkanis, 2007). The United States had a great opportunity to employ this tactic immediately following India's first nuclear test in 1974. The United States took a stance that India had not violated any previous agreements concerning the use of supplied materials.

Instead of doing nothing, the United States should have invoked a stronger diplomatic stance by claiming that they would not take any diplomatic, economic, or military action against India if India were to sign the NPT and comply with the tenets of the treaty. The favor afforded India would have been no punitive action taken; while the reciprocating action of India would have been to align itself with the NPT. However, the United States did not seize the moment to invoke this tactic. Had the United States implemented this tactic to its fullest extent, then the nuclear testing in 1998 could possibly have been prevented. Additionally, instead of using *norm of reciprocity*, this would have been the perfect opportunity to invoke the *fear appeals* tactic. The United States, along with its allies, could have influenced India to sign the NPT or risk facing harsh economic sanctions or military intervention, if the NPT were not signed within a given time frame. The two tactics previously discussed could be used in sequence in this case to achieve greater success. If the reciprocation action does not take place, then the fear appeals actions can be implemented. India would have had two choices: sign and comply with the NPT or risk adverse actions being taken.

Other social influence tactics that were present were *fear appeals*, *public audience*, and *guilt sells*. This set of social influence tactics were played out following India's series of nuclear tests in 1998. The first social influence tactic to address is *fear appeals*. The purpose of this tactic was to create fear by linking an undesired action with negative consequences, or a desired action with the avoidance of a negative outcome

(Pratkanis, 2007). This person-to-person tactic is in line with George's concept of issuing an ultimatum. In India's case, this tactic can be seen being utilized during several instances, the first was India's fear of China and Pakistan based on the perceived national security threat. The second place was the severe economic sanctions placed on India by the United States and Japan following the series of nuclear tests in 1998. It was also present when the UN demanded that India refrain from conducting any future tests. However, the implementation of *fear appeals* does not appear to have achieved full effect because India still continued to build their nuclear infrastructure and arsenal due to the perceived regional threat. There were no additional actions taken by any of the stakeholders once the demands were issued to prevent India from continuing to bolster its nuclear infrastructure. The partial effect comes from the fact that India has not conducted another nuclear test. Full effect would have seen more severe actions taken against India and a halting of the progression of their nuclear weapons infrastructure. In this instance, there was a message with an associated action and an alternate path for India existed. However, the actions against India were too late. The perceived regional threat by China and Pakistan had already breached their security threshold. Under the Prime Minister during this period, not developing nuclear weapons as a deterrent was not an option. One influence measure that could have been effective would have been to minimize the BJP party in parliament earlier on; thereby reducing the potential for a leader with a manifest to produce nuclear weapons to come to power. Coupled with this action, there would have also had to be greater transparency among regional nations with regards to their nuclear intentions. Greater transparency could have lowered India's perceived security threat and therefore they may have not felt the need to obtain a power balancing entity such as a nuclear weapon.

The next social influence tactic, *public audience*, can also be seen at play in India's case. This social influence tactic relies on the presumption that the presence of an audience can increase concerns for maintaining a positive public image; thus resulting in increased compliance when the request is one that is socially approved (Pratkanis, 2007). In India's case, the public audiences were the BJP opposition party in parliament and the international community. The BJP opposition party lobbied heavily for India's Prime

Minister in 1998 to continue the projection that nuclear weapons were not being considered by India and that the cost-benefit of development of nuclear weapons was ill fated. Additionally, the international community worked to try and persuade India to fall under the NPT and CTBT in order to maintain transparency and continue the projection of a peaceful nuclear nation by invoking the tactic: *define and label an issue in a favorable manner*. Previous diplomatic talks with India's Prime Ministers were geared toward defining how the NPT and CTBT could have a positive effect on India. The *public audience* tactic did not work in India's case because of the strong notions of the BJP party to develop nuclear weapons as a method of self-defense and deterrence. Maintaining a positive public image in the eye of the international community, while talked about at the highest levels, was not strong enough to overcome the BJP manifest. However, what could have made this tactic work, at the international level, would have been to minimize or eliminate India's perception that the NPT and CTBT created a world of nuclear haves and have-nots. This action could have moved India to sign both treaties and would have had the potential to make India's peaceful image stronger and given India a role in preventing other nation-states from producing and proliferation nuclear weapons by making them a leader in the region for nonproliferation. In this case, the tactics of *define and label an issue in a favorable manner* and *public audience* should be used in tandem with one another to achieve the greatest potential success. The first helps shed a positive light on the issue while the second tactics pushes for compliance with an international norm.

