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Prospects for Nuclear Non-Proliferation: An Actor-Oriented Case Study of Iran's Future

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by

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Dedication

This work is dedicated to my mom, dad, and grandmother, without whom I would never have been able to finish this writing or my degree. I would also like to give extra special thanks to all my of friends and family who have supported me during this project, and I hope that through this work I may inspire leaders current and future to reexamine our perspective on nuclear issues and the potential for a world free of the specter of nuclear war.

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ABSTRACT

This study is designed to assess the effectiveness of the Nuclear Non-Proliferation Regime and analyze theories for effectively analyzing countries that are a risk for proliferating nuclear armaments. The initial phase of my research is designed to assess the existing literature and primary theoretical approaches for analyzing nuclear non-proliferation initiatives and potential nuclear proliferators. My main means of analysis will be to examine the national and international actors involved in each case. With this method, I plan to analyze a government at the level of each of its ruling institutions. Each of these institutions will be analyzed in the context of Joseph Cirincione's five drivers and barriers: security, prestige, domestic politics, technology, and economics. This study will then review multiple historical cases of countries and treaties related to the nuclear non-proliferation issue in the context of my method of analysis. In particular, each historical study will discuss major actors and institutions with respect to the five major proliferation concepts, as a means of demonstrating the validity of my method. The primary section of my thesis will be the application of my method to one of the preeminent nuclear proliferation threats today: Iran. After a discussion

of the physical status of Iran's nuclear program, I will begin my analysis in terms of my concepts, and will examine the principal actors involved in the Iranian nuclear dispute. These will be the Iran's moderate and conservative factions, as well as the U.S., Israel, the EU-3, and IAEA, and they will be examined in the context of the five drivers and barriers. The final section will be my overall risk analysis for Iran. My preliminary analysis is that regime survival is the most critical issue when it comes to the principal motivations of a state to develop nuclear arms. If this is correct, policy options designed to take advantage of the actors' positions in Iran can be formulated based on the specific conditions that prevail in Iran.

Chapter I-Introduction:

This thesis has been written to try and determine potential solutions to the nuclear proliferation issue, and to examine the topic to explore new theoretical approaches for ways to not only to allow for more comprehensive means of nuclear arms reduction, but also ways to improve means of nuclear non-proliferation (stopping development of nuclear arms before they become an issue), which would make reduction of existing arms easier and less time critical. With this in mind, this study will be conducted as a theoretical comparison of global methods of non-proliferation as opposed to targeted policies designed to affect specific states or regions, and more specifically, to examine the viability of using an institutional and actor based approach in this analysis (as opposed to a strictly governmental analysis). The central case study of this proposed targeted area method is a country at the forefront of the nuclear proliferation issue: Iran. This country has the potential to pose a serious challenge to the non-proliferation regime, and has repeatedly defied both international opinion and U.N. mandate by obfuscating the facts about its nuclear program and purchasing components over the black market. Its bellicose language concerning Israel and the United States and ambitions to become the hegemonic power in the Middle East raise further concerns about the results if Iran does develop atomic arms.

The case of Iran is important for a number of reasons. Iran is already a major regional player in the Middle East, and the development of a nuclear program by the Middle East would have a large number of significant effects. Development of an Iranian nuclear weapon would signal demonstrate the weakness of the existing non-proliferation regime, and cast significant doubt on American ability to contain the spread of nuclear weapons. This could also lead to the expansion of nuclear weapons throughout the Middle East to deter Iran, which would lead to an extremely dangerous multi-polar nuclear standoff in what is arguably the world's most volatile region. Finally, development of Iranian nuclear arms would dramatically reduce American credibility in the region to provide security, and could cause a sharp drop in American influence throughout the Middle East. However, while the United States stands to lose a great deal by the development of an Iranian nuclear option, Iran itself stands to lose more. Development of its nuclear option would likely isolate Iran, cause the United Nations to invoke sanctions, and risk a military intervention from the international community. Iran's pursuit of the full nuclear fuel cycle when there is little benefit and massive cost involved has continued to confuse diplomats and analysts, and the same is true of North Korea. This work seeks to answer one central question: Can analysis of the major national and international actors in a given nuclear proliferation scenario help determine why nuclear proliferator states pursue nuclear weapons in defiance of all conventional logic? The initial hypothesis of this work is that such states will pursue nuclear programs if that state believes that

a nuclear option is vital to the survival of its regime, regardless of the potential international consequences. If this is true, it should demonstrate the ability to formulate an effective policy approach to containing a particular proliferator state. To do this, both historical examples of challenges to the non-proliferation regime and the current case study of Iran will first be broken down into the main actors involved in the crisis. By examining the relationships between these actors, it should be possible to determine the overall principal motivators for a country to produce nuclear weapons in spite of overwhelming international objections. For instance, the belief by the North Korean government that its nuclear weapons are necessary to deter American military would suggest that security would be a principal motivator. This is a simplistic example, but demonstrates the concept. By examining how all of these actors interact within a set framework of accepted motivators (and inhibitors) to developing nuclear arms, it is possible to determine the overall impetus for that country to develop its nuclear program. Once this is complete, knowledge of a state's individual motivations, issues, actors, and conditions will allow for the formulation of a direct policy option for dealing with the problem state.

Chapter II-Literature Review:

Three primary works lie at the foundation of this thesis' approach. These are *Bomb Scare: The History and Future of Nuclear Weapons* by Joseph Cirincione, *The Future of Arms Control* by Michael Levi and Michael O'Hanlon, and *The Nuclear Tipping Point: Why States Reconsider their Nuclear Choices* by Kurt Campbell, Michael Einhorn, and Mitchell Reiss. All of these books attempt to cover different approaches of the nuclear proliferation issue, and when taken together, they complement each other quite well. Cirincione's book discusses the various means by which states choose whether to pursue nuclear arms, how these factors stem from the various institutions within a nation-state, and how the various drivers and barriers within these institutions can result in an overall decision by a nation state to arm itself or not. These drivers and barriers are placed into five categories: Security, Prestige, Domestic Politics, Technology, and Economics.[1] This follows an extensive historical study of nuclear arms and arms control. Levi and O'Hanlon's book focuses more on policy options than root causes of nuclear issues, and discusses means by which the United States and the United Nations can create a new arms control framework, as Cold War forms of

[1] Joseph Cirincione, *Bomb Scare: The History and Future of Nuclear Weapons* (New York City: Columbia University Press, 2007), Pg. 49.

arms control are no longer considered viable in the modern era.[2] This book provides separate potential policies for both arms reduction and arms counter-proliferation under a number of circumstances, and strongly advocates a central American role in the improvement of the NPT regime. Finally, Campbell, Einhorn, and Reiss' book can in many ways be considered an extension of Cirincione's book, as it looks at historical and institutional factors that drive states to seek nuclear arms. The section of the book that stands out, however, is its series of case studies on states that have historically chosen to forgo nuclear arms (such as Egypt, Saudi Arabia, Japan, and South Korea), all of which describe in detail the reasons that those states did not pursue nuclear arms. These case studies are exhaustive chronicles of the internal and external issues and actors that influenced each case. However, these analyses are mostly of secondary cases (i.e. countries that risk becoming proliferators in response to a neighboring state developing nuclear arms) and are generally security oriented in terms of analyzing motive. The book also provides extensive historical background as to the previous failures (and successes) of nuclear arms control and non-proliferation.[3]

However, before discussing how these books complement one another, I feel it is necessary to compare the characteristics of their studies on this issue. First among these is a strongly U.S.-centered approach to all three of these books. This is particularly notable in Levi and O'Hanlon's book, and nearly all of their

[2] Michael A. Levi and Michael E. O'Hanlon, *The Future of Arms Control* (Washington D.C.: Brookings Institution Press, 2008), Pgs. 1-19.
[3] Kurt M. Campbell, Robert J. Einhorn and Mitchell B. Reiss, *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices* (Washington D.C.: Brookings Institution Press, 2004).

suggested policy options require U.S. leadership and in some cases unilateral American action on the issue (such as a voluntary de-emphasis of nuclear arms in the American arsenal).[4] Cirincione also states a similar conclusion, claiming that decisive leadership by an American president is required to return energy to the issue, and that the support of an active and well informed public is required for such a president to lead the international community on the issue.[5] Campbell, Einhorn, and Reiss also put the United States at the core of the non-proliferation, but discuss it in a different manner. The failings of previous American non-proliferation efforts are discussed at length, in addition to the risks of states under U.S. protection (such as Taiwan or South Korea) if there is any erosion in the confidence that the U.S. will defend those countries in a time of conflict.[6] Thus, this book's call for American leadership on the issue is more indirect, but it is certainly evident. A common theme of all of these books is the idea that American exceptionalism on the nuclear issue (meaning the idea that the United States can, to a certain degree, retain its massive nuclear arsenal while it calls for everyone else to disarm) has to be done away with if there is ever to be any major progress on the non-proliferation issue on the global scale.

Another difference in approach between these works is the emphasis on historical study in the writing. On the one hand, Levi and O'Hanlon have very little historical background within their book, looking instead to future policy

[4] Levi and O'Hanlon, *The Future of Arms Control*, Pgs. 72-73.
[5] Cirincione, *Bomb Scare: The History and Future of Nuclear Weapons*, Pgs. 158-182.
[6] Campbell, Einhorn and Reiss, *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices*, Pgs 20-30.

options (after all, the book is titled *The Future of Arms Control*). The only portion of the book that could be considered a historical analysis is a discussion of traditional, Cold War era arms control initiatives provided for comparative analysis.[7] By contrast, Campbell, Einhorn, and Reiss take an almost entirely historical approach to their work, as their case studies are all historical works seeking to use past events to try and describe the possibilities for those countries obtaining nuclear arms.[8] Furthermore, there is also a brief discussion of the failures of existing nuclear arms control and non-proliferation policies, and how these failures may have led to the unstable nuclear world we live in today.[9] Cirincione's book falls somewhere in between, as he utilizes the first three chapters of his book for historical study, emphasizing in them the events that led to the creation of the atomic bomb, the arms race, and the Cold War.[10] He chooses a very individual, actor-oriented approach, attempting to describe the mentalities of people in each phase of the bomb's development and evolution. This is critical to his institutional theoretical approach in terms of describing the drivers and barriers for nuclear development, as institutions are made up of people, and understanding the mentality of people in each institution is necessary for understanding the behavior of that institution as a whole.

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[7] Levi and O'Hanlon, *The Future of Arms Control*, Pgs. 19-46.
[8] Campbell, Einhorn and Reiss, *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices*, Pgs 43-313.
[9] Campbell, Einhorn and Reiss, *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices*, Pgs 20-30.
[10] Cirincione, *Bomb Scare: The History and Future of Nuclear Weapons*, Pgs. 1-48.

Another area where these three works differ is the scope of their inquiries. Cirincione takes the broadest theoretical approach, in my opinion. His discussion of the drivers and barriers for nuclear development is largely theoretical, with very broad application on the global level, but there is little discussion as to applications for specific countries. Some brief examples are provided, but are not extensive case studies. By contrast, Campbell, Einhorn, and Reiss take a much narrower approach, utilizing several smaller, narrower inquiries that are defined by the issues of the country they study more than any broad theoretical emphasis. Rather than trying to create an overall framework, they examine each country at the micro-level (such as prominent individuals, security issues and economic factors specific to each country) and investigate each country's reasons and rationale for considering development of nuclear arms, as well as the barrier and other mitigating factor. However, the lack of a unified framework does leave some inconsistencies among the case studies. Levi and O'Hanlon's approach is primarily theoretical, but also rather narrow, as it primarily focuses on future arms control policy rather than the root issues that cause nuclear proliferation (a corrective approach rather than a preventative approach), with only a short chapter detailed to discussing the control of existing arsenals.[11] This could be considered a major failing of the book, as it can be very easily argued that if a country can be dissuaded from pursuing nuclear arms early on, then there is little need to consider a corrective approach. However, this is somewhat forgivable

[11] Levi and O'Hanlon, *The Future of Arms Control*, Pgs. 47-73.

given the degree of nuclear arms that already exist in today's international environment, and the need for new initiatives to reduce them.

The political orientations of the authors also seem to have affected their approaches and conclusions. This is important because it can define the overall goal the authors want to achieve in their works, and to what degree they feel the nuclear issue is solvable. The most conservative of these works is Levi and O'Hanlon's book. They express the belief that nuclear weapons cannot be completely eliminated, and this belief results in their focus on new means of arms control and an aggressive non-proliferation regime.[12] Conversely, Cirincione takes a much more liberal viewpoint in his line of inquiry, as he flatly states that he believes a nuclear-free world is a possibility and one that could be implemented in the near future.[13] This, along with his critical assessment of the various actors that led to the arms race and the Cold War, demonstrates a much more liberal mind at work in the authoring of that book. Of the three works, Campbell, Einhorn, and Reiss' book seems to be the most impartial, as it devotes itself more to the case studies and historical reviews. While the authors clearly express disappointment in the failures of the existing non-proliferation regime, there are few real clues that reveal the political orientation of the writers. In that regard, it does very well at remaining a much more analytical piece, dedicated to historical research on the issue.

[12] Levi and O'Hanlon, *The Future of Arms Control*, Pg. 14.
[13] Cirincione, *Bomb Scare: The History and Future of Nuclear Weapons*, Pgs. 181-182.

