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ARTIFICIAL INTELLIGENCE
AND
FOREIGN POLICY DECISION-MAKING

by

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With the advent of a global information society, the US will seek to tap the potential of advanced computing capability to enhance its ability to conduct foreign policy decision-making. This thesis explores the potential for improving individual and organizational decision-making capabilities by means of artificial intelligence (AI). The use of AI will allow us to take advantage of the plethora of information available to obtain an edge over potential adversaries. Another purpose of this thesis is to give guidance to the software community as to what policymakers will need in order to improve future decision-making processes. The third purpose is to encourage government and private sector decisionmakers to allocate adequate resources to actualize the potential of AI. The method of analysis this thesis uses is to examine US foreign policy decision-making on the cognitive or individual, group, and organizational levels. Using the Cuban Missile Crisis and the Yom Kippur War as test beds for critical analysis, identification of both decision enhancing and impeding functions is accomplished. Finally, a counterfactual analytic framework, using an AI model, tests the likely influence of AI on decision-making. The results substantiate the value of AI as both a decision-making enhancer and an impediment reducer for the policymaker. Additional conclusions are derived that improve the decision-making system and its processes by means of introducing an AI capability.

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ARTIFICIAL INTELLIGENCE AND FOREIGN POLICY DECISION-MAKING

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ABSTRACT

With the advent of a global information society, the US will seek to tap the potential of advanced computing capability to enhance its ability to conduct foreign policy decision-making. This thesis explores the potential for improving individual and organizational decision-making capabilities by means of artificial intelligence (AI). The use of AI will allow us to take advantage of the plethora of information available to obtain an edge over potential adversaries. Another purpose of this thesis is to give guidance to the software community as to what policymakers will need in order to improve future decision-making processes. The third purpose is to encourage government and private sector decisionmakers to allocate adequate resources to actualize the potential of AI. The method of analysis this thesis uses is to examine US foreign policy decision-making on the cognitive or individual, group, and organizational levels. Using the Cuban Missile Crisis and the Yom Kippur War as test beds for critical analysis, identification of both decision enhancing and impeding functions is accomplished. Finally, a counterfactual analytic framework, using an AI model, tests the likely influence of AI on decision-making. The results substantiate the value of AI as both a decision-making enhancer and an impediment reducer for the policymaker. Additional conclusions are derived that improve the decision-making system and its processes by means of introducing an AI capability.

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I. INTRODUCTION

"Although the world has changed, it remains a deeply turbulent and dangerous place."

Douglas Hurd, Foreign Secretary, speaking in the House of Commons, 27 February 1994

A. PURPOSE

The current U.S. grand strategy of "engagement and enlargement"[1] guarantees many international interactions and crises in the future. During the Gulf War, the world caught a glimpse of the future potential of technology and information warfare (IW). Alan D. Campen, Director of Command and Control Policy in the U.S. Defense Department, noted, perhaps hyperbolically, that this "was a war where an ounce of silicon in a computer may have had more effect than a ton of uranium."[2] Today, there is a wealth of scholarly research that seeks to understand how our society will transform and maximize information and technology in the future. This thesis will focus on the foreign policy decision-making element of this transformation. How can we tap the vast continuum of information to enhance our foreign policy decision-making capability? I propose that the use of artificial intelligence (AI) will allow us not only to improve our ability to make decisions, but to redefine our decision-making process, as we know it. The purpose of this thesis is twofold. The first is to give guidelines to the software engineering community as to what policymakers want in AI to improve foreign policy decision-making. The second is to convince both government and commercial policymakers to allocate requisite resources to accomplish this task.

The focus of my study of decision-making is at the national strategic level (National Command Authority – NCA) where foreign policy decisions are made. I consider this level of decision-making because it offers the most demanding test for an institution. The NCA is required to make high-impact decisions using vast numbers of inputs to direct foreign policy that has far-reaching implications, both internationally and domestically. Lessons learned in this analysis can also benefit other commercial or government organizations conducting decision-making by considering these techniques, procedures and technologies. The question I ask to

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[1] "A National Security Strategy for a New Century," *The National Security Strategy of the United States*, (The White House, May 1997).

[2] Cited in Alvin and Heidi Toffler, *War and Anti-War* (New York: Warner Books, 1993), p. 80.

articulate guidelines to the software engineering community is - Where do we focus AI capabilities and how will this influence the U.S. foreign policy decision-making process?

This question arises for two reasons. The first is the issue of content, within the context of a mushrooming global information society with easy access to this technology. There is currently a cascade of digitized information available on the Internet. This is making volumes of information available, almost beyond our comprehension, and it is increasing daily. This sea of information is creating the need to dissolve or restructure organizations in order to re-formulate the way we conduct business more efficiently. The second reason is the advent of conduits, the issue of modern telecommunications advancement providing access and increasing the speed at which information travels - to anyone. The proliferation of satellites and sensors around the world increases our situational awareness at lightning speeds. An unintended consequence to consider is that this can also clog our system with information. Thus, foreign policy decision-making is being conducted at an increasing tempo. U.S. foreign embassies are becoming less important and the foreign policy decision-making structure is becoming flatter due to the direct flow of information to policymakers and decisionmakers. The requirement of rapid decision-making is becoming more and more necessary to keep an edge on our competitors, in order to look out for our own national interests, and to maintain our reputation. Adapting to this new environment is necessary if we are to maintain our security, legitimacy, and competitiveness in an interactive global system. The U.S. will seek to stay inside all competitor decision-cycles to maintain leverage within the international system.[3] This is all the more reason to seek out uses of AI in order to dominate the information continuum and keep the U.S. on the cutting-edge of international policy.

Answers to this question matter because they will allow the foreign policy decision-making apparatus to tap the current and growing cascade of information using a vast network of modern telecommunications equipment to make fast, low-risk, high-quality decisions in order to stay ahead of our competitors. Alexander George states that "a high-quality decision is one in

[3] If one can stay inside his adversary's decision-cycle, one has the ability continually to outmaneuver him before he can counter your last move. This capability will allow you to outmaneuver him, and thus maintain a position of superiority over him. This is also highly economical from the standpoint of committing resources and soldiers. This is a notion drawn from Boyd's famous OODA loop.

which the president correctly weighs the national interest in a particular situation and chooses a policy or an option that is most likely to achieve national interest at acceptable cost and risk."[4]

These answers are important for two reasons. First, the study of foreign policy decision-making from a methodological and theoretical viewpoint increases our understanding and knowledge of the process. Second, my focus on several hypotheses derives from known scholarly theories of cognition, group dynamics and organizational behavior, that will help us to understand decision-making better, at various levels of analysis.

Software engineers tend to focus on their own particular areas of expertise. They look to policymakers or scholars to provide requirements for them to model a system. In order to assist software engineers in the future to devise a capability that the customer wants, I will provide an analytical framework for them to "weave in" AI. Designers and inventors who look to the future know that they are developing technology for an uncertain capability in the future. They focus on what might be thought of as a large circle on the horizon (future). Spending many man-hours and resources bouncing off the walls of a wide cylinder looking at a future large circle, trying to devise a capability and at the same time discover what it can be used for. I offer a solution with this paper, to present a focused lens for engineers to a dot on the horizon in the future. This can be set against looking through the wide end of a cone with the end being that future dot. I hope to accomplish two objectives with this technique. One, to optimize energy and resources spent, presenting an articulated capability to shoot for in the future. Second, to encourage other researchers interested in the future to take on such an approach to solve future problems by providing a more viable template (the cone) for designers.

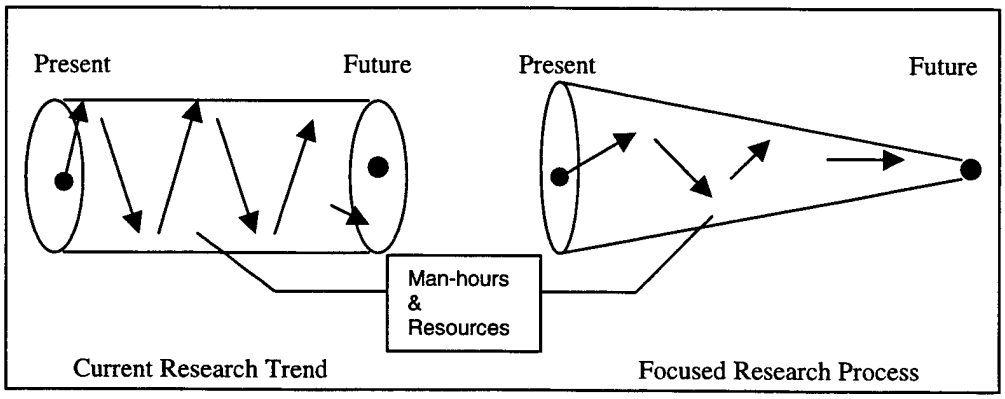

Figure 1.0. Future Resource Usage.

[4] Alexander L. George, *Presidential Decisionmaking in Foreign Policy: The effective Use of Information and Advice* (Boulder, Colorado: Westview Press, 1980), p. 3.