The final social influence tactic that can be seen at play with India's 1998 nuclear tests was *guilt sells*. This particular tactic works by projecting some feeling of responsibility for some wrongdoing or transgression with the intention of inducing a desire to make restitution and to repair self-image (Pratkanis, 2007). Though not fully accomplished in India, its influence can be partially seen. Pressure from the international community toward India for its actions in 1998 can be seen as a time in which the intent was to make India feel guilty for conducting the nuclear tests, especially given that India's historical stance was one of peaceful nuclear uses and restraint toward developing nuclear weapons. The reaching out of the India's Prime Minister in a personal manner to

explain to President Clinton why India tested nuclear devices can also be seen as a personal invocation of guilt. The Indian Prime Minister stated:

We value our friendship and cooperation with your country and you personally. We hope that you will show understanding of our concern for India's security. I assure you that India will continue to work with your country in a multilateral or bilateral framework to promote the cause of nuclear disarmament. (Vajpayee, 1998)

The intent to repair self image was only partially achieved. The Indian Prime Minister's expression of how much the friendship with the United States and in particular the President is the signal of feeling guilty for carrying out the tests. The remainder of the passage is focused on repairing India's image in the eyes of the United States and world for their wrongdoing. Since this exchange, India has not conducted further nuclear tests but it did continue to develop a strong nuclear weapons infrastructure. If India had halted the development of its nuclear weapons infrastructure and eliminated its devices the result of full image restoration with the United States as well as the international community could have been successful. Furthermore, adhering to the tenets of *norm of reciprocity* could have done wonders in repairing their image. This would have been accomplished by immediately signing both the NPT and the CTBT and submitting itself to monitoring and inspections. It appears that these two tactics can be utilized in conjunction with one another to formulate a greater success whether they are invoked by an outside influence or internal influence.

The situation in India was one which nuclear weaponization occurred quite differently. The democratic governmental structure and leadership played critical roles in nuclear weapons restraint. In the end, regional threats drove India to produce nuclear weapons. National deterrence/dissuasion efforts were made against India with mixed success. Likewise, a set of social influence tactics, as discussed above, would have seen the same result of mixed success in their full implementation. With only partial success achieved, the only other logical step would have been to change the strategy used toward India to persuade them to fall under the umbrella of the NPT and CTBT. The change in strategy would have included using the aforementioned tactics in concert with one another to achieve a greater rate of success. As well as using the tactics in tandem with

one another, a better use of *defining and labeling an issue in a favorable manner* would have gone a long way to potentially achieving the desired outcome. In the end, a critical analysis of the situation must take into account all of the relevant factors in order to determine the best mix and/or sequencing of tactics to gain the greatest success.

### **3. Change in Strategy**

Methods of deterrence/dissuasion used against India have been identified and discussed as well as a set of applied social influence tactics. The implementation of both appears to have mixed results. How then could have total success been achieved in India to stop their quest to bolster their nuclear weapons program? The work of Maria Rublee in the area of nonproliferation norms may lend a solution. Her work focused on why states choose nuclear restraint and in turn do not develop a nuclear weapons capability. In her analysis, there are three views from which to look at why states do not pursue nuclear weapons. The first view centers on security from a threat while the second and third are concerned with a cost-benefit analysis and social identity, respectively (Rublee, 2009). Her case studies included the following nation-states: Japan, Egypt, Libya, Sweden, and Germany. The primary focus was on Japan and Egypt.

It is perhaps the Egyptian model that most closely relates to the situation in India. Egypt wanted to be known as a regional leader much like India. After being readmitted into the Arab League in 1990, Egypt wanted to quickly reassert its diplomatic leadership. The following passage represents their aspirations.

The peace process began in earnest in October 1991 in Madrid with Egypt resuming its desired central role. Egyptian political commentator Salama Ahmed Salama has echoed Cairo's views on its pivotal position in the peace process by stating "no one can deny Egypt its historical regional role, particularly after the machine guns fall silent and negotiations are concluded." Other Egyptian commentators have argued that Egypt "is one of the few countries whose foreign role surpasses its human and material potential" and as an example of this, have cited that since 1990, "Egypt has shouldered the responsibility of sponsoring the peace process." (Rublee, 2009)

The aforementioned passage shows that Egypt firmly saw itself as the leader in the Middle East. The next passage shows Egypt's activist role on nuclear nonproliferation and its leaders' understanding of that role.