Finally, the last point of comparison and contrast should be the overall goals of the writers in their books, which stems from their political orientation, and all three of these vary significantly. Cirincione is very clear about what he feels the goal of his work is: To bring about the elimination of nuclear arms altogether. His work is focused almost exclusively on determining what measures need to be brought about from the human standpoint in order to make that a reality. However, this goal is both overly ambitious and idealistic, and I feel that could have some effect on the credibility of his policy suggestions, although I feel that his methods of analysis remain sound. The complete opposite approach is taken in Levi and O'Hanlon's book. They take a much more realist approach in defining their goal, which is restricting access to nuclear arms for those states that do not have them and bringing about significant arms reductions for those states that do. Many would likely find this to be a more pragmatic and reasonable goal, at least for the near future. Furthermore, adequately addressing the issue American nuclear exceptionalism further adds credibility to their work. As for Campbell, Einhorn, and Reiss, it is more difficult to assess an overall goal for their work, given the multi-tiered nature of the book. Overall, I surmise that they seek to offer an expose on several at-risk states, with a degree of general policy suggestions for each one. Furthermore, discussion of the failings of previous non-proliferation regimes suggests that they seek to demonstrate these faults while allowing those in power to formulate new approaches on their own. However, it is difficult to determine whether or not they feel a nuclear-free world is possible,

or if they share in the more realist viewpoint. As it stands, it can only be said that all wish to stabilize the nuclear proliferation situation before the chance to do so is gone.

In relation to this writing, these pieces provide the units for analysis that are central to determining the central driving forces behind nuclear proliferators. The drivers listed by Cirincione are critical to this, as they provide an established set of probable motives to compare to in both historical and current cases. The cases studies used by Campbell et al provide an effective framework applying these drivers and barriers in the real world, by demonstrating how they apply to the actors in a given situation and how they affect the outcome within a country. Finally, Levi and O'Hanlon provide a strong framework for determining how to exploit these motivations for a given country. All of these linked approaches are necessary for determining who the principal actors involved in a nuclear proliferation situation are, what their principle motivations and drivers are in seeking nuclear arms, and how they can be deterred, countered, or contained.

Chapter III-Theoretical Review:

With all of these factors in mind, it is then possible to determine how these works can be combined into a strong theoretical method for analyzing risk states which can be used for case studies. These differing areas of emphasis for each book allow for a comprehensive theoretical approach for creating effective policies for fomenting nuclear disarmament and non-proliferation on a state by state basis, particularly when taken in a specific order. Cirinicione's book provides the baseline for the entire inquiry, with his discussion of the drivers and barriers for developing, purchasing, or otherwise acquiring nuclear arms analyzed at an institutional level. Campbell, Einhorn, and Reiss' case study approach then allows these drivers and barriers to be applied comparatively at the state level, which allows for individual states to be assessed and then compared as potential nuclear proliferation risks. Finally, Levi and O'Hanlon's book discusses possible ways to formulate policy based on both the country in question and the specific factors within that country that cause it to be considered an at-risk state. These policy options can then be further divided into policies concerning the reduction of existing nuclear arms and those concerning the implementation of an effective non-proliferation regime for those countries that do not yet have them. By combining the strong points of these different theoretical approaches, it should be

possible to create a strong, coherent means of analyzing the level of risk a potential nuclear state poses, then devising a policy method for reducing or eliminating that risk factor.

This brings the paper to the primary theoretical discussion of this writing. By examining the various nuclear nonproliferation initiatives, it is possible to separate these initiatives into two primary categories. These are the large scale category and the small scale (or area specific) category. The large scale approach is most familiar, as it encompasses large, landmark initiatives such as the Nuclear Non-Proliferation Treaty (NPT). These initiatives are massive, landmark pieces of international legislation that are designed to dramatically alter the entire international system, and often address issues that are considered to be of global importance. As their name suggests, they are intended to be accepted and followed by large numbers of countries as a means of putting global interests above national interests. Their aims are often as ambitious as their scope, often seeking to control or prohibit a form of national behavior that can cause harm to international peace and prosperity (such as the development of nuclear arms). One of the greatest advantages of a large scale initiative is that it can define the international standard for a particular issue, which often helps gain further acceptance of the initiative (as most countries do not like to be considered outcasts). The NPT is an excellent example of this, as it has helped define the overall global standard towards nuclear weapons (that they need to be reduced or

eliminated), and has led to the notion that states who develop nuclear arms in violation of the agreement are pariahs and should be dealt with as such[14].

However, these initiatives do have several disadvantages as well. First and foremost, no such initiative has ever been totally and completely ratified by every country in the world. Even the most broadly successful initiatives, such as the NPT, the Chemical Weapons Convention (CWC), and the Biological Weapons Convention (BWC) have small numbers of holdouts who refuse to sign the treaties.[15] Most of these countries do not sign because they believe that following the provisions of the treaty will gravely compromise their national security. Unfortunately, most of these security concerns are theoretically well founded (at least in regards to the NPT and the nuclear issue). The prime examples are India, Pakistan, and Israel. Israel's past experiences with its neighbors (to say nothing of the current proliferation issues with Iran) have dictated that the country refrain from signing the NPT, even though it has not openly declared that it is a nuclear power. The India and Pakistan issue is also widely known, as neither will sign the NPT unless the other does. Additionally, unless there is an overwhelming outpouring of support for a particular issue, a

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[14] "2005 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons.," May 2005, *United Nations*, http://www.un.org/en/conf/npt/2005/background.html (accessed November, 2009).

[15] "2005 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons.," *United Nations*.
"Convention on the Development, Production, and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction." *U.S. Department of State*, January 20, 2001, http://www.state.gov/www/global/arms/treaties/bwc1.html (accessed November, 2009).
"Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (Chemical Weapons Convention)," *Organization for the Prohibition of Chemical Weapons*, 2008, http://www.opcw.org/chemical-weapons-convention/ (accessed November, 2009).

large scale initiative will often take a considerable amount of time to gain enough signatories to be effective. For instance, the Ottawa Convention on Landmines has taken more than ten years to gather the 156 countries that have currently signed or acceded to it, and the Convention on Cluster Munitions has been open for signature since May 2008, and only received the thirty ratifications it needs to enter into force in February 2010 (the treaty will not actually enter into force until August 2010).[16] Therefore, unless there is a pressing need for such drastic global measures, such initiatives can take years or even decades to become significant and effective in the global community.

Furthermore, another issue with many large scale initiatives is that there is a lack of a solid disincentive for not signing the treaty or withdrawing from the treaty. This is a glaring weakness in the NPT, the CWC, and the BWC, and this was demonstrated when North Korea withdrew from the NPT in 2003. While North Korea has had sanctions imposed upon it by the UN, the NPT text itself provides no recourse in the event a country withdraws from or violates the treaty. Lack of a formal "stick", so to speak, could render the initiative ineffective. North Korea proceeding to detonate a nuclear device after withdrawing from the treaty without incurring any sort of censure beyond economic sanctions does not, in my opinion, set a good precedent for other countries that may be interested in

[16] "Convention on the Prohibition of the Use, Stockpiling, Production, and Transfer of Anti-Personnel Mines and on their Destruction.", *International Campaign to Ban Landmines*, February 2010, http://www.icbl.org/index.php/icbl/Treaties/MBT/Treaty-Text-in-Many-Languages/English (accessed March 2010).
"Convention on Cluster Munitions," *Convention on Cluster Munitions*, February 2010, http://www.clusterconvention.org/index.php (accessed March 2, 2010).

acquiring nuclear arms. If other countries such as Iran choose to follow suit, the entire NPT regime could easily be in jeopardy.

My main focus will be on the small scale/area style of nuclear arms reductions. The small scale/area specific type of initiative is the opposite approach from a global initiative, as these initiatives are designed to influence the behavior of a specific country. In the context of nuclear non-proliferation, these are typically subdivided into two categories. The first is preventative, which is designed to restrict a country's ability to develop nuclear arms and to demonstrate to the country in question the downsides of developing nuclear capability and alienating the international community. The second is corrective, which is designed to persuade a country that has developed nuclear arms to give them up. Military and non-military variations of both exist, and both preventive and corrective forms of these initiatives have been implemented. The isolation of South Africa and the economic sanction put in place on North Korea are good examples of this sort of initiative.

As its stands, the vast majority of modern nation states have already chosen whether or not to abide by the terms of the NPT, and further global initiatives on the issue will accomplish little to forestall those states who do want to acquire nuclear arsenals. This is why the area-specific methods of preventing the acquisition of nuclear arms or reducing existing arsenals are important. This allows for a tailored approach that addresses the specific actors and conditions of a given country. This allows for a specific set of policies to be implemented to

either reduce that country's risk for developing nuclear arms or containing and isolating it after it has developed nuclear arms. The entire Cold War era arms control regime could be considered an area specific form of counter-proliferation, as nearly all of the treaties and initiatives that were discussed and/or negotiated were designed specifically to reduce arsenals of nuclear arms between NATO and the Soviet Union (with notable exceptions being the NPT, BWC, and CWC). In terms of nuclear weapons, the Strategic Arms Reduction Treaty (START I) began the elimination of many of the nuclear weapons in the United States and Soviet Union.[17] More modern area specific initiatives include the six-party talks with North Korea over their nuclear program, the economic sanctions levied against Iran and North Korea in response to building up their programs, the years of sanctions and inspections that successfully prevented Iraq from developing nuclear arms (which was discovered to be the case following Operation Iraqi Freedom), and the lifting of sanctions against Libya when they publically dismantled their WMD programs. These examples help demonstrate that area-specific initiatives can vary significantly depending on the actors in question. The Libyan example demonstrates an example of successful diplomacy in a non-proliferation initiative, through years of careful negotiations among the actors to reach a specific solution for both Tripoli and Washington.

[17] Amy F. Woolf, "91139: Strategic Arms Reduction Treaties (START Iand II): Verification and Compliance Issues.," *Congressional Research Service*, November 22, 1996, http://www.fas.org/spp/starwars/crs/91-139.htm (accessed December, 2009).

This study intends to take the area-specific study and examine each of the national and international institutions actors involved in a specific area of interest. The goal is to determine the most common motivators for a state to pursue nuclear weapons, and the best means to do this is to examine both the national and international actors involved in a given scenario. Once the interactions of the various national and international actors in a situation is examined, it is possible to derive their motivations and interests in seeking nuclear arms as a means of gaining leverage over the other actors. Determining their motives then allows for the formulation of a direct policy option that can be carried out to reduce the risk posed by the state threatening to become a proliferator. This idea derives its roots from the work of Bruce Bueno de Mesquita, a renowned statistician and social scientist. Bueno De Mesquita's work involves the use of game theory to determine the outcomes of a wide variety of international situations.[18] The core of Bueno de Mesquita's work is game theory, which is a derivative of rational choice theory, and specializes in performing predictive analyses. Using a computer model, Bueno de Mesquita generates a numerical value that correlates to particular outcome for a particular event and/or actor. He prides himself on his model's ability to generate precise outcomes rather than vague predictions that mean little. Moreover, he claims that his isolation of specific events and actors allows for the modification of the models outcome, as the model can demonstrate

[18] Clive Thompson, "Can Game Theory Predict When Iran Will Get the Bomb?" *New York Times*, August 12, 2009. http://www.nytimes.com/2009/08/16/magazine/16Bruce-t.html?_r=1&scp=1&sq=Bueno%20de%20Mesquita&st=cse (accessed September, 2009).

what effects different interactions will have. Bueno de Mesquita claims that his models have accuracy greater than 90%, and in many cases has made more accurate predictions than analysts at the government intelligence agencies on a given issue. He is a strong proponent of use of this system in more decision making, both for governments and corporations, and feels that the science of human decision making would be greatly enhanced by adopting his model and the theory behind it.[19]

However, Bueno de Mesquita's model is not ideal for this study for a number of reasons. First of all, access to the model is proprietary to Bueno de Mesquita and access to it is unlikely. Additionally, Bueno de Mesquita's main premise (and the main premise of rational choice theory as a whole) that human actors are entirely predictable and will always make actions based upon self interest and rational decision making without regard to personal principles and societal norms has been hotly debated and repeatedly questioned. More specifically, his use of computer models to predict human decision making are also controversial, in spite of their success rate.[20] Finally, it is always difficult to quantify the positions of various actors through numerical values on an issue without such figures being entirely arbitrary.

However, what Bueno de Mesquita's analysis does prove is that a micro level analysis of actors and institutions is an effective means of determining the

[19] Bruce Bueno de Mesquita, *The Predictioneer's Game: Using the Logic of Brazen Self Interest to See and Shape the Future* (New York: Random House, 2009), pgs. 9-13.
[20] Clive Thompson, "Can Game Theory Predict When Iran Will Get the Bomb?" *New York Times*.

specific risks that are characteristic of nuclear proliferation states, and it shows how predictions can be influenced. My proposal is to break an at-risk state into the most prominent actors both inside and outside the target state, and analyze their positions on the nuclear issue in regards to the various drivers and barriers for nuclear development. By taking this micro-level approach tailoring international policy towards risk states based on the individual conditions prevailing in each state, it allows for the implementation of nonproliferation policies that address the opinions and interests of the unique actors in each state. This is the primary goal of this study: To take the institutions and actors (both national and international) that are the main influences in an at-risk state, determine the characteristics associated with each actor and institution, and compare these characteristics between the actors to determine how that risk state might be dissuaded, interdicted, or even forcibly prevented from gaining nuclear arms. Each actor will be analyzed using the five drivers and barriers presented in Cirincione's work. These individual analyses will then be combined to try and determine what the most compelling drivers for nuclear proliferation are, and what policy options are the best to contain proliferators.