One of the most salient philosophical questions in the area of AI, and one with which we will come to grips with in our future, is: When, if ever, will man trust a machine to make decisions or have serious inputs into the decision-making process? I'm not talking about current capabilities of expert systems, monitoring gages, and making adjustments off of data. I am talking about actual cognitive decisions (reasoning) made that would impact a wide range of participants. It will be a historic day when the President is able to use AI as a "trusted advisor" to resolve a foreign policy issue. I expect this paper to bring this issue a bit closer to us.

Current debate on foreign policy decision-making focuses around the different characteristics each presidential administration brings to office. The debate centers on the politics that go into the decision-making process. The fact that politics plays an enormous part in our system means that AI would either be subject to or used for political ends. To counter any one-sided advantage, or to perpetuate parity, AI must therefore be dispersed throughout the decision-making system. Another area of debate that has been known to influence decisions in our past is the promotion of secrecy. Past administrations have had a tendency to put a shroud around the inner-workings of the security policymaking process. This "veil" of secrecy has been known to impact decisions, and it is my intent to treat this as a characteristic of the power-in-charge; a natural course for politics.

There is current debate in the design of software as to the bias put into it by engineers, which strikes at the heart of a major industry issue. It is essential to understand that biases do exist to the extent that the engineer who designs software products is human, and therefore, incorporates his or her biases into them. I intend to further explore this question in my thesis. As mentioned previously the question over what point in time humans will trust a machine's judgement, will continue to be an ongoing debate for a longtime, and one that will be key to the success of AI in improving decision-making processes. This issue brings up the inevitable debate about current AI research. This is the super-humanization of a machine that can learn, reason, have intuition, and be self-critical. Until this achievement is realized we will limit our ability to sift through judging masses of information at lightning speed. Regardless of the future progress of technology, as machines move closer to a "human-model," humans will have to learn to deal with this new type of relationship, one which poses a possible link to our future.

By beginning with this central question about where we focus AI capabilities, however, this paper provides a starting point from which to prompt further argument and analysis among

policymakers and scholars. Focusing on critical decision-making nodes is important for a second reason. As in expert systems, a key characteristic is that a system offers institutional knowledge with perfect recall. Every political administration seemingly re-invents the decision-making process, or modifies it for its own use. Though this is not wrong, it is inefficient. The "growing pains" to reconcile a high-impact decision-making apparatus are both inefficient and time consuming, creating inconsistencies with foreign and domestic policies, and possibly leaving the U.S. vulnerable to adversaries during a political transition. In this paper, I offer an alternative framework, one which emphasizes consistency in bridging to a new administration, keeping the same level of quality in decisional outputs. This thesis will provide analytic insight into theories that highlight critical elements in our decision-making process.

Incorporating AI into critical decision-making nodes will benefit both the policymaker and the participants in the process. This will allow them to tap new information technologies to formulate high-quality decisions. AI will not make perfect decisions, but rather will assist the decisionmaker in executing his judgement. The risk to the decisionmaker is still present; but AI may present alternatives, consequences and complex analysis that will provide invaluable assistance. AI can expand the capabilities of critical decision-making nodes, and exploit the vast quantity of information that will exist. This capability, in turn, will increase the human threshold for processing and analyzing information, decreasing uncertainty. AI may catalyze quicker and more accurate decisions, thus increasing the probability of success in high-impact fast-moving environments.

It is possible some will object to this technique of identifying decision-making nodes, and to the generally optimistic view of the future of AI. There are numerous and more technical models available to assess decision-making, offering highly complex analysis and requiring a technical background to understand. It is my intention to link two worlds – social science and software engineering - on common ground. To have social science theories meet with the capabilities of AI. The benefits of this concept relate to a wider audience to understand and thus promote in the future.

Using AI to assist in foreign policy decision-making may not only revolutionize the process, but also by making high-quality decisions, decrease the risks decisionmakers take. High-quality decisions are the essence or objective of using AI in the process. Quality is measured by examining the degree of intrinsic costs and risks relative to the benefits received.

concomitant benefits received. Incurred, decision risk may be decreased by the ability of AI to increase our knowledge, thus reducing uncertainty. Or, it may confirm that the situation is very risky. AI's capabilities will be explored in a future chapter, but my basic prescription is for self-thinking software. The distinguishing factor between AI and advanced filtering programs is that AI thinks. AI will reason and learn, building on a large global knowledge network. The most significant characteristic in this design is that AI self-learns. The first law of AI is to seek an 80 % versus a 100 % solution – as can be expected by a human in a similar situation.[5] Current innovations, that represent the leading edge of this technology, and offer great hope for self-thinking machines, are expert systems and fuzzy logic systems.[6]

B. METHODOLOGY

I will conduct my analysis using counterfactual argument and comparative case studies. Counterfactual case strategy makes claims about events that have not actually occurred but would have happened.[7] This type of analysis can aid our inductive reasoning by predicting how events may unfold if we vary the conditions on critical foreign policy decision-making nodes.[8] It is my intent to test my hypothesis of AI on these critical nodes. Stephen Van Evera writes: "When analysts discover counterfactual analyses they find persuasive they have found theories

[5] "The first law says that "computational constraints" on human thinking lead people to satisfied with a "good enough" solution rather than waiting for the optimal solution. This law is based on Herb Simon's Nobel Prize-winning research on decision making in organizations. When people must make decisions under conditions that overload human thinking capabilities, they use opportunistic strategies and tactics of 'optimal least computation search" rather than "optimal shortest path search." Much of AI is the study of approximate algorithms of optimal least computation search. Silicon-based intelligence, given its differences in memory access time and bandwidth, may indeed use different strategies and tactics than human intelligence." As stated by Raj Reddy, "The Challenge of Artificial Intelligence," *Computer*, (October 1996), p. 93.

[6] Edward A. Feigenbaum, "The Intelligence Use of Machine Intelligence," Seventh Annual Software Technology Conference, Salt Lake City, Utah, April 10, 1995, who is considered the father of expert systems states that an "expert system is essentially a symbolic computer model of human expertise in a specific domain of work." Charles Elkan, "The Paradoxical Success of Fuzzy Logic," *IEEE Expert* August 1994, states that in an effort to capture the uncertainties of ideas and their assertions "fuzzy logic is an attempt to capture valid patterns of reasoning about uncertainty."

[7] James D. Fearon, "Counterfactuals and Hypothesis Testing in Political Science," *World Politics*, Vol. 43 No. 2 (January 1991), p. 169.

[8] Stephen Van Evera, *Guide to Methods for Students of Political Science* (New York: Cornell University Press, 1997), p. 18.

they find persuasive, since all counterfactual predictions rests on theories."[9] James Fearon also states that "counterfactual comparison cases need not be exhaustively detailed-just specified-so the reader knows what variation the theory or hypothesis proposes to explain."[10] It is my intent to frame my hypothesis in a general manner so that predictions can be inferred from it and tested.[11] This approach explains my purpose of surveying the current body of knowledge on foreign policy decision-making, and applying it to two selected case studies. I draw my hypotheses from those theories that would be sensitive to the influence (changing conditions) of AI. My hypotheses generally state how AI can enhance the needs of the decision-making process and assist in countering decision impediments. I also survey the current body of research on AI to prescribe the types of capabilities appropriate to influencing critical decision-making nodes. AI has an evolving range of capabilities whose progress can be predicted by logical assessment of current research in this discipline. I will then conduct counterfactual analysis on two selected case studies to test my hypotheses.

I have chosen to use the comparative case study method to test whether AI can improve our decision-making processes on three levels of analysis; at the individual, small group, and organizational levels. The hypotheses imply predictions that are unique; they are not made by any other known decision theories. If I can confirm my predictions, then the case studies provide the necessary evidence to support my hypothesis. Therefore, these case studies qualify as affording strong tests of my hypotheses. Case studies offer three formats for testing theories. The one that offers the most effective test of my hypotheses is process tracing. This method allows the investigator to explore the decision-making process by which initial case conditions are translated into case outcomes.[12] The cause-and-effect link that connects independent variable and outcome is peeled and separated into smaller steps; then we look for observable evidence of each step. Process tracing predictions are often unique, because no other theories predict the same model of events. Hence, it offers an effective technique to apply to the case studies. It is my intent to conduct critical analysis of three levels in each case study to trace the process of

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[9] Ibid., p. 18.

[10] Fearon, p. 194.

[11] Van Evera, p. 19.

[12] Ibid., p. 46.

decision-making. The three levels of analysis are: 1) Individual (cognitive theory), 2) Group or Advisors (group dynamics) and 3) Organization (organizational theory). It is my plan to articulate both the needs of and impediments to good decision-making at each of these levels.

The case studies I have selected are US decision-making during the Cuban Missile Crisis (1962) and during the Yom Kippur War (1973). These selections are based on the following criteria: First, these two cases are well documented and were both quite serious crisis involving nuclear forces.[13] This should allow for good comparisons between the two case studies. Second, these events relate directly to the security of the state or a strong threat to our major values and interests, thus putting maximum stress on all variables within the system.[14] Barry Posen writes that it is reasonable to expect the maximum influence of environmental constraints and incentives and a high level of civilian political control over our military organizations when we relate our research to the security of the state.[15] Alexander L. George writes, that stress is present when a crisis comes as a surprise and quick decisions are required.[16] He also states that another form of stress in this environment is the cumulative emotional and physical fatigue that an international crisis often imposes on top decisionmakers and their staffs.[17]

As both of these cases lasted several weeks, this presents a good environment to test physical fatigue and emotional factors. Therefore, these two cases offer tough tests of my hypotheses, because they represent two highly rigorous crisis environments. Both environments were fast-moving and stressful, with high stakes. Decisionmakers in both crisis had to make "quality decisions," after considering a myriad of factors, most of which disguised their own uncertainties. Lastly, all levels of decision-making are represented here: individual, group and bureaucratic elements coalesced, that often overlapped, or competed to determine the U.S. decisional output. Third, these cases are appropriate for controlled comparisons with other case studies. These cases are characteristically similar because national decisionmakers and their administrations are dealing with the same types of decision security challenges to the state.