Leading the charge on the nuclear issue may have been an attempt to restore Egypt's leadership in the Arab world by making it appear as the guardian of the Arab states' security interests. Egypt's tough position also made Cairo a central address for appeals for indefinite extension of the NPT. Thus, Egypt's militant position may have been intended to compensate for its domestic troubles and diminished standing in regional affairs. This became increasingly apparent as the NPT campaign evolved; Egypt's position evoked strong nationalist sentiments, increasing domestic support for the Mubarak government. (Ruble, 2009)

Governmental self preservation and stance as a nuclear nonproliferation leader in the Middle East are very apparent from both passages, and thus, led to a situation where the nation-state did not pursue nuclear weapons.

Additionally, breaking down Ruble's strategic view points and how they played out in Egypt could lead to implications for India. Ruble's first viewpoint is taken from a realism perspective with focus on security. Under this perspective, there are five key points that cause nation-states not to develop nuclear weapons. The points are: lack of security; lack of regional security; security guarantee; nuclear weapons make state a target; and alternative WMD provides deterrent (Ruble, 2009). In the case of Egypt, the first two failed because Egypt has lost four wars to a nuclear-armed neighbor. The third point fails because Egypt did not have any credible security guarantee. The fourth point fails as well because the only "target" concerns related to potential targeting of nuclear facilities—and this arose in 1981 when Israel bombed Iraq's Orirak reactor, after Egypt's nuclear option was already closed (Ruble, 2009). The final key point under this perspective was considered to be important but not sufficient. The Egyptian elite did rely to some extent on chemical weapons capability but still chose to aggressively pursue other ways to counter the Israeli nuclear program (Ruble, 2009).

In applying the same five key points to India, the first two key points pass the expectations; India had two bordering nuclear threats, China and Pakistan, and chose to develop nuclear weapons as a deterrent and power balancing mechanism. The third key

point fails because India did not receive a credible security guarantee from the United States or UN. India's refusal to sign the NPT and CTBT were hindrances. The fourth key point that nuclear weapons weaken security passes in the India case. India went forward and developed nuclear weapons and as a result brought national security attention to themselves from not only their immediate neighbors but also the international community. The final key point of this perspective would be considered a failure. India developed a chemical weapons capability but still aggressively pursued nuclear weapons. Having an alternate WMD did not prove to be a nuclear weapons deterrent.

The next strategic perspective put forth by Rublee was neoliberal institutionalism which focused on two key points, the NPT's material benefits and escaping the security dilemma. Applied to Egypt, both failed. The first failed because Egypt did not ratify the NPT, and thus become eligible for its material benefits, until after the nuclear option was closed (Rublee, 2009). The second key point failed because Egyptian elites recognized more than perhaps any other state that limits of the NPT, given Israel's refusal to join and the fact that three neighbors were all members of the NPT yet were known to be working on nuclear weapons (Rublee, 2009).

Applying the two key points of Rublee's neoliberal institutionalism perspective shows failure in both for similar reasons. India did not sign the NPT due to previous stated objections to the document. Therefore, India could not have been afforded the associated material benefits. Much like Egypt, the second key point fails because India recognized the limits of the NPT. There were loopholes in the import and export regulations as well as a missing time line for nuclear weapons reduction and disarmament. India believed that NPT and CTBT separated the world into the nuclear haves and have-nots.

Rublee's last strategic perspective is constructivism. This perspective has three key points that focus on persuasion, social conformity, and identification. The key points are: changed thinking about security; calculation of social costs and rewards; and desire to create or maintain important relationships. Egypt passed the first two key points and failed the third. Egypt was able to reconceptualize their security, including what constituted a legitimate way to deal with an enemy, leading to a devaluation of nuclear



weapons. In addition, some part of Egypt's diplomatic corps was likely convinced that nuclear weapons were truly not the best route for Egypt (Rublee, 2009). The second key point passed because Egypt was able to realize that the emerging nuclear nonproliferation regime created new benefits for nuclear forbearance—including the ability to shame Israel and gain status in the Arab world. This realization caused Egypt to recalculate the costs and benefits of their nuclear weapons policy resulting in Egypt signing the NPT (Rublee, 2009). However, the third key point failed. The Egyptian's never seemed to place great emphasis on having a friendship with the United States. In Egypt's case, they joined the New Agenda Coalition, which blasted the nuclear weapons states for lack of disarmament progress (Rublee, 2009).