Chapter IV-Historical Review:

Before discussing an ongoing case such as Iran, it is necessary to discuss this study's theory in the context of several historical cases, both of the successes and the failures of the existing non-proliferation regime. These examples are designed to demonstrate how the various actors involved in each of these situations interacted, and how their actions resulted in either a positive outcome or a negative outcome. These historical cases have been selected to provide a solid historical comparison to Iran's case after conducting the primary case study. They have also been selected to demonstrate which drivers are the most compelling for a state that is developing nuclear weapons, and which barriers are the most effective at deterring a state from developing nuclear arms (or getting them to reverse their decision to produce nuclear arms if they have already started). They are highly diverse, spanning multiple regions and multiple cultures, and are designed to demonstrate the effectiveness of an analysis using the actors and the five drivers/barriers without running afoul of issues such as cultural or political biases that could be derived from studying risk states in a single region. They have also been selected due to their highly public nature, and a great deal of information is available about all of these cases, which makes the analysis of their actors and drivers both simpler and more effective.

Overview of the Nuclear Nonproliferation Treaty

Before discussing the successes and failures of the nonproliferation regime, it is first important to discuss the foundations of this regime: the Nuclear Non-Proliferation Treaty. Currently only three countries in the world (India, Pakistan, and Israel) have never signed the treaty, making it one of the most widely signed international treaties in history. Of the countries that have signed the NPT, only North Korea has ever withdrawn from it. This treaty has defined the global attitudes towards nuclear weapons and nuclear energy since its inceptions, and those countries that have not complied with it have often been ostracized by the international community. Its influence cannot be understated, but many believe that its future may be in doubt.

The concept for the treaty began shortly after the end of World War II, when it became apparent that the pursuit of nuclear energy and technology would put the world at risk for nuclear arms proliferation. However, principal negotiations on the treaty did not begin until 1957, and the negotiations picked up quickly during the 1960s. The Cuban Missile Crisis in 1962 is not listed as a motivator for the treaty, but the timing would suggest that the nuclear war scare caused most countries to examine the potential risks of having a nuclear arsenal. The treaty was put into effect in 1968, and it was decided that it would be put up for review every twenty-five years. At the first review conference in 1995, it was

decided that the treaty would be extended indefinitely, and that reviews would be held every five years afterward.[21]

The treaty is divided into eleven articles. Article I directs any member state not to transfer nuclear arms or control of nuclear arms to any non-nuclear weapon states, and not to encourage any non-nuclear weapons state to construct nuclear arms. Article II directs any state party to the treaty not to accept the transfer of nuclear arms or accept assistance in developing nuclear arms, and not seek the purchase or manufacture of nuclear arms through any means. Article III establishes the International Atomic Energy Agency as the primary nuclear safeguards authority, and states the means by which states party to the treaty conclude agreements with the IAEA. Article IV establishes each state's right to peaceful nuclear energy, and the right to render assistance to any other country party to the treaty in the development of peaceful nuclear energy. Article V discusses the usage of "peaceful nuclear explosives" and that their potential applications and use should be monitored and overviewed by the other states party to the treaty. Article VI calls for the existing nuclear weapon states to begin negotiations to bring an early end to the nuclear arms race, and to seek the disarmament of their nuclear arsenals. Article VII establishes each signatory state's right to form regional treaties to establish the total absence of nuclear arms in those regions. Article VIII establishes the procedures for proposing and voting on amendments to the articles of the treaty. Article IX establishes the procedures

[21] "2005 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons." *The United Nations*. May 2005.

for signing and ratifying the treaty. Article X provides the procedures for withdrawing from the treaty, and states have the right to withdraw from the treaty if extraordinary events jeopardize their supreme interests. It has to give notice to the U.N. Security Council and all other parties to the treaty of its withdrawal three months in advance. Article X also establishes that reviews of the treaty should be held every twenty-five years, although this has since been amended to a review every five years. Article XI establishes the archival procedures for the treaty.[22]

The treaty's mandate is to provide all of the member states with the means to pursue nuclear energy, while prohibiting the production of nuclear arms and eliminating existing arsenals. This treaty is also attributed with setting the global attitude towards nuclear arms, and beginning the series of nuclear disarmament talks between the United States and Soviet Union during the later years of the Cold War.[23] However, there have been significant problems with the treaty. First among these was India's refusal to sign the treaty when it was first put into force, claiming that the treaty was discriminatory.[24] North Korea's withdrawal from the NPT has further compromised the treaty's integrity. Many question whether the treaty will endure over the coming years. Both the upcoming 2010 Review Conference and Iran's behavior will likely determine the outcome of the NPT regime.

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[22] "The Treaty on the Non-Proliferation of Nuclear Weapons," *The United Nations*, May 2005. http://www.un.org/en/conf/npt/2005/npttreaty.html (accessed April 4, 2010)
[23] "2005 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons." *The United Nation*, May 2005.
[24] "India Nuclear Weapons," *GlobalSecurity.org*, April 28, 2005, http://www.globalsecurity.org/wmd/world/india/nuke.htm (accessed March 2, 2010).

Successes of the Non-Proliferation Regime:

South Africa

South Africa is quite possibly the best example of a country choosing of its own accord to accede to the NPT regime. In 1993, South African President de Klerk publicly revealed the South African nuclear program. In addition to disclosing the program, de Klerk also announced the deactivation of both the program and the six warheads it had produced.[25] In addition, all South African nuclear facilities were made available for IAEA inspection and the entire program was verified as disabled prior to South Africa signing the NPT. South Africa's unilateral dismantlement of its nuclear program is a unique event in global politics, and is the only time a country has willingly revoked its nuclear arms after having developed them, and is truly the best example of the success of the NPT.

The actors and institutions involved in the South African nuclear program evolved and changed considerably over the course of the program, illustrating the need for determining the important actors in present-day nuclear risk states. During the early phases of the program under the Atomic Energy Board (AEB), the South African nuclear program qualified under the Peaceful Nuclear

[25] "South Africa: Nuclear Weapons Progam," GlobalSecurity.org, April 28, 2005, http://www.globalsecurity.org/wmd/world/rsa/nuke.htm (accessed February 6, 2010).

Explosives (PNE) program, and was actually being examined for use in mining.[26] However, South Africa's deteriorating security environment led to major changes in the South African defense establishment. This followed strong negative reactions from the United States and Soviet Union to the nuclear program as well. These changes included the reorganization of the AEB into the Atomic Energy Corporation (AEC), which was tasked with the production of atomic weapons.[27] This was further exacerbated by the Arms Corporation of South Africa (Armscor), which was the chief arms manufacturer in South Africa and a strong proponent of nuclear weapons as a deterrent force for the South Africa.[28] Also notable was change in government leadership. President de Klerk, in spite of being reputed as a "hawk", quickly took steps to disarm South Africa's nuclear program, which was a significant change in policy from his predecessors. In the face of potentially serious opposition from the military, he went ahead with the immediate elimination of South Africa's nuclear capability.[29] Additionally, international actors had a very strong influence on the outcome in South Africa. The U.N.'s economic sanctions (resulting from the South African nuclear program) were one of the principal means of getting South Africa to disarm, and

[26]David Albright, "South Africa and the Affordable Bomb," *Bulletin of the Atomic Scientists* 50, no. 4 (July/August 1994): page 41, http://books.google.com/books?id=VAwAAAAAMBAJ&pg=PA37&dq#v=onepage&q=&f=false (accessed March 2, 2010).
[27] Albright, "South Africa and the Affordable Bomb," page 37.
[28] Albright, "South Africa and the Affordable Bomb," page 37.
[29] Frank V. Pabian, "South Africa's Nuclear Weapon Program: Lesson's for U.S. Nonproliferation Policy," *The Nonproliferation Review* (Fall 1995): page 10., http://cns.miis.edu/npr/pdfs/31pabian.pdf (accessed February 14, 2010).

the IAEA was responsible for both the inspections and reporting the openness that the South Africans displayed in dismantling their nuclear program.

The drivers for South Africa's nuclear problem evolved over time based on the changing geopolitics. Initially, the program was seen more as a means to demonstrate South Africa's technological capability to build the bomb, in addition to the prestige that came with becoming a nuclear state, particularly during the U.S. Atoms for Peace and Peaceful Nuclear Explosives programs.[30] Economics also drove the South African decision to pursue the nuclear program, as the AEC stood to benefit from being able to provide both nuclear power and various forms of enriched uranium to various customers. However, external security quickly trumped all other concerns for South Africa's nuclear program as the 1960s progressed. Following the signing of the NPT, greater pressure was applied to South Africa from the United States. The country's non-compliance with the NPT and practice of apartheid eventually led to total isolation from most of the global community. Furthermore, ongoing clashes with a Soviet and Cuban supported Angolan army in Namibia further worried the South African government. This in turn led to the development of a full nuclear fuel cycle, fed by uranium mined domestically, an underground test shaft in the Kalahari Desert, the test detonation that occurred in the Indian Ocean in 1979, and eventually the six gun barrel-type nuclear weapons created.[31]

[30] Albright, "South Africa and the Affordable Bomb," page 41.
[31] Pabian, "South Africa's Nuclear Weapon Program: Lesson's for U.S. Nonproliferation Policy," pg 3.

If South Africa went to all the trouble to defy the international community and develop an indigenous nuclear program, then what factors could persuade the country to radically reverse its policy and completely dismantle its program? Details are unclear, but interestingly enough, security again appears to be the primary factor in South Africa choosing to dismantle its nuclear program. The elimination of South Africa's regional threats resulted in a drastic shift in opinion of South African foreign policy makers, and it was quickly decided that elimination of their weapons was in South Africa's security interests. The conflicts with Angola in Namibia reached their peak in 1988, with tens of thousands of troops on both sides poised to fight at the South African border. The military stalemate opened the way for negotiations between the parties, eventually resulting in a ceasefire.[32] The breakup of the Soviet Union also removed South Africa's other major security concern, since there would no longer be Soviet units and advisors in Africa spreading the influence of the Warsaw Pact. Domestic politics and prestige also played a part in the dismantlement. President de Klerk made dismantlement of the program and ending apartheid immediate priorities upon his election, and elimination of the nuclear warheads prevented their misuse by extremist elements in the country who did not agree with his agenda.[33]

"South Africa: Nuclear Case Closed?" National Security Archive, December 1993, http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB181/sa34.pdf (accessed February 12, 2010).
[32] Pabian, "South Africa's Nuclear Weapon Program: Lesson's for U.S. Nonproliferation Policy," page 10.
[33] Pabian, "South Africa's Nuclear Weapon Program: Lesson's for U.S. Nonproliferation Policy," page 10.

Today, South Africa is a major proponent of nuclear disarmament and a strong supporter of the NPT. The country has remained free of nuclear arms and weapons grade uranium since acceding to the NPT. That being said, there are still the potential for serious issues with the South African nuclear program. The country retains its entire nuclear industry and fuel cycle, and could easily resume production of weapons grade uranium if the need arises. Now, this would involve leaving the NPT, but as long as the country cites "supreme circumstances" or at least gives 90 days notice, any country can withdraw from the treaty without any penalty in the context of the NPT.[34] As a practical matter, there would likely be an enormous diplomatic backlash, the results of which are impossible to predict (given that North Korea was entirely isolated for its program, but India and Pakistan were not). Regardless of the outcome, South Africa could still redevelop its weapons at very short notice if there was a drastic change in South African foreign policy.

Libya

One of the most surprising cases of a country choosing disarmament is that of Muammar al-Qaddafi's Libya. Under Qaddafi's leadership, Libya had gained a reputation as a rogue, isolationist state throughout the Cold War era, due to its support of terrorism (including the Lockerbie bombing in 1988)[35], repeated

[34] "South Africa: Nuclear Weapons Progam," *GlobalSecurity.org*.
[35] Flynt Leverett, Why Libya Gave Up on the Bomb, *New York Times*, January 23, 2004. http://www.nytimes.com/2004/01/23/opinion/why-libya-gave-up-on-the-

military skirmishes with the United States, and most importantly, its ongoing efforts to produce nuclear and chemical weapons, as well as procuring the ballistic launchers from North Korea to deliver them.[36] In December 2003, however, Qaddafi stunned the world by announcing his intent to unilaterally end Libya's WMD programs, following months of secret negotiations with the United States. While Libya never developed a working nuclear weapon, it did have an active chemical weapons program as well as several ballistic launchers, and has since eliminated or turned all of these over to the United States (it does retain a small ballistic missile capability).[37]

Unlike South Africa, Libya's case appears to be more homogenous at the state level. There is very little information available about the command structure of the Libyan WMD programs, so it is difficult to determine the positions of the Libyan institutions on the nuclear issue. This is unsurprising, given the extremely centralized and somewhat paranoid nature of the Libyan government, which is built entirely around the leadership of Muammar al-Qaddafi.[38] His repeated suppression of dissent and of any group that seeks to undermine his regime (including Fundamentalist Muslims, private businesses, and even his own military) is in line with the popular image of Libya as a state built around one

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bomb.html?scp=1&sq=Why%20Libya%20Gave%20up%20on%20the%20Bomb&st=cse (accessed March 11, 2010).

[36] "Libya: Nuclear Weapons Program," GlobalSecurity.org, November, 21, 2008, http://www.globalsecurity.org/wmd/world/libya/nuclear.htm (accessed March 11, 2010).

[37] "Libya Profile," Nuclear Threat Initiative Research Library, January, 2010, http://nti.org/e_research/profiles/Libya/index.html (accessed March 11, 2010).