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[13] Suggested case study criteria is from Ibid., p. 61.

[14] George, p. 48.

[15] Barry R. Posen, *The Sources of Military Doctrine* (New York: Cornell University Press, 1984), p. 38.

[16] George, p. 48.

[17] Ibid., p. 48.

Their differences lie basically in the different political administrations in power at the time.[18] Fourth, the major actors involved, the U.S. and the Soviet Union, "are defended by large, modern and professional military organizations."[19] These represent good characteristics to study organizational theory hypotheses. Organizational theory has an enormous influence on decision-making. Fifth, the antagonists in these cases deal with satellite-state issues. This is an opportunity to observe an added layer of complexity around events that may be representative of our future.[20] These cases may thus enhance the predictive nature of this paper.

This thesis is composed of four sections. In the first, I survey the current body of thought on theories of the foreign policy decision-making process. I devise models from these theories and formulate my hypotheses to help trace the value of AI. Also, in this section I develop an AI model by surveying the current body of research in AI to describe the types of factors and capabilities that would be appropriate to influence critical decision-making nodes. This model will be used in the fourth section. The second and third sections are critical analyses of the Cuban Missile Crisis and the Yom Kippur War studied on three levels: cognitive, group and organization. In the final section I conduct counterfactual analysis of both the decision-making models and historic case studies to test my hypotheses. I test whether, if AI had been used in the Cuban Missile Crisis and during the Yom Kippur Nuclear Alert (1973), our policymakers would have produced different decisional outputs. I will also test whether, by using AI, both crises might have been averted.

[18] This criteria is taken from Van Evera, p. 62.

[19] Posen, p. 41.

[20] Ibid., p. 41.

II. ANALYTIC MODELS

The purpose of this chapter is to introduce an analytic framework for conceptualizing decision-making in foreign policy. This framework is made up of three models, each offering a specific perspective on decision-making at the national level. At this level, decisions are highly complex and cross into numerous bureaucratic and organizational domains. To add to the complexity, each domain generates and follows a separate set of parameters that may influence its output. As these forces interact, several phenomena can occur which work against the goals defined by the lead policymaker. In an effort to analyze this, we use the logic of explanation to single out the relevant and important determinants of an occurrence.[1] The conceptual model forms a critical filter through which to process these significant factors, and to explain a particular action. Thus, we are using a complex process to analyze the even more complex set of activities of governmental decision-making. It is important that these models carefully balance simplicity and complexity, so as to understand the event without obscuring it. The model then becomes "an abstract tool of understanding," and not an attempt "to reconstruct concrete reality in all its nuances and complexities."[2]

A. THE COGNITIVE DECISION-MAKING MODEL

"The handling of multiple objectives and the response to structural uncertainty required explanations at the level of the individual decision maker, and it was the cognitive process model which provided the best fit with the phenomena observed."

John D. Steinbruner, 1968, "The Mind and the Milieu of Policymakers: A Case History of the MLF," Ph.D. dissertation, MIT.

1. General

In the nuclear age, characterized by fear of the consequences of general war, foreign policy relies heavily on extensive diplomacy. As is well known, the governmental decision-making apparatus is complex and dynamic. I begin this section with the premise that the cognitive-level of analysis of key individuals is critical in the study of foreign policy decision-making. I make this assumption based on research conducted by Ole Holsti and his survey of

[1] Graham T. Allison, *Essence of Decision*, (Boston: HarperCollins Publishers, 1971), p. 4.

[2] Harry Eckstein, Theoretical Approaches to Explaining Collective Political Violence," in *Handbook of Political Conflict: Theory and Practice*, ed. Ted Gurr, (New York: Free Press, 1980), p. 162.

scholars' work conducting critical analyses on several historic foreign policy cases.[3] Holsti argues "that by the time one takes into account systematic, societal, governmental, and bureaucratic constraints on decisionmakers, much of the variance in foreign policy making has been accounted for; attributes of the individual decisionmaker are thus often regarded as a residual category that may be said to account for the unexplained variance."[4] This belief has been contested by numerous scholars who find that further research on decisionmaking would prove rewarding if focused on crises.[5] This recognizes that the decisionmaker becomes critical to influencing an outcome in this scenario, because the organizational system in place is structured for more routine-type support. Though it would be valuable to analyze the numerous decisionmakers who participate in the collective decision-making process, this study will focus on the key actor in the crisis. This will suffice to illustrate the significance of cognitive theory in foreign policy decision-making. This section will first present some background into the nature of the key actor; next I will describe a cognitive model for decision-making to be used to conduct critical analysis of two key actors in two crisis-type case studies.

2. Background

When the President takes office he brings with him a "cognitive style" which informs the structure he uses to conduct foreign policy decision-making. For the purposes of this paper, the elements in this structure are the President, his close advisors (group dynamics) and their supporting bureaucracies (organizational theory). All three levels are interconnected and synchronized to provide the best possible advice so as to achieve a "high quality" decision.[6] The style he imposes on this complex network focuses the organization of its elements to support

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[3] Ole Holsti, "Foreign Policy Formation Viewed Cognitively," *Structure of Decision*, ed. Robert Axelrod, (Princeton, N.J.: Princeton University Press, 1976), pp. 31-33.

[4] Ibid., p. 29.

[5] Ibid., pp. 29-30, Numerous scholars have supported this according to Holsti. Holsti defines this crisis environment as being characterized by non-routine situations, leaders free from organizational pressure, long-range policy planning, situations themselves are highly ambiguous, information overload on decisionmakers, unanticipated events, impaired complex cognitive tasks due to stress.

[6] Alexander L. George, *Presidential Decisionmaking in Foreign Policy: The Effective Use of Information and Advice*, (Boulder, Colorado, Westview Press: 1980), p. 3, states "a high-quality decision is one in which the president correctly weighs the national interest in a particular situation and chooses a policy or an option that is most likely to achieve national interest at acceptable cost and risk."

him. Specifically, his style defines his information needs and establishes the preferred methods of information acquisition and use from those around him. Additionally, it impacts on his preferences regarding advisors, and how he uses them for his decisions.[7]

Where does all this effort and input go? It is first essential for us to designate a framework that identifies five procedural tasks that must be performed within a policy system if the President is to receive information, analysis and advice of reasonably good quality (see Figure 2.1). After having been presented with the results of these tasks, he stands to assess this information, give further guidance, or render a decision on a particular course of action (see Figure 2.2).

Five Critical Procedural Tasks in Effective Decision-Making

1. Ensure that sufficient information about the situation at hand is obtained and that it is analyzed adequately so that it provides policymakers with an incisive and valid diagnosis of the problem.
2. Facilitate consideration of all major values and interests affected by the policy at hand. Thus, the initial objectives established to guide development and appraisal of options should be examined to determine whether they express adequately the values and interests imbedded in the problem and, if necessary, objectives and goals should be reformulated.
3. Assure a search for a relatively wide range of options and a reasonably thorough evaluation of the expected consequences of each. The possible costs and risks of an option as well as its expected or hoped for benefits should be carefully assessed; uncertainties affecting these calculations should be identified, analyzed, and taken into account before determining the preferred course of action.
4. Provide for careful consideration of the problems that may arise in implementing the options under consideration; such evaluations should be taken into account in weighing the attractiveness of the options.
5. Maintain receptivity to indications that current policies are not working out well, and cultivate an ability to learn from experience.

Figure 2.1. Five Critical Procedural Tasks in Effective Decision-making. Source: George, *Presidential Decisionmaking in Foreign Policy: The Effective Use of Information and Advice*, 1980, p. 3.

[7] Ibid., p. 147.

High Quality Decision-Making Procedures

1) Thoroughly canvassed a wide range of alternative courses of action.
2) Carefully weighted the costs, drawbacks, and subtle risks of negative consequences, as well as the positive consequences, that could flow from what initially seemed the most advantages courses of action.
3) Continuously searched for relevant information for evaluating the policy alternatives.
4) Conscientiously took account of the information and the expert judgements to which they were exposed, even when the information or judgements did not support the courses of action they initially preferred.
5) Reexamined the positive and negative consequences of all the main alternatives, including those originally considered unacceptable, before making a final choice.
6) Made more detailed provisions for executing the chosen course of action, with special attention to contingency plans that might be required if various known risks were to materialize.

Figure 2.2. High Quality Decision-making Procedures. Source: Irving L. Janis, *Victims of Groupthink*, (Houghton Mifflin Company: Boston, 1972), p. 142.

The rest of this section surveys the current body of knowledge of cognitive theory to dissect the psychological needs and impediments of individuals charged with making decisions in crisis-type environments. We ask ourselves - what does the President bring to the decision-making equation, and how does this influence the outcome?