Looking at these three key points, India would have failed all three key points of the conservatism perspective. For the first, there were political opposition parties within the Indian parliament that early on pushed heavily for the nation to develop nuclear weapons. Eventually, the BJP party gained power and placed India on the nuclear weapons stage with a series of tests in 1998. India had succumbed to internal governmental persuasion. The second key point failed because in their cost-benefit analysis of developing nuclear weapons, India determined that the security benefit nuclear weapons provided them was much greater than the costs in terms of conforming to the nuclear nonproliferation regime. The final key point fails as well. India was never able to identify itself with the nuclear superpowers because of the perceived differences in the language of the NPT and the CTBT. In India's eyes having no tangible timelines or progression toward full disarmament of all nuclear nations was a deal breaker and therefore, there was an inherent inability to align with one of the world's nuclear superpowers. However, Rublee's constructivism perspective viewpoints could have applied to India given that Prime Minister Gandhi invented shame as a political tool.

Based on the above evaluation and comparison, areas can be identified where the strategy against India could have been changed to affect an outcome where India would not have continued to develop a robust nuclear weapons program. The first place strategy could have been altered is in the realm of regional security. The United States or UN could have taken a strong stance against China for its tests conducted in 1962 thus toning

town the perception of a regional threat. In addition, greater diplomatic efforts could have changed the outcome of the India-Pakistan border conflict which resulted in nuclear rhetoric exchange between the two nations and the claim from Pakistan that it had positioned a nuclear weapon near the border. Institution of a different strategy in this instance could have prevented the series of nuclear tests in 1998.

Another area of strategic change could have been in the form of changing the language of the NPT and CTBT. This would have been a much more difficult task given the complexity of dealing with other nations' needs. Trying to persuade the other nuclear nations to completely disarm in a timely fashion would have been almost impossible. But making perceived positive strides in the matter could have slowed the progression of India's nuclear weapons program. Persuading India that the language of the NPT afforded them a greater security was given great emphasis, but the language contained within the document did not change to meet India's needs.

Finally, a strategy to persuade the BJP party to conduct a critical cost-benefit analysis and realize that despite their campaign aspirations, nuclear weapons were not the right choice for India would have been ideal. By changing the mindset of the BJP leader, potential for India to have slowed its nuclear progress and align with a nation such as the United States may have existed. Persuading the BJP leader to conduct such an analysis himself or doing it for him through diplomatic channels would have shown that the effects on India of conducting nuclear tests outside of the purview of the NPT would have been disastrous. It would have foreshadowed the economic sanctions and breaking of nuclear agreements by currently supporting nations. In the end, the lack of such efforts, allowed India to exercise its pre-stated intentions to form a divergent path in its peaceful nuclear program and develop nuclear weapons in the face of a perceived neighboring threat. Earlier invocation of the aforementioned tactics and deterrence measures could have shifted the path India chose to take in their production of nuclear weapons.

## **B. IRAQ CASE FINDINGS**

### **1. Deterrence/Dissuasion Measures**

The case study of Iraq's quest to obtain nuclear weapons capability was one in which the idea was born out of national security concerns and self preservation through clandestine means. Regional security concerns from Iran and Israel were the driving forces. However, it was Iraq's method of approach in obtaining such weapons through imports of dual use technologies; the seemingly limitless use of oil money; and development of an infrastructure in which little was known about ongoing operations within that causes pause for concern. From its onset, the nuclear weapons program and its infrastructure were developed in a very clandestine environment. Conscious efforts were made by Dr. Hamza and his delegation to circumvent the import and export mandates of the NPT, of which Iraq was a signatory. Another measure taken by Iraq to ensure the security of its program was the infiltration of regime members into the IAEA for monitoring purposes. Led by Dr. Hamza's open checkbook supplied by oil money, the nation attempted to build one of the world's most devastating weapons. Had Saddam not invaded Kuwait, Iraq may have succeeded in producing a nuclear weapon.

Having some knowledge of the origins of Iraq's nuclear weapons program, what were the strategic deterrent/dissuasion influence measures used to prevent further development of the program and the production of a nuclear weapon? The first measures were preemptive in nature. There was the saboteur attack on the French reactor cores in 1979 while they were awaiting shipment to Iraq. The result of the attack caused small fractures in the cores forcing the Iraqis to reconsider their options. They accepted the reactor cores and continued to press forward. Attempt number one failed to halt the development of Iraq's nuclear program but instead caused a delay in its development. Following this attempt was the preemptive air strike by Iran on the Osirak reactor in September 1980. The mission was a failure as the pilots missed their target. Once again, the attempt to strategically deter/dissuade the Iraqis nuclear progression failed. The final preemptive event was the Israeli attack on the Osirak and Isis reactors in June 1981 known as Operation Babylon. This air strike destroyed the Osirak reactor and some of the surrounding infrastructure. The smaller Isis reactor was not damaged. To the Israelis,

they had sent a message to Saddam concerning his quest to produce a nuclear weapon. Overall, this effort failed as Iraq would continue to increase their nuclear infrastructure and continue pursuit of a nuclear weapon.

