The Driving Force Behind the Development of Nuclear Weapons

A Research Design

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THE PROBLEM

The global community has been working to curb the spread of nuclear weapons for over forty years, and 187 nations have become signatories to the Nuclear Nonproliferation Treaty (NPT), the backbone of the international nonproliferation regime.[1] Through various diplomatic, economic, and even military methods, individual leaders, state governments, and international governmental organizations have gone to great lengths to combat nuclear proliferation. And what are the results? Despite all of the efforts, the list of countries with nuclear weapons has grown more quickly in the last decade, as have the opportunities for proliferation.[2]

In addition to the United States, Britain, France, Russia, and China – the five Nuclear Weapons States (NWS) defined by the NPT – India and Pakistan have become de facto NWS by developing nuclear weapons and confirming the existence of their own arsenals in the1990s. And although still unacknowledged, Israel is also widely believed to have extensive nuclear capabilities.[3] Most recently, the regime in North Korea has strongly demonstrated its desires and intentions to develop nuclear weapons, and it appears Iran is on the verge of following the same path.

These recent events beg the question of a nonproliferation student: what do all of these countries have in common? More specifically, what key factors lead these nations to develop nuclear weapons? It has been argued by many experts that those countries

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[1] For more information, see United Nations NPT webpage at: http://www.un.org/Depts/dda/WMD/treaty/.
[2] Ibid.; "Future Priorities: Reinforcing Efforts to Prevent Nuclear Proliferation," Christopher W. Murray, Director, Bureau of Nonproliferation, text of speech delivered on December 16, 2002, available at: http://www.state.gov/t/np/rls/rm/16178.htm.
[3] Tariq Rauf, "Unequivocal Process? Implications of the NPT Review Conference," *CNS Reports*, July 25, 2000, Center for Nonproliferation Studies (CNS), available at: http://cns.miis.edu/pubs/reports/raufarms.htm; "Nuclear Weapons," *Country Profiles*, Federation of American Scientists (FAS), available at: http://www.fas.org/nuke/guide/israel/nuke/.

that perceive the existence of a looming threat from a neighboring country or foe are highly likely to pursue the development of nuclear weapons. This argument places emphasis on the motivation aspects of deciding in favor of nuclear weapons development. The most common examples cited with this argument are: the Soviet Union in the first decades of the Cold War; India's perceived threat from a nuclear China; and Pakistan's perceived threat from a nuclear India. It has been counter-argued by others that it is the presence of a scientific community – an elite group of physicists, more precisely – and their advances and achievements that are the driving force behind the development of nuclear weapons.[4] This argument places importance on the ability or capacity to develop nuclear weapons. A factor that may perhaps be somewhat similar is economic power and leverage. In other words, this factor explores the idea to what degree does having or not having the financial capacity influence the decision to develop nuclear weapons. This argument stresses the idea that a country must have the resources and infrastructure for developing nuclear weapons. And it has been argued by others still that the type of government may have as much to do with the pursuit of nuclear weapons. President George W. Bush may have insinuated this idea when he labeled Iraq, Iran, and North Korea as states that belong to "an axis of evil."[5]

This study seeks to learn how much any one of these, or any other factors not mentioned above, actually influences and ultimately determines the decisions of various countries to pursue the development of nuclear weapons. However, learning precisely what factors and/or circumstances are most important and influential to positively or

[4] Rajesh M. Basur, "Nuclear Weapons and Indian Strategic Culture," *Journal of Peace Research*, v. 38, no.2, March 1, 2001, p. 181, available at: http://ejournals.ebsco.com/direct.asp?ArticleID=M6MK6FWYNM1Y7M7LEW03.

[5] Text of President Bush's State of the Union Address, White House Office of the Press Secretary, January 29, 2002, available at: http://www.whitehouse.gov/news/releases/2002/01/20020129-11.html.

negatively affecting the decisions to develop nuclear weapons may be a valuable tool for curbing the spread of nuclear weapons. In turn, policymakers can form and fashion foreign policy goals and objectives accordingly.

HYPOTHESIS

This study will test the validity of the following idea: ***the presence of a perceived threat from a neighboring country or foe is the single greatest factor behind the decision and drive to develop nuclear weapons.***

The dependent variable in this study will be the positive or negative decision to develop nuclear weapons in a case country. To measure this, I will rely on purely open-source information regarding the existence or nonexistence of a nuclear weapons program. These will mostly consist of, but not be limited to, news media sources, academic sources, and declassified and open-source government documents.