3. Cognitive Characteristics of Individual Decision-Making

Cognitive theory defines how forces acting on an individual affect his ability to make key decisions about complex problems that are usually characterized by value-complexity, multiple objectives and uncertainty.[8] Such issues are often clouded by value-complexity, a state wherein there is a lack of the requisite information to complete a thorough examination of policy alternatives and their consequences.[9] One may be tempted to associate an individual's actions with his role in a government entwined in bureaucratic politics. However, historical research has shown that, in a crisis, this effect plays only a minor role compared to the decisionmaker's

[8] Ibid., p. 17. I have adapted those environments - value-complexity and uncertainty - which best describe the circumstances under which the decisionmaker will be required to perform, and multiple objectives from John D. Steinbruner, *The Mind and the Milieu of Policymakers: A Case History of the MLF*, diss., MIT, 1968.

[9] Ibid., p. 17. When a policy issue engages multiple competing values, the decisionmaker may find it difficult to articulate a course of action that promises to couple all of these values and interests; he may be forced, instead, to determine his value priorities and choose from them. Value trade-off dilemmas of this kind are tough to resolve by analytical techniques; they may create considerable frustration and psychological stress for the conscientious decisionmaker. To cope with the ensuing emotional distress, he may exercise defensive mechanisms for dealing with the value complexity imbedded in the policy issue.

cognitive approach.[10] The importance of this cognitive approach can be described through one's beliefs. We cannot fully capture nor predict an individual's "psychological signature" (beliefs), nor his reaction to pressures involving difficult decision-making scenarios. What we can formulate is an abstract picture using the current body of literature in cognitive psychology that addresses decisionmaker characteristics. This abstract picture allows us to describe the cognitive "How's and Why's" behind individual decision-making.

The decisionmaker brings to the job a set of known skills proven to be effective for him. These are categorized as personal motives, and the values and political interests that stem from his pre-existing beliefs and images. Thus, he sees the world through his personal frames-of-reference.[11] Decisionmakers often operate using complex motivational patterns which, in essence, form their personalities.[12] His numerous cognitive beliefs shape his behavior and can be treated as the "Why" behind his decisions.[13] These beliefs direct his perceptions on how his decisions will influence a desired outcome. He also has a tendency to avoid complex cognitive tasks, and attempts to simplify the problem until it is within his cognitive ability to solve it

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[10] Holsti, pp. 31-33.

[11] Ibid., p. 19. A fundamental of cognitive psychology is that the mind structures reality thus tending to oversimplify or distort it. It also seeks to make beliefs consistent with each other and incoming information consistent with existing beliefs. The intensity to strive for consistency limits the flexibility and ingenuity with which an individual can recognize and deal with novel and complex features of foreign policy issues. Holsti, pp. 19-20, states it is generally recognized that an individual's behavior is in large part shaped by the manner in which he perceives, diagnoses, and evaluates his physical and social environment. Similarly, it is recognized that in order to experience and cope with the complex, confusing reality of the environment, individuals have to form simplified beliefs about the nature of the world. Deborah W. Larson, *Origins of Containment*, (Princeton University Press: Princeton, N.J., 1985), p. 22 states it is a fundamental premise of cognitive psychology that individuals respond according to their interpretation of a stimulus, and that this interpretation does not necessarily agree with its "objective" properties. Cognitive psychologists view people as "information processors" whose behavior is largely determined by the way in which they select, code, store, and retrieve information from the environment. Consequently, a key to understanding individual variability lies in the study of cognitive processes. William Appleman Williams, "Fire in the Ashes of Scientific History," *William and Mary Quarterly* 19 (April 1962), p. 275, 278, holds the opinion now shared by most psychologists that individual beliefs are the residue of the correlation between a person's conceptual tools and the environment. Williams often used ideology as a catchall to refer to beliefs, ideals, or conceptions that disguise reality, concealing from official policymakers their true interests (in this case) in renouncing empire.

[12] George, p. 4, states that these patterns often include deficits or vulnerabilities in their self-esteem for which they attempt to obtain compensation in the pursuit of their careers and in the day-to-day performance of tasks associated with their occupations. It often is not at all difficult to find evidence that an individual's character-rooted needs – whether it be an unusual need for affection, respect, aggression, rectitude, power, security, etc. – or his ego defenses are being expressed in the performance of tasks associated with his position.

[13] Holsti, pp. 19-20, also states that "an individual's perceptions, in turn, are filtered through clusters of beliefs." Holsti also associates beliefs to decision-making.

rationally. This means he will tend to transform a problem into one or more simpler problems. This can be described as the "How" he makes decisions. Information as he perceives it, becomes the currency of his cognitive model.[14]

A relatively new shift in how scholars study individuals and decision-making has come in the field of psychology by addressing it as a common information-processing framework. This has sparked a fundamental shift in the paradigm. The early cognitive balance theories viewed man as a "consistency-seeker," an exhibition of his dissonance reduction bias. This was due in large part to the belief that man was a passive agent who responded to the stimuli in his environment.[15] However, current thought pits man as a "problem solver," selectively responding to and actively shaping his environment. This school of thought has gathered under the rubric of attribution theory.

Attribution theory portrays man as relatively open-minded in search for truth, uncompelled by the need to maintain a favorable self-image or maintain a favored belief.[16] This theory addresses "How" he makes his decisions. His mind is a belief-seeking rather than a fact-seeking mechanism.[17] Man as a "problem-solver" shifts attention to three types of activities in which he embarks to understand and apply some control over the environment and the outcomes of social situations. He seeks (1) to discern the attributes of other actors and social phenomenon; (2) to infer the causes of salient events; and (3) to predict historical trends and the behavior of other persons.[18] Use of this <u>newer</u> theory does not warrant disregard of the older "consistency-

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[14] Debra L. Lavoy, *Nuclear Decisionmaking*-Concept Paper, (Monterey, California: Thinking Tools, Inc., 1996), p. 7, best simplifies the relationship of the decisionmaker and his cognitive process. An analogy of this would be to play chess with a particular strategy in-mind, while not paying attention to your opponent's strategy. You become predisposed with your plan and try to fit every move into supporting your strategy.

[15] George, p. 56.

[16] Shelly E. Taylor, "The Interface of Cognitive and Social Psychology," *Cognition, Social Behavior, and the Environment*, ed. John H. Harvey (Hillsdale, N.J.: Lawrence Erlbaum, 1980); McGuire, "The Development of Theory in Social Psychology," p. 62; Billig, *Ideology and Social Psychology*, pp. 172-173. Larson, p. 35, states attribution theory is concerned with people's attempt to explain the events of everyday life, draw inferences about the unchanging properties of the social milieu, and make predictions about the behavior of the other people. Robert Jervis, *Perception and Misperception in International Politics*, (Princeton University Press: Princeton, N.J., 1976), pp. 32-43, suggests that the concepts and hypotheses of attribution theory might be useful for understanding foreign policy: because it is impossible for policymakers to satisfy the requirements of the scientific model in their attempts to explain and interpret international events, they must resort to principles of "naïve epistemology" in making judgements about other states.

[17] Holsti, p. 20.

[18] George, p. 58.

seeker theory," because man still displays a strong tendency to see what he expects to see and to assimilate incoming information according to the images, hypotheses and theories that he has already formed.[19] According to George, an individual's striving for consistency need not alarm us when his interpretation of new information is not clearly logical, or when preexisting beliefs are adequately grounded in previous experiences.[20] We see that individuals, in their decision-making processes, exhibit behaviors definable within each of these two theories. At times, man selectively responds to and actively tries to shape his environment. At other times, he also responds to stimuli in it. Concurrently, his core beliefs and images revise his perceptions, which then direct his behavior. Collectively, these characteristics establish the individual's cognitive decision-making dynamic.

In summary, this section delineates several cognitive characteristics of the decisionmaker that describe the "How and Why" of his decisions. The "How" can be defined by correlating dissonance theory and attribution theory, and the "Why," by the beliefs he uses to assess his reality. Every individual develops ways of identifying, processing, coding, and using information presented to them. Additionally, the individual's cognitive heuristics constantly revise his set of beliefs about the environment, about the attributes of the actors, and about various presumed salient interactions that help him explain and predict areas that interest him. Beliefs of this kind organize, prioritize and simplify an individual's space; that is they serve as his "framework of reality." This dynamic can be described as his "bounded rationality."[21] As Herbert Simon has put it, "the capacity of the human mind for formulating and solving complex problems is very small compared with the size of the problem whose solution is required for objectively rational behavior in the real world – or even a reasonable approximation of such

[19] Leon Festinger, *A Theory of Cognitive Dissonance*, (Stanford: Stanford University Press, 1957), pp. 13, 31, states the basic hypotheses for dissonance theory are: "1) The existence of dissonance, being psychologically uncomfortable, will motivate the person to try to reduce dissonance and achieve consonance. 2) When dissonance is present, in addition to trying to reduce it, the person will actively avoid situations and information which would likely increase the dissonance." According to Festinger, the presence of dissonance creates a negative drive state that motivates the person to reduce or eliminate the inconsistency. The greater the dissonance, the greater the pressures for its reduction. Also Ibid., p. 61.

[20] George, p. 63.