The preemptive measures presented above to deter Iraq from furthering their nuclear program were all kinetic in nature and not focused at the correct target. Instead of focusing on taking out the pieces of the up and coming nuclear infrastructure, efforts should have been put forth to directly target Saddam and his regime. Taking out the reactors did not provide any incentive for Iraq not to continue in their quest. After all, Saddam had a great deal of money and could just purchase more materials and build more facilities. Saddam, himself, was the sole decision maker for the nation-state and therefore targeting him with nonkinetic influence measures and not the infrastructure would have seen the greatest deterrence success.

The most elaborate deterrent/dissuasion attempted measures were induced on the heels of Iraq's invasion of Kuwait in August 1990. The strategic measures introduced were the Iraqi Sanctions Act of 1990 and a set of nine principle UN resolutions that occurred from 1991 to 1999. Although Iraq was unable to produce a nuclear weapon in the end, the outcome of the resolutions levied against them can be looked at as failed measures. They are considered as failed measures because Iraq did little to comply with the resolutions and as seen from Dr. Hamaza's recounts of the situation, Iraq still continued to work toward designing and developing a nuclear weapon.

## **2. Identification of Social Influence Tactics**

The previous discussion centered on the strategic deterrent/dissuasion influence measures used against Iraq which were mainly in the form of physical attacks and the imposition of the UNSC resolutions that were geared toward instilling fear and delivering ultimatums. The next step was to look at social influence tactics to determine if any of them would relate to the strategic measures used and to determine if they would or would not have been effective in this case and why.

The first social influence tactic for consideration is *coalition formation*. According to Pratkanis, this tactic is considered for use when the decision at hand

involves more than two participants. He also expresses that there is a greater possibility that the decision outcome will be a product of the *coalition formation* and not principle, reason, or self-interest of the whole (Pratkanis, 2007). As an example, an outcome of the U.S. House of Representatives was presented. This tactic assumes that all parties involved in the decision making process will be able to set their differences aside and make a decision for the greater good of the whole. Would this tactic have worked in the Iraq case? The answer is, no. Israel's decision to push forward alone with Operation Babylon represents the failure.

Israel had been in diplomatic talks with the French, Italians, and the United States over growing concerns with Iraq's nuclear program and how to proceed. All parties having knowledge of the situation failed to come to a consensus on the most likely course of action because each nation state was unable to put their own interests aside and focus on the route issue to produce a *coalition formulation* result. The French supplied Iraq with military equipment, the Italians were major oil importers of Iraq, and the United States was influenced by supporting Iraq in the Iran-Iraq war. No formulation of a diplomatic decision ever occurred thus forcing Israel to act alone and therefore potentially lessening the effectiveness of the outcome.

Since Israel was unable to achieve success using the *coalition formulation* tactic, they should have adjusted and used the *foot in the door* tactic against the French, Italian, and the United States to achieve their greater goal. By implementing this tactic, Israel could have potentially gotten each nation-state to perform a small action such as increased surveillance and intelligence collection and then once the right pieces of the puzzle were presented, they could have had a better chance of success with forming the coalition to conduct a large-scale combined strike on the Iraqi nuclear infrastructure. By combining the two, the rate of success would appear to be greatly increased. The only caveat to this approach would have been the amount of time required to meld the two tactics to achieve the over-all goal and would Israel have been willing to wait that long.

The next social influence tactic analyzed was *fear appeals*. The purpose of this tactic is to create fear by linking an undesired action with negative consequences, or a desired action with the avoidance of a negative outcome (Pratkanis, 2007). This person-

to-person tactic is in line with George's concept of issuing an ultimatum where there is a demand/threat communicated with a negative outcome if not adhered to. This action can be seen in the case of Iraq with the issuance of UN resolutions throughout the 1990s. The language of the resolutions was presented in the form of demands/ultimatums with the intention of striking fear into the mind of Saddam and persuading him to cooperate with the UN and IAEA inspection teams. The strategic attempt did not appear to work nor would the *fear appeals* tactic in this situation.