[38] "Background Note: Libya," U.S. Department of State, February, 2010, http://www.state.gov/r/pa/ei/bgn/5425.htm (accessed March 11, 2010).

man's cult of personality.[39] Given the evident lack of institutional differences in the Libyan government (at least on the nuclear issue), the principle institutions and actors in this scenario have been at the international level. These included the Libyan government, the United States government, the International Atomic Energy Agency, and the United Nations. The actors and policies of the U.S. government in particular played a key role in giving Libya the opportunity to renounce its weapons of mass destruction. When Libya made clear its intention to come to the negotiating table, the Bush Administration's neo-conservatives were left out of the loop, allowing the administration to take a more moderate approach than when dealing with states such as Iran and Syria.[40] This meant that the U.S. was willing to make concessions to the Libyans in exchange for disarming (as opposed to the Bush Administration's demands that Syria and Iran unilaterally renounce nuclear weapons), and is arguably what allowed Libya to go ahead with its disarmament plan.

The drivers for Libya's WMD programs were not all that dissimilar from South Africa's. The primary driver again appears to be security; although Qaddafi's often contradictory statements on the issue make a definitive conclusion difficult to come by. However, Israel appears to be the main security concern for the Libyans at the time, as Qaddafi made repeated statements

[39] "Background Note: Libya," U.S. Department of State.
[40] Samuel Salama, "Was Libyan Disarmament a Significant Success for Nonproliferation?" *Nuclear Threat Initiative*, January 2004, http://www.nti.org/e_research/e3_56a.html (accessed March 11, 2010).

expressing his concern about Israel's nuclear arsenal.[41] It's also probable that there were security concerns with Chad, which Libya had several border clashes with, and it had even used some of its chemical weapons against Chad during the 1980s.[42] Libya had also shown interest in purchasing technology for nuclear power stations from the Soviets and Belgians as well.[43] However, there is no other evidence that economics was a significant driver in the development of the Libyan nuclear program. Prestige and domestic politics are also a possibility, but no corroborating evidence exists.

By contrast, Libya had a number of barriers in a number of categories to the development of its nuclear program, which ultimately led to the abandonment of its program. Although economics had little to do with Libya's development of the bomb, they had a great deal to do with why they abandoned the program. There are indications going back as far as the end of the Clinton administration that Libya was becoming interested in trading its WMD programs for an end to sanctions against the country, which were having a marked effect on the Libyan economy by dramatically reducing Libyan oil exports.[44] Furthermore, Libya had to buy most of its outside expertise, which would further increase the effect of sanctions on slowing the program.[45] Security seems to be the second most significant factor in the Libyan decision to abandon WMDs, and there are two notable events that stand out. The first of these was the U.S. invasion of Iraq in

[41] "Libya: Nuclear Weapons Program," GlobalSecurity.org.
[42] "Libya Profile," *Nuclear Threat Initiative Research Library*.
[43] "Libya: Nuclear Weapons Program," GlobalSecurity.org.
[44] Salama, "Was Libyan Disarmament a Significant Success for Nonproliferation?"
[45] "Libya: Nuclear Weapons Program," GlobalSecurity.org.

March 2003, which many argue provided a strong example of the U.S. response to rogue states thought to be developing weapons of mass destruction.[46] The second was the October 2003 seizure of a German cargo ship by the U.S. Navy in the Mediterranean Sea.[47] The ship was loaded with uranium enrichment components, including parts for hundreds of centrifuges, and was bound for Tripoli. It has not been revealed what the source of the parts was, but it seems likely that Qaddafi did not want to risk a U.S. military response to the seizure, and decided to cut his losses. Prestige also seems a notable factor, as Qaddafi has gained a great deal of international praise for abandoning his program (again, much like South Africa), and it seems likely that Qaddafi knew that what sort of positive treatment he would receive from the international community.[48]

Interestingly, Libya is probably an even lower risk for nuclear rearmament than South Africa is today. Given Libya's complete lack of nuclear industry, the country would have no means to produce a weapon if there was a radical change in Libyan politics. Furthermore, the amount of time and diplomatic energy Libya has spent normalizing relations with the United States by eliminating its arsenal would militate against Libya reversing its decision to eliminate its WMD. The level of transparency Libya has allowed regarding the inspection of its former WMD facilities and its ballistic weapons reinforces further suggests that Libya is more interested in returning to the mainstream in

[46] Salama, "Was Libyan Disarmament a Significant Success for Nonproliferation?"
[47] "Libya: Nuclear Weapons Program," GlobalSecurity.org.
[48] Leverett, "Why Libya Gave Up on the Bomb" *New York Times*, January 23, 2004. Salama, "Was Libyan Disarmament a Significant Success for Nonproliferation?"

international politics than keeping nuclear arms. Barring an extreme reversal of policy (or an involuntary change of government), it would seem that Libya is unlikely to reverse its WMD policy as long as it continues to reap the benefits of abandoning its program.

Successful Disarmament Treaties: START and INF

An international agreement can also be examined in the context of the principal actors involved, and there are also a number of interesting characteristics that can be examined to see what makes for an effective nuclear arms control treaty. Arguably the most effective of these treaties are the Intermediate Range Nuclear Forces (INF) treaty and the Strategic Arms Reduction Treaty (START I). Both of these treaties resulted in drastic reductions in both the Soviet and American nuclear arsenals, and remain historic in their scope, the length of time required to negotiate them, and lasting effects they have had on strategic policy of the United States and Russia in the years since their signing and ratification.

The INF treaty has been one of the most far reaching arms control agreements ever reached. While its scope is fairly narrow, it is the only arms control treaty to ever eliminate an entire class of nuclear arms for the participants.[49] As the name suggests, these were Intermediate Range Ballistic Missiles (IRBMs) and Ground-Launched Cruise Missiles (GLCMs). The idea for

[49] "Treaty Between the United States and the Union of Soviet Socialist Republics on the Elimination of their Intermediate-Range and Shorter-Range Missiles," *U.S. Department of State*, January 20, 2001, http://www.state.gov/www/global/arms/treaties/inf1.html (accessed March 13, 2010).

the treaty began following the deployment of the Russian SS-20 advanced IRBM in the European theater. As NATO and the USSR began deploying more intermediate and shorter range weapons in the area (of more advanced design), both sides began to come forward with offers of reducing INF in both countries, and eventually eliminating them. President Reagan and Premier Gorbachev signed the agreement in September of 1987, and immediately entered into force. One of the other defining characteristics of the treaty was its extremely thorough in its verification techniques to ensure both sides dismantled their INF weapons.[50]

The highly intrusive means of verification provided by the treaty is one of the reasons for its success. These included not only remote inspection by satellite, but also on site inspections of relevant nuclear facilities.[51] While the START treaty also covers such inspections, INF has the most invasive inspection regime, and strongly encourages compliance. Furthermore, it remains in full effect today. The treaty's primary driver seems to be, strangely enough, security. Both sides feared the build up of arms in the region enough to come to the table. To be entirely fair, the U.S. hedged its bets with the development of its Pershing I and II IRBMs and nuclear tipped GLCMs in Europe, but was equally interested in the disarmament talks.[52]

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[50] "Treaty Between the United States and the Union of Soviet Socialist Republics on the Elimination of their Intermediate-Range and Shorter-Range Missiles," *U.S. Department of State*.
[51] "Treaty Between the United States and the Union of Soviet Socialist Republics on the Elimination of their Intermediate-Range and Shorter-Range Missiles," *U.S. Department of State*.
[52] "Treaty Between the United States and the Union of Soviet Socialist Republics on the Elimination of their Intermediate-Range and Shorter-Range Missiles," *U.S. Department of State*.

Unlike the INF treaty, the START I treaty has a much broader scope, and while it hasn't achieved the feat INF has in eliminating all weapons covered under its purview, it has still been a dramatic success.[53] It reduced all strategic nuclear warheads on each side to 6,000, with 1,600 strategic delivery systems. These delivery systems included Intercontinental Ballistic Missiles (ICBMs), Submarine Launched Ballistic Missiles (SLBMs), and strategic bombers.[54] The treaty was signed in 1991, shortly before the collapse of the Soviet Union. Interestingly, the treaty was successfully multilateralized after the breakup of the Soviet Union, and all of the successor states complied with the terms (including the total disarmament of Ukraine, Belarus, and Kazakhstan).[55] While it is unclear exactly how close Russia and the United States came to meeting START I's guidelines, arsenals were significantly reduced, and as of 1996, both sides were ahead of their timetables on the elimination of their armaments.[56] Furthermore, the treaty has proven so successful that both the United States and Russia chose to continue abiding by its terms even after its expiration in December 2009.[57] In April 2010, Russia and the United States signed the treaty's replacement, referred to as New START. This treaty is reported to reduce nuclear arms to their lowest levels ever, almost a quarter of their Cold War highs. It also nullifies the largely ineffective

[53] Woolf, "91139: Strategic Arms Reduction Treaties (START I and II): Verification and Compliance Issues," *Congressional Research Service*.
[54] Woolf, "91139: Strategic Arms Reduction Treaties (START I and II): Verification and Compliance Issues," *Congressional Research Service*.
[55] Woolf, "91139: Strategic Arms Reduction Treaties (START I and II): Verification and Compliance Issues," *Congressional Research Service*.
[56] Woolf, "91139: Strategic Arms Reduction Treaties (START I and II): Verification and Compliance Issues," *Congressional Research Service*.
[57] "U.S. Rejects Russian Missile Shield Concerns," BBC News, December 29, 2009, http://news.bbc.co.uk/2/hi/europe/8434260.stm (accessed March 13, 2010).

SORT treaty. The long term effects of this treaty remain to be seen, but they could lead to a new era of nuclear cooperation between the two states.[58]

While the drivers of the START treaty are not clear, it can be inferred that they are similar to those of INF, since the treaties were negotiated simultaneously. This suggests that both sides began to regard their nuclear arsenals as a security liability rather than an asset. This is further evidenced by the complete elimination of the nuclear arsenals in Ukraine, Belarus, and Kazakhstan. However, there are some barriers to certain parts of its implementation. Since the treaty covers strategic weapons (which require significant and expensive infrastructure to deploy and maintain), some of the Soviet successor states have had issues complying with some of the more stringent facility elimination requirements. In spite of its various issues, it remains a very successful treaty and the gold standard for arms control treaties.

[58] Peter Baker and Dan Bilefsky, "Russia and U.S. Sign Nuclear Arms Reduction Pact," *The New York Times*, April 8, 2010. http://www.nytimes.com/2010/04/09/world/europe/09prexy.html?scp=3&sq=START%20Treaty&st=cse

Failures of the Nonproliferation Regime:

North Korea

Arguably the greatest failure of the NPT has been its inability to effectively prevent North Korea's efforts produce nuclear arms. North Korea is the only case of a country withdrawing from the NPT after signing it, and it then proceeded to make an indigenous nuclear program (culminating in an attempted test detonation) in total defiance of the international community. Furthermore, there has been a complete lack of strong international response to the program during the Clinton and second Bush administrations. This incident illustrates the lack of serious international response and the inability of the NPT to provide disincentives for states that ignore the treaty.

Once again, the principal actors in this situation are international actors, given the highly monolithic North Korean government, which is widely known for basing itself entirely around the personality of its leader. Thus, the principle actors have been the United States, North Korea, Russia, China, the UN, the IAEA, South Korea, and Japan. The positions of these actors have dictated the evolution of the North Korean nuclear issue, with South Korea and Japan in the most threatened position by a belligerent, nuclear armed North Korea, while the United States, Russia, and China are forced to play the peacekeepers, all of whom

have different angles on the crisis. However, this is changing. During the most recent nuclear tests in mid-2009, Russia and China joined the American condemnation of the program, and China (historically the strongest supporter of the DPRK on the UN Security Council) has recently taken steps such as allowing the seizure of North Korean funds in Macao.[59] Furthermore, there may be additional complications in analyzing the North Korean state, as it may not be possible to treat it as a monolithic entity for much longer. Following Kim Jong-Il's stroke in 2008, reports indicate that a succession struggle has begun in North Korea, in the event that his health continues to decline.[60] While it is unclear who may be vying for leadership after Kim Jong-Il or who their supporters might be, it will certainly become complicated as more actors become relevant in an impoverished, isolated, nuclear armed country with a history of aggression.