[21] Bounded rationality is the concept that individuals with incomplete or overly complex information are unable to make strictly rational decisions, but they will make rational decisions within certain parameters that they have established for themselves.

objective rationality."[22] This is important because it defines the beliefs an individual uses to influence the cognitive outcome of his decisions. These boundaries lay the foundation for the next step – to conduct decisions in a dynamic environment.

4. Cognitive Impediments to Individual Decision-Making

Throughout a crisis, a decisionmaker is subjected to numerous pressures. His environment can generate several cognitive-driven impediments and each has a potential impact on the decisional input. As mentioned earlier, conflicting values, multiple objectives and uncertainty characterize the context of complex policy issues. This is where we will observe impediments to cognitive decision-making processes. In the case of value-complexity, he may initially attempt to resolve value conflicts, seeking to devise a solution that seems to satisfy all competing values.[23] This renders a diluted solution, and can create ever more ambiguity. Or, he may accept the value conflict as unavoidable, thereby facing up to the fact that he must make a difficult trade-off. The danger in this scenario is that his perception may be incorrect, and his actions counterproductive. Finally, in the third, he might find the issue too difficult to deal with, and seek to avoid it altogether.

In an environment of uncertainty, a leader is often tasked with making high-stakes decisions at a time-compressed tempo, thus generating a level of tension. He may employ several psychological devices to help reduce or avoid this. One such device is "defense avoidance."[24] Pushing the problem out of his mind, possibly by procrastination, or failing to pursue more information, results in a diminished priority. Eventually, he hopes the system will take care of it. Another device is "bolstering," in those cases where a decision cannot be postponed. This is the reevaluation of options, resulting in the increased attractiveness of one particular option with a concurrent downgrading of competing options. This process often brings to the fore an obvious, but suboptimal, choice.[25]

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[22] Herbert Simon, *Administrative Behavior: A Study of Decision-Making Processes in Administration Organization*, (New York, 1957),p. 198.

[23] George, p. 18, discusses the three complex-value scenarios.

[24] Ibid.

[25] Ibid., pp. 18-19, discusses several uncertainty symptoms, psychological impact and solutions.

There are also a variety of cognitive aids he can enlist to assist him in this ambiguous environment. These aids (see Figure 2.3) tend to facilitate choice. If he resorts to their use too soon, he may restrict the information flow to himself, hindering the benefit of a broader or more in-depth analysis from advisors or the organizational information processing system.[26]

Cognitive Aids to Decision

1) Use of a "satisficing" rather than an optimizing decision rule.
2) The strategy of incrementalism.
3) "Consensus politics" – i.e., deciding on the basis of what enough people want and will support rather than via an attempt to master the complexity of the policy issue.
4) Use of historical analogies.
5) Reliance upon ideology and general principles as guides to action.
6) Application of beliefs about correct strategy and tactics.

Figure 2.3. Cognitive Aids to Decision. Source: George, p. 19.[27]

Attribution theory (problem-solver) and dissonance-reduction biases have flaws. Attribution theory tends to exaggerate situational variables when explaining ones' own behavior and to undervalue them when explaining the behavior of others.[28] Another is to overlook the value of a nonoccurrence in the behavior of an individual or in the explanation of a situation. The importance of something not happening may be just as important as the actual event. Yet, another is to define his own role depending on the attractiveness of the outcome. Lastly, one tends to demonstrate the use of heuristic principles intuitively to judge and predict the outcomes of certain events in the face of known probabilities. This allows the individual to reduce the complex task of assessing probabilities and predicting values, to easier cognitive judgements he feels more comfortable using.[29]

Kahneman, Slovic and Tversky discuss two pertinent heuristics of the decisionmaker. First is that of "availability," leading someone to assess the frequency of an event based on personal experience or a more recent memory as opposed to recognizing probability data. This

[26] Ibid., p. 19.

[27] Irving L. Janis and Leon Mann, *Decision Making*, (New York: The Free Press, 1977), pp. 21-39, also discuss several aids to decision-making. These are similar if not identical to George's.

[28] Ibid., p. 59-61 details attributional biases that affect decision-making.

[29] Daniel Kahneman, Paul Slovic, and Amos Tversky, ed., *Judgement under Uncertainty: Heuristics and Bias*, (Cambridge: Cambridge University Press, 1982), p. 3.

shortsightedness creates a predictable bias. Another heuristic is "representiveness," leading one to select outcomes from salient information, regardless of known probability information. In short we can label this as someone's "stereotype" of information. This approach to judging probabilities leads to serious errors in prediction, because it also ignores their significance.[30] In short, both these heuristic principles place great weight on an individual's own memory and personal experiences to assess a set of probabilities and predict the nature of the information being represented. One last type of bias that is made in making predictions occurs when a person confuses the conceivability of an outcome with its probability.[31] This is a common problem when one must judge the credibility of various scenarios when there is little historic supporting data. While a scenario's components may be extant, whether it occurs also depends on their interaction. Without giving due consideration to these two sides of the analytical coin one cannot properly understand the situation in question. An individual's use of heuristics is inevitable, because they must recreate the cognitive process in order to simplify and execute the complex task of prediction.

Dissonance-reduction bias, or "consistency seeking," is inherent in human behavior. As information passes through an individual's filters and is processed, tendency is to conform new information with existing beliefs. Once this is recognized as a potential impediment, systematic designs can control for this tendency and avoid their pitfalls. The quest for consistency becomes suspect and demands greater vigilance in information processing when: 1) the controlling beliefs are not well-grounded to begin with; 2) the individual relies upon inappropriate beliefs or irrelevant rationalizations to ward off incoming information; 3) the assimilation of the new information into preexisting beliefs involves violations of generally accepted rules for treating evidence; 4) the individual fails to notice events of obvious importance that contradict his beliefs or theories; 5) he displays unwillingness to look for evidence that is readily available which would challenge his existing policy beliefs; 6) he refuses to address the arguments of those who disagree with his interpretation of events, and 7) he repeatedly shifts rationales on behalf of his policy in response to new facts.[32] These rules ought to alert an individual of any excessiveness

[30] Ibid., pp. 4-14, discusses these two heuristic principles.

[31] George, p. 61.

[32] George, p. 63, Holsti, p. 53, Janis and Mann, pp. 213-216, Larson, pp. 29-34.

in the pursuit of consistency, avoiding biased information processing and distorted information appraisal.

Another impediment, which has significant historical precedence, is the decisionmaker's misperceptions of the adversary and his perspective. It is common for policymakers dealing in foreign affairs to impose "Model I," or a rational actor label, on an opposing country. This allows him to create a set of alternatives based on his inferences about how the adversary will react to the given circumstances. To make things easier, policymakers go one step further and assume the opponent is a single actor. This hinders decision-making by ignoring the complex play of organizational dynamics within the opposing government. Similarly, a policymaker also tends to apply the national interest of the opponent as a basis to understand and predict his behavior. This again is a vague assumption with little in-depth analysis. Lastly, policymakers tend to assume that the opponent he is up against is rational and will perform his duties in a rational way. Therefore, he believes his opponent will follow what appears to be a rational decision chain, even though this does not offer a sound basis for estimating how he chose to act.[33] These are important considerations when one assesses an opponent's actions.

Many decisionmakers use lessons learned from history to form their beliefs and perceptions. Thucydides said he wrote for "...those who want to understand clearly the events which happened in the past and which (human nature being what it is) will at some time or other and in much the same ways be repeated in the future."[34] There is little question as to the importance of history in assisting policymakers in decision-making. And yet, it is important not become captive to history and lose sight of the problem at hand. This brings us to the drawbacks of using history in conjunction with the defined models. Within the abstraction of dissonance theory many people have a tendency to look at history in a way that forces their constructs on the events themselves. Thus, "history does not repeat itself in the real world but it does repeat itself in the 'reality world' of the mind."[35] Policymakers often cope with the difficulty of comprehending and dealing with new situations by using historical analogies. Many are drawn from relatively recent history – an event personally experienced early in life, or of which he is

[33] George, p. 67, Holsti, pp. 26-27, Janis and Mann, pp. 120-129, Jervis, pp. 319-342.

[34] Thucydides, *History of the Peloponnesian Wars*, trans. Rex Warner (London: Penguin Books, 1954), p. 24.

[35] Davis Bobrow, "The Chinese Communist Conflict System," *Orbis* 9 (Winter 1966), p. 931.

aware through contact with significant figures in his intellectual development. Many times it is also the remembered history of an era or generation.[36] The shortfall is that decisionmakers have a tendency to seize upon the first analogy that comes to mind, and do not pursue more in-depth analysis and testing to see if it is plausible. They tend to seize on a trend running toward the present, and assume it will run into the future.[37]

One condition that warrants consideration is stress. When stress acts on the policymaker, it can place impediments in the way of his decision-making process. To help understand this better we must first consider its characteristics in a crisis-type environment. The first source of stress is the high stakes of an international crisis, when policymakers must deal with a strong threat to major values and interests for which they are held responsible. A second source is the amount of warning involved with the advent of the crisis. A third is the necessity for rapid decision-making in a highly fluid environment. The increased tempo and demand for action are an anomaly for the policymaker's normal schedule. Lastly, the physical and emotional demands of a crisis can cause debilitating fatigue. Prolonged functioning in this state impedes even the brightest of individuals and can cause their judgement to falter.[38] The influence of stress creates several effects that may hinder the requisite complex cognitive tasks and alter the decision-making process of the policymaker.