In the case of the UN resolutions, the undesired action would have been for Iraq to not comply with the demands of the inspection teams and risk some adverse consequence. However, the only negative outcome seemed to be another sanction that demanded compliance and condemned Iraq for its inactions. There was no forceful outcome to substantiate the fear that was trying to be invoked and therefore the tactic fell on deaf ears. To work, there must be the message with force behind it. The message alone will not achieve the desired outcome of influencing the adversary to take the appropriate action.

In order for this tactic to have worked against Iraq or against a future nation-state, there must not only be the message with an action to be taken but there must also be a credible stated consequence. The message must also be targeting the leader directly. In the case of Iraq, the sanctions and resolutions did not have a defined timeline before an adverse action would be taken against Iraq. There were also no definitive actions identified that would have forced Saddam to comply. Had the UNSC resolutions said that Saddam must comply within "x" number of days or "x" forces will destroy all of his nuclear facilities then he may have been more inclined to comply. Additionally, the UNSC resolutions did not threaten the position of Saddam as the leader of his nation. He did not perceive that there was a threat of his removal from power. Through the UN, the international community was simply "yelling" at Saddam but there were no repercussions for not complying. Therefore, for future success in implementing this tactic, the influenced nation-state must know and understand that there is a distinct timeline for

cooperation or there is the risk of an adverse action to be taken against them. In addition, the influencing entity must understand that if the deadline or terms are breached, action must be taken.

Pratkanis' *repetition of a message* tactic can also be applied to the Iraq case study. This tactic focuses on repeating a message over and over to increase the believability and acceptance of the communication. This tactic is intended to work by increasing the liking for something through increasing exposure to it and by increasing the perceived validity of "facts" in the message (Pratkanis, 2007). However, Pratkanis puts forth a warning caveat to this tactic. The warning to the communicator is that repetition of the same message can result in no increase or a decrease in influence because instead of persuading the influenced to act in a favorable manner, it actually motivates the individual to counterargue the message being presented (Pratkanis, 2007). Therefore, the result of continued repetition of the same message can lead to failure of the tactic. This is what appears to have happened in the Iraq case when you look at the language with the UNSC resolutions as outlined in Chapter IV. The resolutions all had a common theme: immediate full compliance with IAEA and UNSCOM inspections teams.

The theme of the message being communicated to Saddam in the UN resolutions throughout the 1990s was the same; comply with the documents risks, demands, and condemnations. Looking at all nine of the major resolutions the language was the same. There was no variation of the theme of the message. Since there was no variation of the message and the result of not taking a favorable action was the same, Saddam was able counter with his own set of actions that were not in line with those intended by the communicator, the UNSC. Perhaps a more successful way to have used this tactic would have been to create world opinion that Saddam's inactions were wrong and not simply focus on trying to change Saddam's perception of the situation. Empty threats do not appear to work against national dictatorship leaders such as Saddam. Success could potentially be achieved by passing fewer resolutions in which there would have been greater granularity and elements of the *fear appeals* tactic weaved in. This way the message does not become stale, the actions and inactions consequences are clearly stated, and a more successful result can potentially be achieved.

The final social influence tactic used in the analysis of Iraq's WMD programs was *being a credible source*. In his explanation of this tactic, Pratkanis established that a source (the communicator) will be more persuasive if he/she is seen by the influenced as being an authority, expert, trustworthy, etc., (Pratkanis, 2007). He also provided many scholarly examples of its application. When applying this tactic to the Iraq case study, it appears to quickly fail.

Even though both Iran and Israel were able to conduct preemptive attacks on Iraq's nuclear facilities, they were unable to establish their military authoritative projection and deter/dissuade Iraq from continuing its pursuit of nuclear weapons. This could have been because they only conducted one air raid each without follow-up. There appears to have been no other attempts either through dialogue or through actions to persuade Iraq to halt its nuclear ambitions. These actions appear to be individual instances carried out by Iran and Israel. It appears that their inability to influence Iraq's progression could be directly related to their inability to establish themselves as credible authoritative military powers with a clear agenda. To show credibility, you must be able and willing to conduct sustained operations in order to achieve your goal and that goal must be met. If your first strike is unsuccessful (Iran's case), Iran would have to have been willing to conduct a second and third strike in order to establish themselves as a credible source of influence sustained through kinetic means.