North Korea's interest in nuclear weapons dates back to the 1950s, but it was not until the 1990s that North Korea's nuclear program became a serious concern.[61] North Korea first signaled its intent to leave the NPT in 1994, and began constructing its nuclear reactors and reprocessing facility at Yongbyon. The main source of weapons grade material for the DPRK is the reprocessing of

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[59] David E. Sanger, "Tested Early by North Korea, Obama Has Few Options", *New York Times*, May 25, 2009. http://www.nytimes.com/2009/06/14/world/asia/14korea.html?scp=9&sq=north%20korea%20nuclear&st=cse (accessed February 16, 2010).
Narushige Michishita, "The 13 February Action Plan and the Prospects for the North Korean Nuclear Issue," *Ifri Proliferation Papers* (Spring 2007): pg. 8, http://ifri.org/files/Securite_defense/Proliferation_Paper_Michishita.pdf (accessed February 16, 2010).
[60] Sanger, "Tested Early by North Korea, Obama Has Few Options", *New York Times*.
[61] "North Korea: Nuclear Weapons Program," GlobalSecurity.org, April 28, 2005, http://www.globalsecurity.org/wmd/world/dprk/nuke.htm (accessed February 16, 2010).

spent nuclear fuel rods into plutonium, and it appears to have received technical aid from Pakistan through the A.Q. Khan network in the late 1990s.[62] The other major concern is the North Korean ballistic missile inventory, which features an extremely large stockpile of ballistic missiles that can be fitted with nuclear warheads. These include Soviet designed Scud-Bs and –Cs, as well as indigenously designed Nodong and Taepodong missiles.[63] However, there is still no concrete information on what nuclear warheads may be in the North Korean arsenal, and to what degree they have been weaponized. It should also be noted that the principle concern with the North Korean program is not as much a direct nuclear assault by the DPRK (which would likely result in a devastating nuclear response from the United States) but rather that the DPRK would sell its nuclear weapons or nuclear material in exchange for much needed hard currency.[64]

Nearly all sources agree that the drivers for North Korea's nuclear program are security and economics. Security appears to be the more prominent driver of the two in the North Korean case. North Korea first characterized its "nuclear deterrent force" as a policy bargaining chip in 2003, and has repeatedly claimed that it was developing nuclear arms to for self defense and to defy U.S. sanctions and nuclear threats.[65] Perversely, Kim Jong-Il seems intent on using the

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[62] Robert S. Norris and Hans M. Kristensen, "North Korea's Nuclear Program 2005," *Bulletin of the Atomic Scientists* 61, no. 3 (May/June 2005): 64-65, http://thebulletin.metapress.com/content/hn1576020176wg02/fulltext.pdf (accessed February 16, 2010).
[63] Norris and Kristensen, "North Korea's Nuclear Program 2005," pg. 66.
[64] Sanger, "Tested Early by North Korea, Obama Has Few Options", *New York Times*.
[65] Michishita, "The 13 February Action Plan and the Prospects for the North Korean Nuclear Issue," Pg. 7.

nuclear program as a means of forcing the United States reengage with North Korea, and trying to pull a non-aggression agreement out of the U.S. Unfortunately, the situation is getting worse as North Korea's language has become more belligerent in recent times, as a result of growing Russian and Chinese irritation with the lack of predictability of the DPRK and its continued defiance of the international community.[66] Economics have also been a driver for North Korea's nuclear program, but not in the conventional sense (i.e. being able to produce nuclear energy for sale). Instead, North Korea has been more interested in using the program as a bargaining chip to have U.N. sanctions lifted and gain economic cooperation with Japan and South Korea.[67] However, as relations have progressively worsened, especially in 2009, the security argument appears to be taking a greater priority for the North Korean government. The nuclear and ballistic weapons are used to provide "scientific nationalism" to the people of North Korea, as evidence of Korean military might and scientific progress. This complements a tremendous amount of propaganda proclaiming the necessity of the military above all else, which discourages dissent and keeps the Korean populace focused on external threats instead of their own problems.[68] If

[66] Michishita, "The 13 February Action Plan and the Prospects for the North Korean Nuclear Issue," Pg. 7.
[67] Michishita, "The 13 February Action Plan and the Prospects for the North Korean Nuclear Issue," Pg. 9.
[68] "North Korea's Nuclear and Missile Programs," *International Crisis Group*, June 18, 2009, pgs. 5,14-15, http://www.crisisgroup.org/library/documents/asia/north_korea/168_north_koreas_nuclear_and_missile_programs.pdf (accessed April 1, 2010).

the regime feels its domestic legitimacy is threatened and public discontent is a possibility, it will be less likely to give up its nuclear arms.

As for barriers, economics and technology appear to be the main inhibiting factors for the North Korean nuclear program. In terms of nuclear technology, North Korea's nuclear facilities are lacking in sophistication and many of them are outdated. Furthermore, most of their major nuclear facilities are unfinished and years away from completion, which significantly limits their ability to produce weapons and fissile material.[69] Furthermore, it is also estimated that their ability to produce highly enriched uranium weapons is less advanced than their plutonium production capabilities.[70] In terms of economics, the continuing sanctions severely limit North Korea's ability to purchase the equipment for their nuclear industry, and this will be particularly true if the United States decides to enforce its legal authority to inspect North Korean ships at sea.[71] However, these barriers are still relatively minor, as they only prevent large scale production of atomic devices. It is still believed that they already have several devices in their arsenal, with the capability to build more.[72]

North Korea presents an extreme risk not just to its regional neighbors, but also to the NPT regime as a whole. It has set the unsettling precedent that the NPT can be withdrawn from at will with no recourse except sanctions, and may

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[69] Norris and Kristensen, "North Korea's Nuclear Program 2005," pg. 66.
[70] Martin Fackler, "North Korea Vows to Produce Nuclear Weapons", *New York Times*, June 13, 2009. http://www.nytimes.com/2009/06/14/world/asia/14korea.html?scp=9&sq=north%20korea%20nuclear&st=cse (accessed February 16, 2010).
[71] Sanger, "Tested Early by North Korea, Obama Has Few Options", *New York Times*.
[72] Fackler, "North Korea Vows to Produce Nuclear Weapons", *New York Times*.

well serve to encourage countries such as Iran to proceed with development of their own nuclear arsenals. North Korea's potential to become a nuclear marketplace presents an even greater hazard, which could allow for the acquisition of nuclear arms by other countries or even terrorist groups. With all of this in mind, North Korea could be a disaster of tremendous proportions for the future of nonproliferation, depending on how this emerging nuclear power is managed over the coming years.

India and Pakistan

The nuclear standoff on the Indian sub-continent has been its own Cold War since both countries declared their nuclear arms capability in the late 1990s. This situation could easily be considered as much of a nonproliferation disaster as North Korea, but for a few different reasons. Neither country signed the NPT, since India claimed it was discriminatory and Pakistan would not sign if India did not sign it first. It also highlights the lack of commitment the existing nuclear states have towards disarming their own nuclear arsenals, and the dismissal of the issue in the face of other political issues (such as the War on Terror). Additionally, the internal problems in Pakistan present an opportunity for terrorists and other non-state actors to steal or outright buy nuclear arms. As a result, many analysts view the entire region as a primed nuclear powder keg. Given how closely interrelated these two countries' nuclear weapon programs are, these states will be reviewed together.

Clearly, the two primary actors are India and Pakistan in this particular case. However, unlike North Korea, these are not monolithic countries centered on the ideology of one leader. India's case in particular is rife with actors with different positions and views on the nuclear issue, and the evolution of the issue has changed with the actors involved.[73] Pakistan's drive for a nuclear weapon was more widely agreed upon by the Pakistani's (as they felt their own survival was threatened by Indian nuclear arms), but there were specific actors in the country that were responsible for the development of its nuclear arms. Dr. Abdul Qadeer Khan is one of the most notable of these, as he spearheaded the Pakistani nuclear weapons program from the scientific side.[74] The major international actors in this particular case were the United States and the United Nations, given the lack of involvement of the IAEA. The United States in particular had a great deal of responsibility for its lack of any effective response to the growing nuclear issue during the Clinton and second Bush administrations. Sanctions on both sides were light (and most of those were later lifted), which did little to impede the development of nuclear arms on either side.[75]

The nuclear developments of both sides date back to the signing of the NPT in 1968, with India as the catalyst. India declined to sign the NPT because it felt the treaty was discriminatory and allowed the existing nuclear weapon states a

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[73] "Country Overview: India Nuclear Chronology," *Nuclear Threat Initiative*, December, 2007, http://www.nti.org/e_research/profiles/India/Nuclear/2296_2893.html (accessed March 2, 2010).
[74] "Pakistan Nuclear Weapons," *GlobalSecurity.org*, April 28, 2005, http://www.globalsecurity.org/wmd/world/pakistan/nuke.htm (accessed March 2, 2010).
[75] "Country Overview: India Nuclear Chronology," *Nuclear Threat Initiative*.
"Pakistan Nuclear Weapons," *GlobalSecurity.org*.

monopoly[76]. India tested its first "peaceful nuclear explosive" in 1974, but it is not attributed as having deliverable nuclear arms until 1986-88.[77] However, the series of 5 nuclear test detonations from May 11th 1998 to May 13th of the same year are what made the situation critical. By that time, India had developed several ballistic missile types easily capable of delivering a nuclear warhead, and has been a full nuclear weapon state since.[78] However, Pakistan was ready for it, as it had been developing its own nuclear program since the 1970s, in response to India's refusal to sign the NPT. Initially, it had planned a nuclear test in 1977 in response to the Indian 1974 test, but that was cancelled. It conducted its first "cold test" in 1983, and in 1988, Pakistan had several nuclear weapons constructed, but left disassembled.[79] In 1998, Pakistan immediately picked up India's thrown gauntlet and test-detonated at least two (possibly as many of six) nuclear weapons between May 28th and 30th, which put a stop to Indian talks of military action in Kashmir.[80]

The drivers vary on both sides of the conflict. In the Indian case, the typical driver for nuclear arms, security, is questionable. In many cases, it is believed that India does not have any major security threats that would merit a

[76] "India Nuclear Weapons," *GlobalSecurity.org*.
[77] "India's Nuclear Weapons Program: Present Capabilities," *The Nuclear Weapon Archive*, April 5, 2001, http://nuclearweaponarchive.org/India/IndiaArsenal.html (accessed March 4, 2010).
[78] "Country Overview: India Nuclear Chronology," *Nuclear Threat Initiative*.
"India's Nuclear Weapons Program: Present Capabilities," *The Nuclear Weapon Archive*.
[79] "Pakistan Nuclear Weapons," *GlobalSecurity.org*.
[80] Sardar Lodi, "Pakistan's Nuclear Doctrine," *Defence Journal* (April 1999): http://www.defencejournal.com/apr99/pak-nuclear-doctrine.htm (accessed March 4, 2010).

nuclear arsenal, including China.[81] However, the Indians themselves claimed that it was motivated by security issues (namely the Pakistani nuclear program).[82] Interestingly enough, prestige appears to India's lead driver in the initial development of its nuclear arms. India's belief that the NPT was discriminatory indicates that it felt that as long as nuclear weapons were a staple of the other great powers of the world, it could not be denied the same right.[83] Another major driver appears to be technological, as it appears that the Indian scientific community was strongly in favor of creating nuclear arms. Former Indian Prime Minister H.D. Deve Gowda was quoted as saying "the scientists had approached previous two governments to continue the tests, once in 1995 and in 1997. Gowda claimed that he had told them to wait, but the persistence of the Indian scientific community appears to have eventually led to the test.[84] The Indians also claimed that scientific research was another reason for the 1998 nuclear tests.[85] By contrast, the Pakistani nuclear program appears to be almost entirely security oriented. There is no mention of Pakistan pursuing nuclear energy for economic purposes or to shore up domestic political support. Developing its nuclear program cost Pakistan prestige, and technology was one of Pakistan's chief barriers in the program.[86] By process of elimination, that leaves security, and unfortunately, there is ample cause for Pakistan to be concerned with security.

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[81] Lodi, "Pakistan's Nuclear Doctrine," *Defence Journal*.
[82] "Country Overview: India Nuclear Chronology," *Nuclear Threat Initiative*.
[83] "India Nuclear Weapons," *GlobalSecurity.org*.
[84] "Country Overview: India Nuclear Chronology," *Nuclear Threat Initiative*.
[85] "Country Overview: India Nuclear Chronology," *Nuclear Threat Initiative*.
[86] "Pakistan Nuclear Weapons," *GlobalSecurity.org*.

Of course, chief among these is India. Pakistan has declared its nuclear inventory to be for first strike use, to counter India's far stronger conventional military.[87] Clearly, Pakistan still views India as its primary threat, as its arsenal has continued to grow along with India's.[88]

Even worse is the fact that there are very few barriers or disincentives that apply to either nuclear program. Obviously, there are few if any foreign security barriers to either of these country's nuclear programs. This is particularly true in the Pakistani case, as the American strategic partnership with Pakistan in the War on Terror is widely known, in spite of Pakistan's growing nuclear arsenal. There is little or no indication that either country's economy is under strain due to their ongoing nuclear programs. Technology does not seem to be an issue either, since both countries have fully fledged nuclear programs and have built (India) or are in the process of building (Pakistan) their own indigenous hydrogen bombs[89] [90]. These projects are currently underway with entirely indigenous infrastructure, so there should be few technology barriers at this point. The domestic issue is likely to be the greatest disincentive for those countries to continue their arms developments, especially in Pakistan. Pakistan has a continuously growing domestic security problem with large numbers of Taliban and other Islamic militants within their borders, and this insurgency is causing a number of

[87] Lodi, "Pakistan's Nuclear Doctrine," *Defence Journal*.
[88] Robert S. Norris and Hans Kristensen, "Nuclear Notebook: Pakistani Nuclear Forces, 2009," *Bulletin of the Atomic Scientists* 65, no. 5 (September/October 2009): 82-84, http://thebulletin.metapress.com/content/f828323447768858/fulltext.pdf (accessed March 18, 2010).
[89] "India's Nuclear Weapons Program: Present Capabilities," *The Nuclear Weapon Archive*.
[90] Norris and Kristensen, "Nuclear Notebook: Pakistani Nuclear Forces, 2009," pgs. 82-84.

international concerns about the security of the Pakistani arsenal[91]. The arrest of A.Q. Khan in 2004 under charges of selling nuclear secrets is one of the penultimate examples of this. While Indian domestic security and politics do not seem to be a major factor, it is worth remembering India has suffered a number of terrorist attacks over the past decade (such as the Mumbai attack in 2008). Therefore, the risk that a terrorist group might steal a nuclear weapon from India cannot be entirely ruled out.

Overall, India and Pakistan present a variety of serious hazards to both the nonproliferation regime and global security as a whole. These two countries with decades of political and religious animosity have fought several conventional wars, and with both countries continuously building up and modernizing their nuclear forces, the potential for a cataclysmic regional conflict is present and increasing. With India's growing economic might and Pakistan's strategic importance to the U.S. and its allies, such a nuclear war would have an enormous impact on world politics and economics. Furthermore, growing terrorism and insurgency in both countries continues to increase the risk of nuclear weapon theft or black market sale. Until both countries can engage each other peacefully and agree to dismantle their nuclear arms, both countries will remain grave liabilities to global nonproliferation.

[91] Norris and Kristensen, "Nuclear Notebook: Pakistani Nuclear Forces, 2009," pgs. 82-84.