The cognitive impact of stress can cause one to display a specific pattern of vigilance. This behavior results in thorough information search, unbiased assimilation of new information, and other characteristics of high-quality decision-making.[39] But, stress can also cause negative symptoms in one's decision-making process. Here is a brief list on how stress affects the conduct of complex cognitive tasks: 1) Impaired attention and perception; 2) Increased cognitive

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[36] George, p. 43, Jervis, p. 217, Janis and Mann, pp. 28-29, 277. Richard E. Neustadt and Ernest R. May, *Thinking in Time*, (New York: Free Press, 1986), pp. 232-246.

[37] Ernest R. May, *Lessons of the Past*, (New York: Oxford University Press, 1973), p. xi.

[38] George, p. 48, describes these four sources of stress. Janis and Mann, pp. 46-52 address stress symptoms and set the stage for its influence on cognitive thought processes.

[39] Janis and Mann, p. 52, and Ole Holsti, "International Relations Models," *Explaining the History of American Foreign Relations*, ed. Michael J. Hogan and Thomas G. Paterson, (Cambridge: Cambridge University Press, 1991), p. 82.

rigidity; 3) Shortened and narrow perspective and, 4) Shifting the burden to the opponent.[40] The policymaker must be aware of these symptoms of stress so he can take steps to minimize their effects and allow for quality decision-making.

In this section I discussed the cognitive impediments that influence a policymaker's decision-making process in a crisis. The cognitive characteristics of the policymaker, as a "problem-solver" and a "consistency-seeker," also have vulnerabilities that can impede a quality decision-making process. The crisis environment brings these obstacles to the surface, creating dangerous challenges for the policymaker both to recognize and overcome. This must be accomplished to improve the quality of individual outputs.

B. THE GROUP DYNAMIC MODEL

1. General

I intend to use Alexander L. George's proposed characteristics of group dynamics to conduct this analysis. His model addresses the current body of thought in this area, incorporating landmark works by Irving L. Janis, *Victims of Groupthink* and Ole R. Holsti, *International Relations Models.*[41] Janis challenged the old conventional wisdom that cohesive groups enhance performance. Instead, he felt that strong group cohesion could significantly degrade their performance. He was able to analyze several historic cases and identify eight major symptoms of groupthink (see Figure 2.4).

Eight Symptoms of Groupthink

1. Illusion of invulnerability – creates excessive optimism, encourages taking risk
2. Collective rationalization – to discount warnings which might lead to reconsideration of decisions
3. Belief in inherent morality of the group – may ignore ethical or moral consequences
4. Stereotypes of out-groups – put a dangerous label on the adversary
5. Direct pressure on dissenters – question their actions as disloyal
6. Self-censorship – each person may tend to minimize his doubts and counter arguments
7. Illusion of unanimity – augmented by the false assumption that silence implies consent
8. Self-appointed mind guards – members who protect the group from adverse information

Figure 2.4. Eight Symptoms of Groupthink. Source: Janis, pp. 203-206.

[40] George, p. 49, discusses these affects in further detail. Janis and Mann, pp. 50-52, describe in detail five basic assumptions of stress.

[41] Irving L. Janis, *Victims of Groupthink* (Boston: Houghton Mifflin Company, 1972) and Ole R. Holsti, "International Relations Models," *Explaining the History of American Foreign Relations*, ed. Michael J. Hogan and Thomas G. Paterson (Cambridge: Cambridge University Press, 1991), pp. 57-88.

He also noted that these symptoms result in a failure to solve problems adequately and lists six major defects (see Figure 2.5).

Six Major Defects in Decision-Making

1. Limited discussions to a few alternatives without a survey of the full range of alternatives
2. Failure to reexamine the course of action initially preferred, looking at nonobvious risks and drawbacks
3. Neglect courses of action initially evaluated as unsatisfactory
4. Members make little or no attempt to obtain information from experts
5. Selective bias is shown in the way the group reacts to factual information and relevant judgments from experts
6. Members spend little time working out contingency plans to cope with foreseeable setbacks which could jeopardize their course of action

Figure 2.5. Six Major Defects in Decision-making. Source: Janis, p. 10.

Ole R. Holsti also identified several characteristics of group dynamics based mostly on Irving Janis's and Leon Festinger's work. He states that groups may be more effective for some tasks and less for others. He restates that groups tend to pressure internally for conformity to their norms. The residual effect is that a group stifles the pursuit of options and research, as well as curtailing independent evaluation and suppressing some forms of group conflict. Holsti states that individuals in groups, as a way of dealing with stress and bolstering self-esteem, seek to increase the frequency and intensity for meetings with other members. This results in greater identification with the group and less competition within it. Holsti again restates that, as a consequence, groups may be more afflicted by feelings of optimism and invulnerability, they may have stereotyped images of their adversaries, and be inattentive to warning.[42]

2. Group Characteristics

Group dynamics is about conducting critical and creative analysis in a collective environment to render an optimal consented recommendation. The results are expected to be beyond what a single human would achieve alone. Each member of the group contributes expertise, but also biases. Like any human, each member must weigh arguments and assess risks before supporting a recommendation. Their recommendation may never give an exact prescription for action, but it does give the "gatekeeper," in this case the President, an

[42] Holsti, pp. 77-79.

opportunity to contemplate the array of important alternatives and their consequences. This subjective analysis is not perfect, though very human. Hopefully, it increases the probability of accuracy in a group environment. One may also surmise that it is normal to overlook simple or less intrusive factors in the decision-making process. But, to overlook critical factors would indicate a flaw in the process. Thus, when global nuclear war is at stake and a senior group of advisors is formed, one does not expect them to miss salient factors in their analysis - and if this does occur, it warrants critical review.

Before I survey group dynamic impediments, I would also suggest another aspect to group dynamics. If the ultimate goal of the decision-making process is to render a high-quality decision, then this can only be done if the group uses sound decision-making criteria (see Figure 2.6).[43] The inter-activity of individuals in the group will also accentuate their decision-making skills for the President to observe. He will see the analytic qualities of each member, appraise their judgement and access who has matured within the process.

Decision-Making Criteria

1) Thoroughly canvassed a wide range of alternative courses of action;
2) Carefully weighted the costs, drawbacks, and subtle risks of negative consequences, as well as the positive consequences, that could flow from what initially seemed the most advantages courses of action;
3) Continuously searched for relevant information for evaluating the policy alternatives;
4) Conscientiously took account of the information and the expert judgements to which they were exposed, even when the information or judgements did not support the courses of action they initially preferred;
5) Reexamined the positive and negative consequences of all the main alternatives, including those originally considered unacceptable, before making a final choice; and
6) Made more detailed provisions for executing the chosen course of action, with special attention to contingency plans that might be required if various known risks were to materialize.

Figure 2.6. Decision-making Criteria. Source: Janis, p. 142.

[43] George, *Presidential Decisionmaking in Foreign Policy,* p. 3, states "a high-quality decision is one in which the president correctly weighs the national interest in a particular situation and chooses a policy or an option that is most likely to achieve national interest at acceptable cost and risk." Irving, p. 142, offers these criteria.

3. Impediments to Group Dynamics

Small groups, because there are few contributors, provide fewer diverse options to be mediated.[44] Its size limits the range of values, beliefs, and attitudes, and thus reduces the amount of knowledge and analytical skills available to consider issues.[45] Its size also provides fewer opportunities for the sub-grouping and inter-group conflict associated with decision-making.[46] Debate drawn from this conflict would further scrutinize options. Next, thrusting a small group into a fast-paced, high-stakes environment exerts a cohesive psychological pressure on them, diverting them from other tasks. The residual effect of group cohesiveness causes members to conform for the sake of the group, thus accepting the greater risk inherent in the lack of independent investigation and debate.[47] Another impediment is that senior officials have a tendency to miss critical uncertainties pointed out by lower level experts because of oversimplification of issues in summaries of analyses transmitted upward.[48] This narrows the scope of their investigation, and ultimately limits their ability to formulate viable options and debate. Senior officials also have a tendency to mold their views according to their boss and what they think he wants.[49] This completely circumvents a quality decision-making process, reducing officials to "Yes Men." Another factor which takes hold in group dynamics are power-prestige differences between members that influence relationships, interactions and performance of tasks for analysis and appraisal.[50] This can also influence candid analysis, aligning group members with primary actors, and again diluting the process. Lastly, group pressure on individuals may cause members to hesitate to express doubts and misgivings regarding predominant views out of a fear of recrimination, anxiety about presenting a loyal self-image, or fear of eviction.[51] Again, this acts as a retardant to the decision-making process.

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[44] George, p. 21.

[45] Ibid. p. 21.

[46] Ibid., p. 21.

[47] Holsti, p. 78.

[48] George, p. 21.

[49] Conversation with Professor John Arquilla at the Naval Postgraduate School, Monterey, CA, 6 June 97.

[50] George, p. 21.

[51] Ibid., p. 22.