The UN can also be seen as a failure to establish credibility and influence the progression of Iraq's WMD programs. The UN is considered an authoritative entity and the products produced by the organization seen as expert analysis, their credibility comes into question through enforcement of its products. The UN has no direct enforcement mechanism and instead relies on various member nations to carry out its mandates. Therefore, the resolutions drafted against Iraq by the UN had no means of implementation unless Iraq was willing to directly comply with them. The effect would have been more credible if the UN had organic military assets to back its message. Once again, there is a two part process to establishing credibility, message and action. If both parts of the process are apparent, then *being a credible source* could have been successful against Iraq and can be successful against emerging nation-states.



The aforementioned social influence tactics do not appear to translate to the strategic level given the case of Iraq's WMD. The root cause of the inability to translate ultimately resided in the inability to influence Saddam, as a leader of his nation, to take actions favorable to the communicator. Saddam's perception of region security concerns were apparently strong enough to resist not only national strategic deterrence/dissuasion efforts but to also appear to have been enough to resist person-to-person tactics, if implemented. However, suggestions have been presented that could have led to the successful implementation of the tactics against Iraq or emerging nation-states. How the tactics get implemented is reflective of the situation and how it evolves. Some may have to be sequenced while others suggested may have to be used in concert with one another. The influencer must remain flexible and be able to react quickly to the changing environment.

### **3. Change in Strategy**

Methods of deterrence/dissuasion used against Iraq have been identified and discussed as well as a set of applied social influence tactics. The implementation of both appears to have failed. How then could success have been achieved in Iraq to stop their quest to develop a nuclear weapon? The work of Maria Rublee in the area of nonproliferation norms may lend a solution. Her work focused on why states choose nuclear restraint and in turn do not develop a nuclear weapons capability. In her analysis, there are three views from which to look at why states do not pursue nuclear weapons. The first view centers on security from a threat while the second and third are concerned with a cost benefit analysis and social identity, respectively (Rublee, 2009). Her case studies included the following nation-states: Japan, Egypt, Libya, Sweden, and Germany. The primary focus was on Japan and Egypt.

Rublee's first viewpoint points out that states do not develop nuclear weapons if there is a lack of a threat in general, lack of a regional threat, security guarantees, and alternative deterrence means. Looking at Iraq, this may be why they chose to pursue nuclear weapons. There were direct regional threats from Iran and Israel, as previously discussed. There was also no security guarantees provided Iraq, even though they were a

signatory of the NPT. Additionally, Iraq had an alternative means of deterrence with their chemical and biological weapons. The threat of sovereignty from its neighbors and the perceived impact by Saddam led Iraq to pursue the development of nuclear weapons.

The cost-benefit analysis perspective looks at the material benefit of the NPT, escaping security issues by being a member of the NPT (Ruble, 2009). This too falls short with Iraq. They were a signatory of the NPT and had their own independent conventional energy source. Therefore, according to Ruble, they should have left the NPT to pursue nuclear aspirations (Ruble, 2009). Instead, Saddam remained under the NPT and chose to develop nuclear weapons in a clandestine manner outside of NPT regulations. Perceived national security appears to have been the driving force.

Ruble's final view is one which relies on persuasion, social conformity, and identification (Ruble, 2009). The persuasion portion is centered on security while social conformity is centered on social costs and the desire for social rewards. Identification looks at the high value of a potential or current relationship with a high-status NPT proponent or alliance (Ruble, 2009). All of the proponents, if present, should lead to nation-states forgoing nuclear weapons. Iraq was so driven by security concerns that the aforementioned proponents did not matter. There were no social honors to be gained and Saddam did not seek out alignment with a nuclear power to prevent development of nuclear weapons.

Could the United States have adopted elements of Ruble's strategies and the course of action in Iraq, in terms of the development of nuclear weapons been changed? Perhaps the Japan model may lend the closest correlation. The key tenants for Japan not engaging in the development of nuclear weapons were that Japan was under the protective envelope of the United States, who had demonstrated the use of nuclear weapons on Japanese soil, and the fact that there were not many heated debates within the government to produce nuclear weapons (Ruble, 2009). Japan was a nation-state that had all of the technology and know-how to produce nuclear weapons, yet it has not. Japan's alignment with the United States, a nuclear nation for protection, was a key element.

Turn back the clock with Iraq and perhaps this strategy could have changed the course of history. In the early stages of their program, there was world-wide suspicion that Iraq was developing a nuclear weapons capable program. The United States could have taken a more aggressive diplomatic approach to persuade Iraq to comply with the NPT and align itself with a nuclear nation. Another opportunity for this strategy to work would have been when the United States backed Iraq in the Iran-Iraq War. This would have been the perfect time to invoke great influence and perhaps dissuade Iraq to fully comply with the NPT and fall under a protective umbrella.