Conclusions

From all of these cases, a number of conclusions can be drawn. First and foremost, nearly all of these cases demonstrate that the need for regime survival seems to be the absolute root for the development of nuclear arms. Pakistan's case was a country developing nuclear arms for fear of being annihilated by its larger, more powerful neighbor. North Korea's is an attempt to stave off potentially regime crippling unrest from within and prevent (perceived) threats of American military action from abroad. South Africa developed its program to defend against aggression from neighboring states and to stem the spread of Soviet influence in Africa. All of these cases demonstrate these countries developing nuclear arms to prevent their regime from crumbling due to either internal or external threats. These fall under the national security and the domestic politics drivers. However, when it comes to getting these types of states to disarm, the most effective means appears to be crippling these countries economically and demonstrating the cooperative benefits they stand to reap from giving up their nuclear arsenals and rejoining the international community. Both Libya and South Africa benefited tremendously from giving up their nuclear arms, economically and diplomatically. Furthermore, both had come to the realization that the survival of their governments was facilitated by abandoning

their nuclear arms. Libya in particular was becoming increasingly unstable prior to giving up its arsenal, suffering both attempted coups against Qaddafi and severe economic sanctions, which ended after Libya gave up its nuclear arms. These cases help determine both the likely motives for nuclear proliferators and the likely barriers to the continuation of a nuclear weapon development program.

Chapter V-Primary Case Study: Iran:

National Actors

Inside Iran, there are two principle actors which affect the nuclear issue, which differ in their political orientation rather than professional affiliation or geographic location. These are the two major factions in the Iranian political elite, and due to the fact that the elites. The first of these are the pragmatic conservatives. This is the more moderate faction in the Iranian political elite, and would be willing to normalize Iranian relations with the United States and the rest of the world. They controlled the diplomatic negotiations over the Iranian nuclear program from 2003 to 2005, and were much less problematic for the U.N. and IAEA to negotiate with. The pragmatists have been open to compromise, and have also been sensitive to international opinion and pressure. This has made the pragmatic conservatives more open to international engagement and globalization. While they do seek to expand Iran's power and influence on the international stage, their willingness to compromise and negotiate would make them more amenable to a bargain on the nuclear issue. Notable pragmatic conservatives include former President Rafsanjani and Hassan Rowhani (the

former lead negotiator to the U.S. and U.N. in 2004 and former secretary of the Supreme National Security Council).[92]

The second principle actor inside the Iranian political elite is the Ideological Conservative faction. This has been the dominant faction in Iranian politics since the 2005 election and represents thinking common to the early days of the Revolution. This faction is characterized by militancy and paranoia, and sees the world through a Hobbesian perspective which dictates that military might is the only effective means of demonstrating power and influence international politics, and that "predatory powers lurk to dictate and dominate" each other. Unfortunately, this means that most of its members subscribe to the idea that diplomacy is simply a means of interchange among actors in any balance of power, but does nothing to alter the balance. Compromise on any issue is unlikely, and these ideologues seek to "impose Iran on the international community." Security guarantees are seen as insulting, international opinion and goodwill are irrelevant, and the sensitivity of the nuclear issue in Iran is seen as evidence of Iran's rising power and geopolitical importance. Furthermore, it currently enjoys support from both regular and irregular military elements, as well as the more conservative clergy. Current President Ahmadinejad and Speaker of the Iranian Parliament Larijani are prominent examples of Ideological Conservatives.[93]

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[92] Shahram Chubin, *Iran's Nuclear Ambitions* (Washington D.C.: Carnegie Endowment for International Peace, 2006), pg 32.
[93] Chubin, *Iran's Nuclear Ambitions*, pgs. 32-34

It is important to note that these factions are not diametrically opposed, especially on the nuclear issue. Both support a strong Iran, and both support Iran's indigenous nuclear program. The principle differences are in the perspectives of the international community and ideas on how Iran should interact with it. The pragmatists seek to normalize relations with the rest of the world, and are open to compromise. While they view the nuclear program as important, they are not willing to let Iran become an international pariah in the process. The opposite is true for the ideological faction, which in fact favors a confrontation with the western powers. This group sees a confrontation as a means to divide the West from states like Russia and China, and that Iran's oil revenues and geopolitical importance give them a number of options in that scenario. If the United States is to have any chance of resolving this issue diplomatically, it appears more and more that it will have to try and interact with the pragmatic elements of the Iranian elite as much as possible. If the ideologues retain the most power, it is highly unlikely that a diplomatic solution will be viable.[94]

External/International Actors

The first major international actor in the standoff with Iran is the United States. The American position regarding the Iranian nuclear program has been vociferous, repeatedly stating that any development of nuclear arms has been unacceptable. Iran has also been squarely in Washington's sights since the

[94] Chubin, *Iran's Nuclear Ambitions*, pgs. 34-36

revision of its policies regarding the control of WMD proliferation. The Bush administration shifted the American focus from controlling the technologies involved in the production of nuclear arms to the identities of countries involved.[95] The most obvious results of this policy were the invasion of Iraq and the statement that Iraq, Iran, and North Korea had formed an "Axis of Evil". It also increased U.S. reliance on unilateral intervention in these cases, calling into question American willingness to work with its allies abroad on the proliferation issue. The other problem was that foreign policy makers have viewed Iranian regional ambitions as entirely antithetical to American strategic objectives in the Middle East. However, the overall American response has repeatedly wavered between a hard-line policy of a totally nuclear-free Iran and occasional willingness to negotiate. However, the inability of the Bush Administration to turn either approach into any meaningful results has critically hampered Washington's ability to deal with Tehran today. This has been compounded by the special antipathy the Bush administration reserved for Tehran, which has translated both into a widespread social distrust of Iran by American citizens and lack of any proposed incentives to Iran for halting its nuclear program.[96] President Obama has been taking steps to show American willingness to negotiate, which has even started getting some Chinese willingness to discuss measures against Iran. However, it is becoming clear that he still favors targeted

[95] Chubin, *Iran's Nuclear Ambitions*, pgs. 82-83.
[96] Chubin, *Iran's Nuclear Ambitions*, pgs. 82-90.

sanctions, and it appears unlikely that he will relent on preventing or limiting Iran's nuclear program until it gives up its enrichment facilities.[97]

The next principal actor in the growing tensions with Tehran is Israel. As the target of Tehran's anti-Semitic rhetoric, the only existing nuclear power in the Middle East, and arguably the least stable element in the dispute over Iran's nuclear program, Israel bears special mention. Under the leadership of Benjamin Netanyahu, Israel has adopted a hard line posture towards Iran and has repeatedly warned of the growing threat of a nuclear Iran. Moreover, there is growing popular support in Israel for preempting the Iranian nuclear program, regardless of the consequences.[98] Ahmedinejad's inflammatory anti-Israeli rhetoric has further reinforced the notion of Iran as an existential threat to the Israelis, and the notion of Israeli pre-emptive strikes has to be taken seriously. However, if Iran does proceed in gaining a full nuclear production capacity, there are a huge number of possible responses. The most important factor is whether or not Iran chooses to stay with the capacity to build nuclear arms or actually develops a nuclear weapon. If the latter case occurs, it is probable that both countries would bring their nuclear forces to a hair trigger alert, or possibly even prompt the Israelis to launch a preemptive nuclear attack. The other factor that is liable to affect Israel's response is the American response to Iran declaring its nuclear

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[97] Peter Baker, "Obama Expects U.N. Sanctions on Iran Soon," *New York Times*, March 30, 2010. http://www.nytimes.com/2010/03/31/world/middleeast/31prexy.html?scp=2&sq=obama%20iran&st=cse (accessed April 2, 2010).

[98] Ronen Bergman, "Letter From Tel Aviv: Netanyahu's Iranian Dilemma," Foreign Affairs, June 10, 2009. http://www.foreignaffairs.com/features/letters-from/letter-from-tel-aviv-netanyahu%C3%A2%E2%82%AC%E2%84%A2s-iranian-dilemma (accessed April 2, 2010).

capability and whether Israel feels it can depend on Washington for assistance. If Israel feels that the United States is unreliable or unwilling to help, the more likely they are to lash out on their own.[99]

The next major actor involved in the dispute is the EU-3. This is the designation for the United Kingdom, France, and Germany, and they typically represent the EU in matters of major foreign policy. These states have been critical in maintaining the diplomatic avenues into Tehran on the nuclear issue, especially during the earlier years of the Bush administration, and have tended to play the "good cop" to America's "bad cop." Like the Americans, the EU-3 view the complete discontinuation of Iran's full fuel cycle pursuit as the goal, and that freedom and democratization are the best means to achieve this. However, the EU-3 viewed the nuclear program as the problem, rather than the American view that the regime was to blame.[100] However, EU-3 relations with Tehran began deteriorating in 2005, following Tehran's dismissal of the EU's package deal offer and the election of President Ahmedinejad. The new Iranian President's comments about the Holocaust and Israel's right to exist resulted in an outright condemnation from the EU, and following Iran's resumption of enrichment research in early 2006 the EU-3 stated that the differences were not "between Iran and Europe, but between Iran and the entire international community."[101] Furthermore, the EU-3 states are members of the G-8, all of whom came out for

[99] James M. Lindsay and Ray Takeyh, "After Iran Gets the Bomb," *Foreign Affairs* 89, no. 2 (March/April 2010): pgs. 38-39.
[100] Chubin, *Iran's Nuclear Ambitions*, pg. 103-104.
[101] Chubin, *Iran's Nuclear Ambitions*, pg. 103-107.

stronger sanctions against Iran at the March 2010 G-8 summit. These sanctions are expected to be enacted in the weeks following the summit, provided the UN Security Council approves.[102] This latest international consensus shows that exasperation with Iran is no longer a strictly American phenomenon, and that the Western states are becoming more united on the issue.

The same is not necessarily true for the final two major state actors in the dispute over Iran's nuclear program. These are Russia and China, both of whom have traditionally been Tehran's major business partners. They have also been the biggest obstacle to American sanctions on Iran (particularly during the Bush administration), and have observed a pragmatic relationship with Tehran. Iran has not made issue of Russian and Chinese suppression of Muslim minorities in their countries, and this is one of the reasons for this continued partnership.[103] Moscow in particular has maintained strong ties with Tehran since the breakup of the Soviet Union, and have become one the principal suppliers of arms to Iran (in exchange for much needed hard currency). Russia has also been at the forefront of efforts to find a diplomatic solution to the nuclear issue in Iran. The Russian position vis-à-vis Iran became more in line with the EU-3 during the 2003-2005 period, seeking diplomatic means to resolve the dispute, but making absolutely clear that the acquisition of nuclear arms by Iran is unacceptable. The most notable Russian proposal was for Russia to enrich Iranian uranium on Russian

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[102] Reuters, "G8 Increases Pressure on Iran Over Nuclear Program," *New York Times*, March 30, 2010. http://www.nytimes.com/reuters/2010/03/30/world/international-us-g8-foreign.html?_r=1&scp=15&sq=iran%20nuclear&st=cse (accessed April 2, 2010).
[103] Lindsay and Takeyh, "After Iran Gets the Bomb," pg. 35-36.

soil, to prevent or at least delay Iran from developing its own enrichment ability.[104] However, this deal was not implemented, and recently, Russia has been falling more and more in line with the American and EU policy regarding Iran, and has even become more in favor of targeted sanction against Iran's nuclear program. However, the Russians have made clear that they do not favor regime change or sanctions that would disproportionately affect ordinary Iranian citizens. Furthermore, Lukoil (Russia's largest private oil firm) recently cancelled a contract in Iran, citing the effects of sanctions. It even appears that China is becoming somewhat more open to the prospect of sanctions on Iran, as the Iranian program becomes more difficult to ignore and Tehran becomes more obstinate.[105] If the development of a nuclear capability exhausts the goodwill of these two powerful states, Iran will likely find itself utterly isolated and with almost no strategic partners, either inside or outside the Middle East.