C. ORGANIZATIONAL THEORY MODEL

1. General

To be responsive to a wide set of issues, the government has evolved into several large sub-organizations, with each holding responsibility for particular tasks that are subsets of larger issues. Due to the nature of modern government and the complexity of issues dealt within foreign policy, these distributed tasks rarely fall under a single organization. Therefore, the endstate of this process reflects the government's behavior as the product of several contributing organizations. As Allison notes, these organizations can only be partially coordinated by government leaders, who are then in turn, only able to substantially disturb, but not control, their behavior.[52] These organizations have evolved into entities unto themselves, further subdivided into more specialized units. These subunits typically develop interests and goals of there own that are often in sharp contract with organizational goals and value priorities established at the executive level. This policy-making process is also jeopardized by the give-and-take of bureaucratic politics or the competition that exists among subunits pushing the various agendas that support their goals and values.[53] Originally many scholars thought that organizations extended the rationality of the decisionmaker. It was later realized that their outputs were derived from numerous other internal organizational factors, which tended to misrepresent the integrity of the original policy objectives as their own. The purpose of this section is to conduct a critical analysis of the behavior of large organizations supporting the policymaking process using an organizational behavior model. I intend to use characteristics from both Alexander L. George and Graham T. Allison's organizational characteristics to conduct this analysis.

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[52] Allison, p. 67.

[53] George, p.111.

2. Organizational Characteristics

"The overriding fact about large organizations is that their size prevents any single authority from making all important decisions or directing all important activities. Factored problems and fractionated power are two edges of the same sword. Factoring permits more specialized attention to particular facets of problems than would be possible if government leaders tried to cope with the problems themselves. But that additional attention must be paid for in the coin of discretion for *what* an organization attends to, and *how* organizational responses are programmed."

Graham T. Allison - *Essence of Decision* (1971)[54]

John Steinbruner argues that organizational behavior is rigid and difficult to control, posing problems "vastly underestimated in the established strategy."[55] Further, he argues that as we employ strategic forces we incur a considerable risk of irreversibility, setting in motion a series of routines leading to at least partial implementation of the nation's established war plan. Another important aspect of large organizations is the manner in which they represent their capabilities to perform a stated task that is needed within the policy. Their ability to implement a directed action essentially represents the ability of the policymaker to conduct action in foreign policy. What level of control can the policymaker exercise over the required actions? How long does it take for a decision to be implemented? The seasoned executive, proceeding through his policy process, will acknowledge and compensate for the internal dynamics of organizations supporting him.

Several noted scholars have written on the internal politics and behavior of policymaking in organizations. The landmark work by Graham Allison, *Essence of Decision*, has been the standard reference among social scientists. Allison's framework is developed primarily from the work of Herbert Simon, James March and their collaborators. This approach emphasizes the factors that limit rationality in decisionmaking by individual actors and organizations. It also accounts for the limitations of man to process information, constrains his ability to obtain information for calculating maximal goals, and creates a tendency to select a course of action that fulfill the most minimum goals instead of pursuing the action with the best consequences. Allison's approach also takes account of organizational structure, such as established procedures and routines that are utilized in pursuit of the policymaker's objectives.[56] Alexander L. George,

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[54] Allison, p. 80.

[55] John Steinbruner, "Beyond Rational Deterrence: The Struggle for New Conceptions," *World Politics* 18 (January 1976), p. 239.

[56] Janis, *Victims of Groupthink*, p. 7, gives a synopsis of Allison's approach.

in *Presidential Decisionmaking in Foreign Policy: The Effective Use of Information and Advice* also uses several similar characteristics in his framework. However, George mixes the dynamics of bureaucratic politics with organizational behavior to assist in understanding how these elements impede policymaking procedural tasks. An initial understanding shared by both authors is that large organizations use standard operating procedures (SOPs) and programs to conduct their activities, allowing them to coordinate complex routines. Each organization establishes a set of rules and procedures to act on a given set of problems or a situation.[57] We see in both writings that the basic premise for each organization is that they act on their own set of values, interests and goals, all of which they seek to protect and advance. The other premise, based on this initial characteristic, is that organizations tend to have a different view of the policy being processed than the executive actor or advisory group, thus causing their support to take on a different focus and understanding.

The policymaking process deals with multi-faceted issues that must be parceled out to different organizations, where they are usually further subdivided within those organizations. To accompany the responsibility of these smaller issues is the requisite power necessary to accomplish the task. The end result is that more specialized attention is given to the particulars of a problem, causing the overall solution to be the sum of each particular solution rather than a holistic product.[58] Finally, we must consider the conditions under or the context within which an organization finds itself in during a crisis. Organizations are not programmed to produce quality output in a time-sensitive and dynamic environment. When a crisis does take place, an organization resorts to its routine products as a solution, determined by pre-established SOPs and programs. This can have potentially dangerous effects for the decisionmaker, giving him a "canned" solution that may only remotely resemble the set of circumstances he is dealing with. This awareness is important for a decisionmaker because he will be required to work under a higher degree of uncertainty with fewer reliable resources. These characteristics of organizations are important to understand, especially if you are a decisionmaker striving for the best possible input to process a quality decision. Prior to addressing impediments of organizational behavior it will assist us in having a reference point to begin from, and one that is familiar to us from the previous chapter, I refer to Figure 2.7.

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[57] Allison, p. 68.

[58] Ibid., p. 80.

Five Critical Procedural Tasks in Effective Decision-Making

1. Ensure that sufficient information about the situation at hand is obtained and that it is analyzed adequately so that it provides policymakers with an incisive and valid diagnosis of the problem.
2. Facilitate consideration of all major values and interests affected by the policy at hand. Thus, the initial objectives established to guide development and appraisal of options should be examined to determine whether they express adequately the values and interests imbedded in the problem and, if necessary, objectives and goals should be reformulated.
3. Assure a search for a relatively wide range of options and a reasonably thorough evaluation of the expected consequences of each. The possible costs and risks of an option as well as its expected or hoped for benefits should be carefully assessed; uncertainties affecting these calculations should be identified, analyzed, and taken into account before determining the preferred course of action.
4. Provide for careful consideration of the problems that may arise in implementing the options under consideration; such evaluations should be taken into account in weighing the attractiveness of the options.
5. Maintain receptivity to indications that current policies are not working out well, and cultivate an ability to learn from experience.

Figure 2.7. Five Critical Procedural Tasks in Effective Decision-making. Source: George, *Presidential Decisionmaking in Foreign Policy: The Effective Use of Information and Advice*, 1980, p. 3.

3. Pathologies of Organizational Behavior

It is my intent to survey both Allison and George's organizational characteristics to devise a model to conduct a critical analysis of organizational behavior.[59] First, the characteristics of an organization, its institutional focus on a set of values, interests and goals, obligate it to champion and protect its initiatives. This creates a motive to control vital information by supplying or withholding it with this objective. This phenomenon is further compounded by the composite input of the numerous organizations also involved in the process. Second, the motivation to advance parochial interests in policy options is furthered by their promotion at the expense of other organizations interests. Third, within the context of politics between organizations and the policy debate process, bureaucratic advocates levy tools of competition on their opponents using oversimplification and rhetorical exaggeration to win the executives favor. They tend to overstate the benefits of their position while exaggerating the risks of their rivals.

Fourth, the bureaucratic actors representing their respective organizations all wield varying levels of influence. Each wields a certain amount of power, control over information, skill in persuasion, etc. Fifth, in light of the competition that exists between organizations, there is an incentive to protect their own interests. Vital interests of their other organizations may be

[59] George, pp. 112-118, Allison, pp. 79-95.

at risk by submitting one's uncut analysis within the process forum. To avoid this uncertainty, these organizations agree upon information submissions and/or an agenda that steers the executive clear of this risk.

Sixth, as a bureaucratic actor decides on priorities for his organization, he must also consider the new task at hand in light of its interests and priorities. He controls the intensity with which his organization participates through his interpretation of the task verses their interests. Seventh, there is very little incentive for an organization to rise above a level of work beyond normal operating procedures. This means the work will be conducted in a simple-minded manner, stopping at the first alternative that satisfies the requirement, usually a biased choice based on the specialized training and experience of the various parts of the organization.

Eighth, organizational subunits tend to rely on SOPs and policy routines that may be inappropriate for dealing with novel policy issues, yet they often form the basis for advice given to the executive. As described earlier, the executive must be cautious with organizational input, especially during a crisis situation when organizations are slow to produce alternatives and analysis outside standard routines. Finally, because bureaucratic politics can be so time consuming, policymakers have a tendency to lose site of the issue at hand, at which their final policy will be directed. This is best described by Stanley Hoffmann:

> There inevitably occurs a subtle (or not so subtle) shift from the specific foreign-policy issues to be resolved, to the positions, claims, and perspectives of the participants in the policy machine. The demands of the issue and the merits of alternative choices are subordinated to the demands of the machine and the need to keep it going. Administrative politics replaces foreign policy.[60]

We can see that several impediments exist which inhibit an organization's ability to provide good data for the policymaking process. Organizational behavior combined with bureaucratic politics can have a significant impact on the environment in which the executive must conduct decision-making.

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[60] Stanley Hoffmann, *Gulliver's Troubles*, (New York: McGraw-Hill, 1968), p. 277.

D. A DECISION MODEL BASED IN ARTIFICIAL INTELLIGENCE[61]

"The lesson of AI is that we can make intellectual tools – cognitive prostheses – which have no independent social role, no human pretensions or weaknesses, but yet have genuine intellectual power. They really do think, in many ways better than we can. Which is, of course, our reason to build them. Like any other tool, they help us do things we could not manage to do without them."