The first of four independent variables, the presence of a perceived threat from a neighboring state or foe, will be measured by following and observing a case country's words and actions regarding other states, both of the government and those of individual officials. It should be noted that it may require reading "between the lines" when judging the rhetoric of those states that have a monopoly on communications and strictly control the flow of information. The second independent variable, the presence of an elite group of scientists, represents the non-political elite that is more concerned with the prestige and scientific achievements and less concerned about the political or economical

consequences. It is expected that such a group of elite physicists *may* sometimes be foreign citizens who are solely preoccupied with the development of nuclear weapons.

The third independent variable, economic power, will demonstrate how much economic strength plays a role in developing nuclear weapons. It is interesting to note that nuclear weapons, much more than chemical and biological weapons, require vast amounts of resources that are beyond the reach of most smaller countries of the world. Still, we have seen nations that are not considered to be wealthy that pursue and develop nuclear weapons. The last independent variable, the type of government, will be categorized into: a multiparty democracy, a republic, a theocratic republic, communist, a monarchy, and authoritarian rule. This variable will provide insights into the political and cultural elements behind the decision to develop nuclear weapons.

My desires to study this issue in much greater depth stems from the fact that three key academic and professional interests converge here: nonproliferation of weapons of mass destruction, American foreign policy, and geopolitics. When "Clash of the Civilizations" by Samuel P. Huntington, professor at Harvard, first appeared in *Foreign Affairs Magazine* in 1993, many scholars and students of international relations lauded the essay as innovative and ahead of the times.[6] More importantly, despite whether one agreed with his assessments or not, it provided a new way of perceiving and thinking about international relations and geopolitics at the systemic level at the time. This was perhaps brilliant, and certainly pioneering, considering it was written in the immediate years following the end of the Cold War, which lasted nearly a half-century. While I realize this study, if conducted and completed, will most likely not receive such praise

[6] Dr. Huntington's essay can be found at: http://www.foreignaffairs.org/19930601faessay5188/samuel-p-huntington/the-clash-of-civilizations.html.

and attention, my hope is that it may at least very slightly change the way in which people think and approach international relations and foreign policy issues in the future. Additionally, while I have found numerous sources on the topic of nuclear proliferation and nuclear arms control, I have yet to find any sources outside of historical accounts that discuss the developing stages extensively, which lead to the actual decision-making process prior to the development of nuclear weapons. Again, it is my lofty hope that this study can fill this gap of knowledge.[7]

CASES

The cases in this study will be comprised of ten countries. In an attempt to include cases of the right balance for an objective study, I have chosen countries which I perceived would have different perceptions of threat, various levels of science and engineering progress and achievements, different economics systems and strengths, and a variety of government types, while keeping in mind that some should have nuclear weapons programs and others not. Furthermore, ideas of cultural and ethnic backgrounds were motivating considerations in choosing the ten countries, as well as regional locations and unique historical circumstances of all countries during the decision-making process. Namely, the cases for this study are as follows: the Soviet Union, People's Republic of China, Israel, India, Pakistan, North Korea, Iran, Canada, Japan, and Saudi Arabia. It can be noted that the United States, the first of all countries to "go nuclear," is

[7] The following books provide great background – although purely historical in nature – of the decision-making process of the five Nuclear Weapons States, as defined in the NPT: Scilla McLean ed., "How Nuclear Weapons Decisions Are Made," St. Martin's Press: New York, 1986; "The Coming Crisis: nuclear proliferation, U.S. interests, and world order," Victor A. Utgoff ed., MIT Press: Cambridge, 2000; and "South Asia in 2020: future strategic balances and alliances," Michael R. Chambers ed., U.S. Army War College: Carlisle, 2002.

excluded from this list due to the uniqueness of being the very first to develop nuclear weapons and the surrounding historical circumstances of its decision to develop nuclear weapons. In other words, the U.S. cannot be thrust into the same group but, rather, deserves its own study and analysis.

OPERATIONALIZATION

Perceived threats from neighboring state or foe – this data will be derived from two sources: 1) perceptions of the public regarding the threats, and 2) perceptions of government officials and government leaders regarding the same threats. Both indicators will be scored between one (1), **low** perceived threat, to four (4), **high** perceived threat, and averaged to form one numerical value, being weighed equally. Being the motivational factor for development, it is expected this variable will be high in all cases where the decision to develop nuclear weapons was positive.