The final important actor in the Iranian nuclear dispute is the International Atomic Energy Agency. This is the U.N. agency dedicated to the responsible use of nuclear energy and materials throughout the world. Specifically, the IAEA uses a variety of inspections (namely ad hoc, routine, special, and safeguards inspections). It can also use a variety of additional means to verify the nature of a given nuclear program, such as collecting environmental samples, use of

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[104] Chubin, *Iran's Nuclear Ambitions*, pgs. 108-112.
[105] Reuters, "G8 Increases Pressure on Iran Over Nuclear Program," *New York Times*.
Ellen Barry and Andrew Kramer, "China and Russia Pressed Iran to Accept U.N. Deal," *New York Times*, March 24, 2010.
http://www.nytimes.com/2010/03/25/world/middleeast/25iran.html?scp=14&sq=iran%20nuclear&st=cse (accessed April 2, 2010).

remote/unmanned devices to monitor a given facility, and the ability to request any and all relevant data from the host government.[106] Although this agency has been responsible for inspecting Tehran's nuclear industry, there have been a number of serious hurdles getting the agency involved in the Tehran issue. The processes used in the creation of the nuclear fuel cycle are dual use technologies, as either can be used for the creation of fuel for nuclear reactors or for production of weapons grade uranium. This allows Iran to take advantage of the IAEA's mandate to promote the use of peaceful nuclear technology, while still retaining the ability to construct a nuclear weapon and withdraw from the NPT on short notice if the need arises. The amount of bureaucratic wrangling and brinksmanship on the part of the Iranians has also balked the IAEA, and has thus far only gotten aggressive about verification and inspections after vigorous American pressure. However, the agency's independent nature allowed it to portray itself as an independent entity, which was interested in both Iran's right to free energy and satisfying the concerns of the international community.[107] However, it appears that even the good will of the IAEA is nearing exhaustion on the Iran issue, especially after the exposure of the secret enrichment facility near Qom. According to the most recent IAEA resolution, the agency has found Iran to be in violation of multiple sections of the Safeguards Agreement, including the resumption of enrichment activities, failure to declare its nuclear facilities, and

[106] "IAEA Safeguards Overview," International Atomic Energy Agency, http://www.iaea.org/Publications/Factsheets/English/sg_overview.html (accessed April 2, 2010).
[107] Chubin, *Iran's Nuclear Ambitions*, pgs. 94-97.

has remained highly uncooperative with the agency. The report recommends that the Director General of the IAEA report these events to the U.N. Security Council, which has undoubtedly continued to cast Iran in a negative light since.[108]

Drivers for Iran's Nuclear Program

The principal driver for the Iranian nuclear program is generally accepted to be prestige. Like North Korea, Iran appears to be seeking nuclear weapons (or at least a nuclear option) as a means of demonstrating its independence and its ability to increase influence in the Middle East. Another major factor is Iran's penchant for vitriolic anti-American sentiment and support for extremist organizations in the Middle East. Development of an indigenous nuclear program would cripple American ability to provide security guarantees and general ability to conduct foreign policy.[109] Furthermore, Iran has repeatedly stated its intention to become the hegemonic power in the Middle East, and become indispensable to any and all affairs and regional policies in the Middle East. To do this, they seek to exploit American entanglement in the region and use a nuclear capability as leverage over both the United States and the other regional powers.[110] These regional ambitions fall firmly under the idea of spreading their national influence

[108] "Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions 1737 (2006), 1747 (2007), 1803 (2008) and 1835 (2008) in the Islamic Republic of Iran," International Atomic Energy Agency, November 27, 2009, http://www.iaea.org/Publications/Documents/Board/2009/gov2009-82.pdf (accessed April 3, 2010).
[109] Lindsay and Takeyh, "After Iran Gets the Bomb," pg. 34.
[110] Chubin, *Iran's Nuclear Ambitions*, pgs. 15-16.

and gaining international prestige, and they clearly view their nuclear program as a means to achieve this.

The second driver for the Iranian nuclear program is said to be domestic politics. The Iranian government regularly touts the nuclear program to its citizenry as both a symbol of national pride and (more importantly) a major source of continued legitimacy for the current crop of Ideological Conservative leaders. The current regime is utilizing the program to tap into nationalist sentiment and present the full nuclear fuel cycle as something "no self-respecting nation can go without."[111] The Iranian government continually cites high public support for nuclear energy as the reason for its continued nuclear development. The Iranian government has used the issue as evidence that the rest of the world seeks to deny Iran access to any advanced technologies, and continually reinforce Iran's need for a nuclear program in the eyes of its citizens.[112] It has also been suggested that the recent upheavals following the 2009 presidential elections in Iran might be impetus to increase the pace on its nuclear program, so as to show off its nuclear prize and revive the waning political support of the ideological conservatives.[113] There is precedent for this analysis, as North Korea has demonstrated similar behavior during the development of its nuclear program. This could mean that as the Islamic Republic's domestic political situation

[111] Chubin, *Iran's Nuclear Ambitions*, pg. 28.
[112] Chubin, *Iran's Nuclear Ambitions*, pg. 28-30.
[113] Lindsay and Takeyh, "After Iran Gets the Bomb," pg. 36.

deteriorates the pace of the Iranian nuclear program could be accelerated in a desperate bid to keep the regime (or at least the ideological faction) in power.

Technology is the favored public driver of the Iranian government, as the Iranian government repeatedly states its right to nuclear energy and all portions of the nuclear fuel cycle. The Iranian government regularly legitimates its pursuit of nuclear energy as the cornerstone of Iranian national and scientific progress, as well as a demonstration of its ability to develop nuclear technology in spite of all international objections.[114] As to whether there is a large scientific lobby in Iran pushing for the development of nuclear technology, there is no apparent evidence that the scientific community in Iran has any influence on the policy makers. Available material suggests that the Iranian mullahs and political elites are the primary authorities pushing for the development of the nuclear program.[115] In terms of its technological infrastructure, Iran is becoming dangerously close to the nuclear threshold. Recent reporting suggests that Iran's enrichment program is now capable of producing 19.75% Low Enriched Uranium (LEU), which is the most significant hurdle in the enrichment process. After reaching this point, further enriching it to Highly Enriched Uranium (HEU) is considered to be a simple exercise. If this is correct, Iran could produce enough material for a nuclear weapon by 2011 or 2012.[116] With both a strong nuclear infrastructure and

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[114] Chubin, *Iran's Nuclear Ambitions*, pg. 28-30.
[115] Chubin, *Iran's Nuclear Ambitions*, pg. 28-30, 32-36
Lindsay and Takeyh, "After Iran Gets the Bomb," pg.34-36.
[116] David Albright and Christina Walrond, "Supplement to Iran's Gas Centrifuge Program: Taking Stock," Institute for Science and International Security, March 3, 2010, http://isis-online.org/isis-reports/detail/supplement-to-irans-gas-centrifuge-program-taking-stock/ (accessed April 2, 2010).

the call for technological progress by the regime, technology remains a strong driver for the Iranian nuclear program.

Perversely, security seems to be one of the lesser drivers for the Iranian nuclear program. Regionally speaking, Iran has very few local security threats to deal with, and none of them would require a nuclear deterrent. Even Israel, a current nuclear power, is only likely to present a threat to Iran as long as the Iranian government continues to combine its insistence on a nuclear program with its denial of Israel's right to exist. It is quite clear that Tehran views the United States as its primary adversary. Furthermore, the strong U.S. presence in both Iraq and Afghanistan has added to Iran's threat perception in recent years, fearing a permanent U.S. presence that could lead to Iran's permanent isolation.[117] It is also generally accepted that acquiring nuclear arms would essentially put Iran off-limits to a regime change or invasion, but would do little else to enhance Iran's regional security.[118] In all, Iran has little objective rationale to call its security a significant driver for its nuclear program.

As for the last of Cirincione's drivers, economics does not appear significant in the pursuit of a nuclear program for Iran. There is no apparent evidence that there would be an appreciable economic benefit for Tehran, whether from the generation of nuclear energy to the sale of HEU (or indeed completed nuclear weapons)[119]. Iran also has scant deposits of uranium within its own

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[117] Chubin, *Iran's Nuclear Ambitions*, pgs. 14-16.
[118] Lindsay and Takeyh, "After Iran Gets the Bomb," pgs. 36-37.
[119] Frank Procida, "Overblown," Foreign Affairs, June 9, 2009, http://www.foreignaffairs.com/articles/65127/frank-procida/overblown (accessed April 2, 2010).

borders, so the Iranian nuclear industry would still be dependent on uranium imports, which negates any arguments for Iranian nuclear self-sufficiency (and casts doubt on the intents of the development of the full fuel cycle in Iran).[120] Economic drivers are very minor, and should not be considered to be a major incentive for Iran to develop its nuclear industry.

Barriers to the Iranian Nuclear Program

Unfortunately, Iran has circumvented the most common barrier to achieving a nuclear fuel cycle, and this is technology. Early on, Iran had required significant outside technical assistance to begin construction of its nuclear plant at Bushehr, and it is widely accepted that Iran acquired its enrichment centrifuges though the black market. By this point, however, Iran has managed to construct several enrichment facilities (such as those at Natanz and Qom), and it appears to have sufficient technical know-how to maintain and possibly even improve the centrifuges they have acquired or manufactured.[121] Furthermore, the nuclear plant at Bushehr is slated to finally begin operating in the summer of 2010, which would firmly cement Iran's nuclear capability.[122] If Iran's ability to create LEU at Natanz can also be confirmed, the operation of Bushehr with fuel enriched at Natanz or Qom would firmly cement Iran as a nuclear state. Therefore, technology is no longer a significant barrier to the Iranian nuclear program.

Lindsay and Takeyh, "After Iran Gets the Bomb," pgs. 37-38.
[120] Chubin, *Iran's Nuclear Ambitions*, pg. 26.
[121] Albright and Walrond, "Supplement to Iran's Gas Centrifuge Program: Taking Stock," ISIS.
[122] Barry and Kramer, "China and Russia Pressed Iran to Accept U.N. Deal," *New York Times*.

Interestingly, probably the greatest existing barrier to the Iranian nuclear program is security. Iran is bringing extreme security risks onto itself by insisting on the fuel cycle and the continuation of its nuclear program. Chief among these is Israel. Israel is commonly accepted as the country that is most likely to strike Iran over its nuclear issue, since Israel regards this program as an existential threat, particularly from a state that denies Israel's right to exist. Whether Iran actually intends to destroy Israel with atomic arms is becoming less relevant; the Israeli public is becoming increasingly convinced that they are, and are becoming increasingly vocal in their demands for a preemptive strike. Eventually, it may come to pass that Israel will strike Iran due to public outcry even if the United States and the Israeli Mossad try to restrain such a strike.[123] The other principal security risk to Iran resulting from its nuclear program is the United States itself. The American stance regarding Iran has been clear: Iran must cease its uranium enrichment and submit to IAEA inspections on its nuclear program.[124] Furthermore, the election of President Obama has done little to weaken the American stance on the issue. As of March 2010 the President is pressing for tougher sanctions on Iran, and is working diligently to bring Russia and China in closer to the American position.[125] American willingness to respond with force is uncertain, even if Iran does develop a full-fledged nuclear arsenal. However, it

[123] Bergman, "Letter From Tel Aviv: Netanyahu's Iranian Dilemma," Foreign Affairs.
[124] Chubin, *Iran's Nuclear Ambitions*, pg. 99.
[125] Reuters, "G8 Increases Pressure on Iran Over Nuclear Program," *New York Times*.

seems unlikely that the United States is going to put the use of force off the table entirely.

Economics will also provide a significant barrier to the Iranian nuclear program. This is especially true in regards to Iran's supply of uranium. Iran is not self-sufficient in uranium mining, and probably will not be so until after 2015 at least.[126] This leaves a critical weakness in the Iranian nuclear program and makes the Iranian nuclear program very vulnerable to having its supplies of uranium cut off in the short term (either directly or through denial of hard currency through sanctions). The potential effects of sanctions are also not something that can be underestimated, especially if Russia and China sign off on them in the UNSC. There are already signs that the growing international pressure is starting to have an effect on investments in Iran. Lukoil's pullout from the Anaran oil field in Iran is an important indicator that Iran is becoming unpalatable to foreign investors. Although Russian state firm Gazprom has picked up the Anaran contract, a shift of private foreign direct investment out of Iran should have a major effect on the country and its nuclear program.[127]

Tehran clearly views the nuclear program as a means of enhancing its international prestige, but both historical precedent and recent changes in the international political climate suggest that the reverse effect is the more likely. Iran is more likely to find itself totally isolated and considered a rogue state in every sense of the term. South Africa found itself in the same situation (as stated

[126] Chubin, *Iran's Nuclear Ambitions*, pgs. 108-112.
[127] Barry and Kramer, "China and Russia Pressed Iran to Accept U.N. Deal," *New York Times*.

earlier) and was cooperatively sanctioned by both the United States and the Soviet Union.[128] South Africa was treated as a pariah for the entirety of its nuclear-armed period and did not gain international prestige and respect until it unilaterally disarmed its arsenal. Additionally, Russia and China are becoming more open to sanctions on Iran, particularly if they develop nuclear arms, and developing nuclear weapons would likely isolate Iran from these two important supporters.[129] If Iran finds itself in this situation, it will find itself alienated and without any foreign influence to peddle. It will most likely be unable to affect major policies in the neighboring states, which both distrust Iran and are likely to turn to the United States for security.[130] Therefore, international prestige may be considered a driver from the perspective of the Iranian government, but from a more objective standpoint it should be considered a barrier, since Iran stands to lose a great deal of international standing by proceeding with its nuclear program.

Finally, the domestic politics issue could end up being the barrier that ultimately brings down the Iranian nuclear program. The Iranian government regularly flaunts the overwhelming public support for the nuclear program as evidence that it must proceed with its nuclear program. However, the government ignores or obfuscates many of the facts regarding public support of the program. While 80% of the Iranian public supports Iranian nuclear program, most of the Iranian public also do not support nuclear development if it isolates Iran like

[128] Albright, "South Africa and the Affordable Bomb," pgs. 41-42
[129] Barry and Kramer, "China and Russia Pressed Iran to Accept U.N. Deal," *New York Times*.
[130] Lindsay and Takeyh, "After Iran Gets the Bomb," pgs. 36-37.

North Korea has been. Iranian citizens do not support the nuclear program if it detracts from domestic political needs, and appear unwilling to endure the same economic consequences that Pakistan and North Korea have suffered as results of their nuclear ambitions.[131] The riots following the rigged elections in 2009 demonstrate the inherent instability and potential for unrest in Iran if the public feels disenfranchised by the government. If the Iranian public eventually comes to feel that the nuclear program puts their interests at risk, then there is the possibility of further unrest. The question then will be if the current political elites choose to adapt to its citizens demands or if reforms will be necessary.