For these measures to have worked and changed the course of history it appears that there would have had to be either a different leader in Iraq or a different influence approach directed at Saddam's perception as a national leader. All of the strategic measures begin with the target of influence. When the target is an individual, such as Saddam, who had dictatorship rule over a nation through a reign of fear and was in direct control of all the national assets, the influence measures must focus on that leader's perception of his/her source of power. Unless there would have been influence measures focused on Saddam to influence him to comply with the demands of the UN or be removed from power as the leader of his nation, there is little chance that the conditions set forth by Rublee would have worked.

Other strategies that could possibly have worked in this case would have been direct public diplomacy where there would have been the use of influence directly at Iraqi public decision makers to do such things as reject nukes or divide Saddam's trusted loyal circle. Another strategy that could have worked would have been to try and create a new image for Iraq similar to the one held by Egypt, the peaceful regional leader. Finally, there could have been a stronger strategy addressing Saddam's security concerns with Iran and Israel. Without these strategies in play, the perceived security situation by Saddam along with his disposition was just too overbearing on the decision to produce nuclear weapons.

## VI. CONCLUSION

Proliferation of weapons of mass destruction continues to be one of the United States' and the international community's major security issues. Since the United States dropped atomic bombs on Japan, the production and proliferation of nuclear weapons has shaped the progression of several nation states. While Rublee presented cases for why nation-states did not pursue nuclear weapons, evidence has shown that other nation-states, such as India and Iraq, chose to pursue nuclear weapons for opposite reasons. In the case of India and Iraq, the perceived threat of national security seems to have trumped all other forms of strategic nuclear deterrence. In terms of social-influence tactics that mirrored, or could have been used along with the strategic measures, the same can be said. If the nation-state leader's perceived threat outweighs the perceived benefits of not producing nuclear weapons, then a situation exists where there may not be any means to deter/dissuade the nation-state from producing nuclear weapons. Total elimination of the nation-states nuclear facilities by conducting preemptive strikes or war efforts may be the only means of complete assurance.

Total elimination of a nation-state's nuclear facilities out of fear that the nation-state may one day decide to create a divergent path within the program to produce nuclear weapons would not be a practical approach due to the complexities presented by globalization. Instead, a more practical means to prevent the production and proliferation of weapons of mass destruction among emerging nation-states would through early engagement. Working with other adjacent nation-states through diplomatic exchange to reduce the threat perceived by the emerging nation-state would be just one approach to lowering the security threshold. This could be through the creation of a nuclear free zone within a given region and increasing the level of transparency of military and governmental programs among regional nation-states. Also, persuading the emerging nation-state to sign documentation such as the NPT and the CTBT would also be a key step in deterring and dissuading the nation-state not to produce and proliferate WMD.

Couple these strategic approaches with the social influence tactics discussed in Chapter V and more formidable measures such as sanctions, resolutions, and fear tactics may not have to be invoked.

The following set of measures should be incorporated to deter and dissuade nation-states from producing and proliferating weapons of mass destruction. The measures are as follows:

1. The influencer must be perceived to be credible.
2. A demand or ultimatum to change the nation-state's nuclear weapons course of action must have both a timeline for the required action and a credible enforcement mechanism.
3. Early diplomatic negotiations must occur with the emerging nation-state to lower the emerging nation-state's perceived security threat.
4. International cooperation must exist to make it difficult for emerging nation-states to acquire the technology and materials to produce WMD.
5. Early conformity of the emerging nation-state to the NPT.
6. The adversary must be provided the ability to take an alternate path that is conducive to aiding the situation and not hindering it.

The above list of deterrence and dissuasion measures would greatly enhance the likelihood that emerging nation-states would not produce or proliferate WMD. However, as seen in the case studies, sudden shifts in governmental leadership or regional security have a greater chance of overriding the effectiveness of the measures. Military action may be the required as a last resort.

Now that a set deterrence and dissuasion measures have been identified, what does this study hold for future research? While this study focused on two nation-states, India and Iraq, using only information gathered through open source data, one approach for future research would be to analyze other nuclear nations such as Pakistan, Iran and North Korea utilizing only open source data. Another potential study would be to look at India's and Iraq's nuclear programs using classified materials to determine if any

additional national-strategic measures could have been implemented to halt the production and proliferation of nuclear weapons. Aside from analyzing the material for different national-strategic measures, a new set of social influence tactics could be identified that were not present based on information gathered through open sources. The potential to apply the methodology used in this case study to all emerging nation states seems limitless.

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