Influence of elite group of scientists – this data will provide insights into: 1) the individual country's public perception regarding the sciences and scientists, and 2) perceptions of government officials and government leaders regarding the same sciences and scientists. These indicators will also be scored between one (1), **low** opinion of scientists, to four (4), **high** opinion of scientists, and averaged to form one numerical value, being weighed equally. It is expected this variable will highlight the attitudes toward the scientists, prestige and respect associated with the scientists, and overall influence of the scientists on policymakers of various countries.

Economic power – the data for this variable will come from two simple statistical economic figures: gross domestic product (GDP) and GDP per capita. Both indicators

will be scored from one (1), **small** economy, to eight (8), **large** economy, according to the scale of index of all countries of the world, then the two indicators would be averaged to form one numerical value, being weighed equally. The GDP will represent the raw purchasing power of a country's resources to develop nuclear weapons. The GDP per capita is designed to portray more accurately how wealthy a country is or is not. Other economic facts, such as the extent of the government's involvement and the trading patterns, may be of significant observation.

Type of government – the data for this variable will simply provide the study with different government and political systems of the cases. To avoid confusion or ambiguities, I will use the terms **multiparty democracies, a republic, a theocratic republic, communist, a monarchy, and authoritarian rule**, and rely solely on the *CIA World Factbook* reference source.[8] In some cases, in may be appropriate to examine the historical background and/or other underlying factors concerning the types of governments.

POLICY ANALYSIS WORKSHEET

VARIABLES	**Independent Variables**				**Dependent Variable**
CASES	A Threats Perceived	B Clout of Elite Scientists	C Economic Power	D Type of Government	Nuclear Development Decision
U.S.S.R.					
China			7	Communist	Yes
Israel	4				
India		4			
Pakistan					Yes

[8] The *CIA World Factbook* is available for purchase from the Central Intelligence Agency, or at: http://www.cia.gov/cia/publications/factbook/.

North Korea			1		
Iran		2.5		Theo. Republic	
Canada	1.5				
Japan					No
Saudi Arabia				Monarchy	

* *Numeric data here are estimates only.*

DATA COLLECTION PLAN

Much of the data collection plan will mean utilizing existing data sources. These may include: news media sources, academic sources, and declassified and/or open-source government documents. It goes without saying that a third-party source of information will be preferred over the subject in question. Therefore, these sources will be particularly important when trying to collect and ascertain: 1) the true perceptions of government officials and government leaders regarding the threats posed by a neighboring state or foe, and 2) accurate perceptions of government officials and government leaders regarding the sciences and scientists of their own countries. Conversely, survey questionnaires will be utilized to ascertain and assess: 1) the perceptions of the public regarding threats from a neighboring state or foe, and 2) the perceptions of the public regarding the sciences and scientists within their countries. Collecting data for the other variables is expected to be purely research-oriented and without great difficulties.

DATA ANAYLSIS PLAN

As discussed earlier, the independent variables will receive one value – whether it is numerical or not, one figure or the average of two figures – to be compared and analyzed against each other. It is expected that a distinct pattern will form and appear that will lead the study to draw a confident conclusion in one direction or another. The hypothesis will have been proven to be false if the **threats perceived variable** (independent variable A) does not consistently receive high scores among the case countries that had decided positively on the decision to develop nuclear weapons. Regardless of the results, it is hoped that this study will, at the very least, lead to another hypothesis or beckon for a larger pool of cases.

PROPOSED BUDGET

	Items	**Cost**	**Total**
Travel	Air/ground transportation, lodging, food	$27,500	$27,500
Tools/materials	Computer	$1500	$2500
	Other supplies	$1000	
Communications	Phone, faxing	$200	$200
Stipend	Researcher	$16,000	$16,000
Total			$46,200

PROPOSED TIMELINE

	Month 1	**Month 2**	**Month 3**	**Month 4**	**Month 5**	**Month 6**
Initial Research	X					
Travel to/ Research Cases	X	X	X			

Continued Research		X	X			
Reviewing/ Outlining Data			X	X	X	
Writing Draft				X	X	
Final Research				X	X	X
Revising					X	X
Final Draft						X

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