Conclusions

Given that Iran faces a much greater number of barriers towards developing a nuclear program instead of drivers, it seems apparent that the Iranian government is bent on having its nuclear industry, regardless of the costs at home and abroad. The continuing breakdowns in relations between Iran and the Western countries show the growing indifference of Tehran to global opinion, and Iranian refusals to accept fuel deals proposed even by long-time business partner Russia illustrate the level of importance Iran places on attaining the complete nuclear fuel cycle. While moderate elements do exist in Iran that would likely be amenable to a compromise, as long as the ideologues remain in power Iran is unlikely to make any sort of concessions on its nuclear program, which greatly

[131] Chubin, *Iran's Nuclear Ambitions*, pgs. 28-29.
Lindsay and Takeyh, "After Iran Gets the Bomb," pg. 39.

reduces any chance of a diplomatic resolution before Iran gains a nuclear capability. When compared to the historical examples stated above, very few of the factors that resulted in positive outcomes such as South Africa and Libya are present. Unlike the Libyans, Iran has not been sufficiently isolated to make negotiations effective, nor has it been offered any significant incentives to abandon its nuclear program (those that have been proposed are usually dismissed by the ideologues dismiss as insulting). Unlike South Africa, Iran has no ongoing regional conflict that would warrant a nuclear arsenal, although their concerns regarding American encirclement could be considered analogous to South African concerns about growing Soviet influence in Africa.

Of the NPT failures, Iran bears the most resemblance to India and North Korea. It does not mandate nuclear arms for deterrence like Pakistan does. Similar to North Korea, Iran does seek recognition as a regional power player through its nuclear program, but Iran tends to be more pragmatic in its policy than North Korea. Also like North Korea, Iran likely views its nuclear program as a means of legitimizing the current leadership of the Islamic Republic. However, Iran's main argument is that it has the right to nuclear technology and the full nuclear fuel cycle, and that the existing nuclear powers are conspiring to prevent this. Lack of punishment in the cases of India, Pakistan, and North Korea may be encouraging the Iranian effort as well. If Iran is going to be deterred from its nuclear ambitions, it has to be shown that those developments will not go unpunished.

Chapter VI-Conclusions:

Iran's current determination to pursue the nuclear fuel cycle in the face of all international opinion and demands for transparency provide a strong refutation to this work's central hypothesis: A diplomatic solution to the Iranian nuclear dispute remains unlikely, barring a major shift in Iranian politics or government. If the moderates in the Iranian political elite can regain the more prominent political roles, a deal might be possible. The common consensus is that the Iranian nuclear program has reached a point where even a military intervention will only be able to delay the Iranian program rather than destroy it.[132]

If this is the case, why does Iran, like North Korea, choose to pursue this program when doing defies all conventional logic? Iran stands to lose a great deal from continuing its pursuit of the full fuel cycle, from allies and prestige to hard currency and military support, with few real concrete benefits from developing the program. Even ideology and the historic animosity between the leadership of the Islamic Republic and the Western states do not explain pursuing a program that offers such a poor cost-to-benefit ratio. Yet this trend seems to be becoming more common, as both Iran and North Korea are pursuing their nuclear programs

[132] Bergman, "Letter From Tel Aviv: Netanyahu's Iranian Dilemma," Foreign Affairs.
Lindsay and Takeyh, "After Iran Gets the Bomb," pg. 39.
David E. Sanger, "Imagining an Israeli Strike on Iran," *New York Times*, March 26, 2010. http://www.nytimes.com/2010/03/28/weekinreview/28sangerintro.html?scp=2&sq=Iran&st=cse (accessed April 3, 2010).

in the face of fierce opposition from abroad. The answer appears to reside within of Cirinicione's fifth driver: Domestic politics, and more specifically, regime survival. Both Iran and North Korea have tenuous regimes, which both rely on deception of the public through huge amounts of propaganda, military strength, and use of force against dissidents to maintain their legitimacy in the eyes of their citizens. Both governments tout their nuclear programs as a vital national interest, and blame the rest of the international community for their internal problems. The Korean case in particular demonstrates a society that has been forced to accept famine and crushing poverty for a nuclear program, believing that their country will be invaded and annihilated without them.

Iran's circumstance is better in some ways, but more tenuous in others. As it stands, Iran still retains a great deal of international business and its citizens are nowhere near as impoverished as those in North Korea. However, Iranian citizens are far more educated than those in the DPRK, and are both aware of what has happened to the people of North Korea and unwilling to let the same happen to them. For this reason, Tehran has no choice but to walk an extremely delicate tightrope. They must continue their nuclear program to gain their nuclear option and maintain legitimacy in the eyes of the Iranian people, but they must maintain enough plausible deniability about the nature program to avoid global sanctions (or a military intervention) from the international community. It seems clear that Tehran believes that any deviation from this course could bring the downfall of the ideological faction, or even the Islamic Republic as a whole.

This brings this study to an important realization regarding Iran's nuclear program, and more importantly, a major insight as to the main motivations of potential proliferation states. During the course of this study, all of the states that chose to produce nuclear arms (with the possible exception of India) all had a common characteristic: they were deemed as absolutely critical to the survival of the government at the time. Pakistan viewed nuclear arms as a dire necessity to prevent an assault by a nuclear armed India. South Africa initially produced its nuclear arms to deter aggressors on its borders and expanding Soviet influence in Africa. Both North Korea and Iran appear to be pursuing their programs to legitimize their regimes domestically and deter potential enemies abroad. By contrast, both Libya and South Africa gave up their weapons programs once it became clear that those weapons were greater threats to their national security than guarantors of it. Regime survival appears to be the most critical driver/barrier of all when it comes to nuclear arms, whether it is survival against external threats or internal dissent.

With it becoming evident that the Iranian program has likely progressed too far to stop and that Iran views the attainment of the full fuel cycle as critical to its survival both at home and abroad, the main hypothesis of this work appears to have been proven. In spite of all costs and potential risks, Iran pursues its program with single-minded determination, out of the belief that the completion of their nuclear industry is necessary to maintain their legitimacy in the eyes of their public and demonstrate Iran's might to the Middle East. Similar experiences

with North Korea, South Africa, and Pakistan reinforce this finding. If a regime believes that its survival can be guaranteed by a nuclear program, it is liable to pursue that program until either it brings that program to fruition, or until it becomes evident that possessing nuclear arms is a greater risk to that regime's survival than not having them.

If the ideologues believe that the current course with the nuclear program has to be maintained for the sake of the survival of their regime, this will make the negotiation of a diplomatic settlement nearly impossible. This is especially true when combined with the ideologues' intrinsic animosity towards the United States and indifference to global opinion. With this in mind, it appears that the best strategy for the United States to implement in this scenario is a two phase plan. The first phase involves delaying the Iranian nuclear program by covert methods as much as possible. This is combined with outreach efforts to the moderates in the Iranian government and attempts to demonstrate to Iranian citizens the inherent dangers involved in pursuing the full fuel cycle. The goal is to delay the nuclear fuel cycle program from being completed until more moderate/pragmatic actors can return to prominence in the Islamic Republic, while retaining a measure of plausible deniability for the United States. Finally, the U.S. has to keep Israel restrained and prevent it from launching a preemptive strike.

However, the United States needs to anticipate that a more moderate faction may not be elected in the near future in Iran, and that Iran's nuclear

program could be completed during that time. The second phase involves containment of Iran after having declared full nuclear fuel cycle capability and preventing the crisis from escalating into a regional nuclear standoff. Deterrence of Iranian regional and nuclear ambitions in this scenario is the key component of this type of containment. Deterrence may seem difficult to enforce against a state like Iran, but works like *After Iran Gets the Bomb* by James Lindsay and Ray Takeyh demonstrate several effective means for the United States to limit Iranian attempts to exploit its nuclear gains. This work also discusses the policy options to be avoided by the United States if Iran gets a nuclear option, in addition to mitigating the inevitable damage done to confidence in American defense guarantees to regional states and its ability to keep Iran under control.

Proposed Policy Plan

Creating a foreign policy framework should be based upon the idea that regime survival is the most important factor in the continued development of a nuclear program. Therefore, a regime that views its survival as threatened (either from within or without) is likely to push for the completion of a nuclear program, and is more likely to abandon the program once it realizes that there is much to be gained from cooperation with the international community. This is especially likely in the Iranian case, as Tehran is known to be a fairly pragmatic actor in regards to many of its politics. In order to do business with Russia and China, Tehran ignores the oppression of ethnic Muslim minorities in either country, and

in spite of its inflammatory rhetoric against the United States and Israel, it has taken great pains to not directly provoke either. This suggests that the Islamic Republic can be considered a rational enough actor to be subject to this sort of cost-benefit analysis.

However, until Tehran can be shown to have fully completed their fuel cycle and are capable of producing weapons grade uranium, American options are rather limited. At best, the United States can try to delay the program through diplomatic and covert methods until the moderates can return to power in Tehran. The latter method in particular has proven effective, by enticing Iranian nuclear scientists to defect to the United States and by seeding the black market with defective centrifuge parts to delay Iranian progress in establishing their enrichment plants. [133] However, unless the moderate faction can regain power in Iranian politics quickly, it is unlikely that delaying the program in this manner will buy sufficient amounts of time. Given the distributed nature of the Iranian program, it is generally accepted that even a preemptive military strike will only delay the Iranian efforts, and would likely galvanize support for the ideological faction in Tehran.

However, American options expand considerably after Iran has completed its fuel cycle. Granted, the United States will have lost a significant amount of diplomatic credibility, especially with the other states of the Middle East, but it

[133] Julian Borger, 'Missing Iranian Nuclear Scientist 'Resettled' in the US', *Guardian*, March 31, 2010. http://www.guardian.co.uk/world/julian-borger-global-security-blog/2010/mar/31/iran-nuclear-weapons (accessed April 4, 2010).

should still be possible to reign in the situation as long as the U.S. acts responsibly and decisively. This is also the best time to demonstrate to Iran the extreme costs of pursuing the program, and there are a number of ways to perform this. Considering that prestige and economics appear to be the best means of inducing a country to give up a nuclear capability, these should form the cornerstone of all U.S. efforts. Iran would need to be utterly isolated politically from as many dealings in the Middle East as possible. Attempts to promote regional integration on security and economic issues in the Middle East should be made, with the deliberate exclusion of Tehran. The development of a full fuel cycle would likely cause Russia and China to sever their ties with Iran, which would aid in the implementation of sanctions, and would alienate Iran from its principal providers of armaments and foreign investment. Cutting off supplies of foreign uranium to Iran would also starve their fledgling nuclear industry of fuel, further crippling the program. One suggestion that has merit (but is also highly ambitious) is the deliberate inclusion of Syria in the Israeli/Palestinian peace process, again deliberately excluding Tehran. [134] Finally, efforts should be made to inform the citizens of Iran of the problems caused by the single-minded pursuit of nuclear energy by the ideological faction. The growing amount of technological prowess among Iranian citizens, especially among dissidents and protestors, makes the delivery of information to the Iranian populace that much

[134] Lindsay and Takeyh, "After Iran Gets the Bomb," pgs. 45-47.

more expedient. [135] Communities of Iranian expatriates should be considered to aid in this particular effort. The goal is to demonstrate to Tehran that the costs of its program are indeed far higher than they think, and to demonstrate that if they continue with the nuclear program, the security of their regime will be threatened, either from internal dissidents or external states. In the end, the idea is to either cause the regime to fold on the nuclear issue and ensure its own survival, or cause its downfall and bring about the election of a more moderate national actor.

However, there are two important caveats to this scenario. The first of these is that the United States must prevent Israel from launching a preemptive attack on the Iranian nuclear facilities, and refrain from doing so itself. It is widely accepted that an Israeli first-strike would do more harm than good, merely delaying the Iranian program and uniting the Iranian citizens under the banner of the ideological faction. If the regime survival approach is to work, Iran cannot be provided with a means to unify its populace against an outside aggressor. On the other hand, however, the United States *should* be prepared to use force against Iran in the event that Iran does complete its fuel cycle (or even develop actual nuclear arms). Clearly, this should be a last resort scenario, but if Iran begins using its nuclear card as a means to act belligerently to its neighboring states (either through threat of terrorism, conventional attack, or nuclear attack) the United States needs to be prepared to act appropriately. Also necessary to

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[135] Noam Cohen, 'Twitter on the Barricades: Six Lessons Learned', *New York Times*, June 20, 2009. http://www.nytimes.com/2009/06/21/weekinreview/21cohenweb.html?_r=1&scp=2&sq=Iran%20protest%20communications&st=cse (accessed April 4, 2010).

utilizing the regime survival method is containing Iran in this case, eliminating the belief that they can use the threat of force as regional leverage after gaining their nuclear option (or weapons). [136]

Closing Comments

This study has come to the conclusion that a strictly diplomatic solution with the Iranian government is unlikely under the current circumstances, and with the completion of Iran's fuel cycle considered only a matter of time, American options are becoming increasingly limited. However, the research does suggest that a military solution is not a necessity either. Delaying the Iranian program through covert means could delay the program for enough time until the moderates in the Iranian political apparatus can return to power. If this happens, the United States should not hesitate to reopen negotiations on the nuclear issue. These methods could also help prevent an Israeli preemptive strike, which would likely have a severe regional backlash. However, the United States should also not hesitate to act decisively if Iran gains a nuclear capability or actually builds a nuclear weapon. It must be made clear immediately that Iran's development of nuclear capability is absolutely unacceptable, and containment/reduction of Iranian regional influence should prove to Tehran the inherent risks of possessing a nuclear capability. As long as it is made clear that possession of nuclear arms will pose a greater threat to Iran's future than having them, Iran is likely to back

[136] Lindsay and Takeyh, "After Iran Gets the Bomb," pgs. 42-45.

off. A military response by the United States and the other Western states is something that should be avoided as much as possible, but the U.S. should not hesitate to employ a military response if Iran becomes too aggressive as a result of its nuclear capability. Finally, the United States has to make clear that any further development of nuclear arms in the Middle East is absolutely unacceptable, and be ready to cut off aid to any partner states in the Middle East that consider building or buying their own nuclear arms. If the United States acts both decisively and responsibly, a nuclear Iran need not escalate into a doomsday scenario in the Middle East.

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