Ken Ford and Pat Hayes, "What's Wrong With HAL?"1997.[62]

1. General

The advance of technology is steering almost every aspect of global society today, and will continue to play a predominant role in our future. We are most aware of the current explosion of information technology, and its overwhelming characteristics. We see this phenomenon dominating the way we conduct business, by the incredible advantage it gives individuals making any type of judgement, decision or collaboration within this increasingly informed, interconnected world. Our paradigm may have to shift, then, to a new way of conducting business to take advantage of this new technology.

The challenge for society will be to embrace the tools of computing which deal with and dominate this new environment. The human threshold for receiving and analyzing information will be pushed beyond its limits, and the speed with which decisions are made will have to improve. The normal user of computing devices will have a tendency to become confused and threatened (see Figure 2.8).[63] As sophistication increases, the use of software agents will play an important part in the evolution of computing.[64] Humans will not only desire to extend their capacity to work with and understand this new advantage, but will also feel a need to maintain a competitive edge. The projection of future software technology or artificial intelligence (AI)

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[61] Much of the information in this section was acquired in my week at the 1997 American Association of Artificial Intelligence (AAAI '97), July 27-31, 1997 in Newport, Rhode Island. I attended numerous lectures and workshops to gather this information.

[62] Ken Ford and Pat Hayes, "What's Wrong With HAL?" paper presented at the 1997 American Association of Artificial Intelligence in Technical Report WS-97-04, July 28, 1997, Newport, Rhode Island, p. 55.

[63] US Air Force Scientific Advisory Board, *New World Vistas: Air and Space Power for the 21st Century*, (Washington D.C.: U.S. Air Force, 1995), p. 38.

[64] As stated in New World Vistas: Air and Space Power for the 21st Century, p. 38, " In computer science research, one expects an "intelligent" software agent to use reasoning and persistence in performing its assigned task.

offers numerous ways to discover intelligence.[65] "Artificial Intelligence is a field that studies intelligent behavior in humans using the tools – theoretical and experimental – of computer science. The field simultaneously addresses one of the most profound scientific problems – the nature of intelligence – and engages in pragmatically useful undertakings: developing intelligent systems."[66] It is the science of making machines do tasks that humans can or try to do – act as agents to their human actor. The use of AI, or self-thinking software, will be the intermediary that allows us to extend human capabilities in the future with the idea that it is able to elevate individual performance. What human thinking characteristics do we want AI to have? These characteristics include the ability to reason, self-learn, have intuition, knowledge and are self-critical. The proposition we work from is - the more complex a process is the closer we are to thinking like humans, and the closer we are to getting an optimal answer. We are saying that complexity increases our probability for correctness. AI gives us both the ability to work within the context of complexity, and at lightning speeds; thus the essence of AI.

As our global society picks up speed, AI may emerge as an alternative for foreign policy decisionmakers in aiding decision-making in this new and dynamic environment. Indeed, the challenge for policymakers will be the adaptation of this new technology to our foreign policy decision-making process. The increased tempo of diplomacy will impose on the state's capacity to be both decisive and creative in this new environment. Global competition will be with whoever has access to this technology and can take advantage of it. How do we maintain our diplomatic edge? How do we incorporate technology into our politically diverse system, a system highly suspect of any mechanical-type solution? Our competition will also be ourselves - to overcome this hesitancy. As we cautiously adapt new technology, several decision-making factors must be addressed. We must include in this the unique capabilities of the AI model itself? We ask, to what extent can it think, reason, learn and process knowledge? And, to what extent do these influence critical decision-making elements within an administration to positively impact an outcome? These are critical questions for the model, the answers to which will guide our political system's adaptation.

[65] "The concepts, techniques, and technology of the Information Technology (IT) area called Artificial Intelligence offer a number of ways to discover what intelligence is - what one must know to be smart at a particular task – and a variety of computational techniques for embedding that intelligence in software." Ibid., p. 57.

- The quantity of information will be too vast and its quality too uneven for most humans to suffer through.
- The locations of desired information are too broad and nonintuitive.
- An increased "flatness" (lack of hierarchy) in the world of sources and sinks for information makes dealing with it less understandable. This gets emphasized in future peer-to-peer systems.
- Data and database heterogeneity demand a variety of translators.
- Stored media will have increasing dimensionality in various formats.
- The notion of delegation, broadly defined, will become more available.
- A broadly accepted commercial infrastructure for in-line information will provide a more consistent interface.
- The need to hide complexity.
- The need for new programming models for a distributed computing environment.
- The need for improved human-computer interaction.

Figure 2.8. Motivations for the Use of Software Agents. Source: United States Air Force, Science Advisory Board, New World Vistas: Air and Space Power for the 21st Century, (Washington D.C.: U.S. Air Force, 1995), p. 39.

2. Artificial Intelligence Factors

To understand AI better it is important to address constraints that arise in the development of software that will function in the place of a human advisor. Several controversial factors form the foundation for this AI model. One of the most significant issues is the element of trust. Will policymakers trust a machine to make decisions in their place? It is incredibly complex and perplexing to attempt to develop a model to assist decisionmakers in foreign policy, and which has such far-reaching and intimate connectivity with the essence of our democratic society. But, it is because of this importance that obligates us to pursue a high-quality solution by the most proficient means possible. Our political system has been characterized as being inefficient because of its many checks and balances, and consensus-type politics. To place faith or trust in a machine to make or share in these decisions or their responsibility is outside the limits of our humanity. For this model, I propose that AI act in the capacity of an assistant to policymakers involved in the decision-making process. This will give

[66] Report of the committee for the American Association for Artificial Intelligence, Barbara Grosz and Randall Davis, ed., "A Report to ARPA on Twenty-First Century Intelligent Systems," *AI Magazine*, Vol. 15, No. 3 (Fall 1994), p. 10.

the final decision to the policymaker. AI will help the decisionmaker by extending his own capabilities to take advantage of this information technology. It will also assist him by conducting more of the mundane activities that would normally distract him from focusing on the critical elements of an issue.

As the software industry prepares designs for AI, it must also program it with certain premises to work from. In order to render a more human-like response it is necessary for AI to search for approximate solutions with no guarantee of optimality.[67] A system that is capable of an 80% solution will more closely replicate human performance, and build in 20% room for human interpretation at the end.[68] This will hopefully prevent AI from taking on "Holy-Grail-type" qualities and present a better-than-average recommendation for further analysis by the human policymakers.

Another important factor is the element of risk in making a decision. Risk is present in proportion to the level of uncertainty that exists when making a decision. "Knowledge reduces uncertainty and helps us constrain the exponential growth leading to the solution of many otherwise unsolvable problems."[69] AI can assist in decreasing the risk of a decision by its capacity to search and gain knowledge. It is important to note that although AI may reduce the uncertainty in a decision, and thus the risk, it may also confirm the existence of risk. This process will then render a higher level of confirmation of that risk.

In the development of software, engineers work with a certain level of subject-matter knowledge to design a program. The process by which he acquires this knowledge, and how he interprets it into his program, will inevitably infuse a certain degree of bias into it. To achieve an acceptable level of bias (in this case, to democratic policymakers), a process should be developed to determine which assumptions should be used to develop the programs. I will suggest that may be done by a bipartisan committee, which includes representation from both scholars and policymakers. The set of assumptions agreed upon would be maintained in a place with a "glass door" for all to see and change. This type of committee would assist, to some degree, the level of biases assumed into the software.

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[67] Raj Reddy, "The Challenge of Artificial Intelligence," *Computer,* October 1996: p. 88.

[68] Ibid., pp. 90-91.

[69] Ibid., p. 94.

Another factor is that of unintended consequences. One may be concerned by the additional capacity to handle more information from highly complex searches and analyses. The current system may become clogged and confusing with this added input. I would counter this assessment, and refrain from superimposing AI on the current system, by transforming to a new more powerful system able to handle these inputs and recommendations. AI adds complexity and thus accuracy, but it must also be kept simple for the user.

Another interesting question arises in AI that influences human interface in the foreign policy realm: What does an individual lose when he is just presented with a recommendation from the AI process? Do humans feel comfortable accepting recommendations from an AI agent when they have not actively participated in the cognitive process or context of the decision? Part of considering options and consequences is to engage in the process. If not, this threatens the creativity and criticality of learning needed to make effective decisions. Also, the process of academic debate and dissent must be included to review alternatives effectively. This may be the place where a line is drawn and AI - the assistant - is defined within this context. The solution may again be for AI, then, to assist the decision-maker. AI can conduct advanced research and analysis that will contribute to the human dimension of the decision-making process.

Another unintended consequence is the technical paradigm that humans form regarding their machines. This tendency develops when humans get too attached or dependent to their equipment to function at their job. The equipment is so advanced; sophisticated and expensive the user sees it as an end-all. This gives the human a closed-perspective, one where he reluctantly considers anything outside the output reality of the machine.

In past crises, the ability to slow down the tempo allowed the adversary's decision-making processes to run its course. Pressuring an adversary to make decisions outside routine procedures can cause him to arrive at a less than optimal or desperate solution to counter our advantage. Although we may want to incapacitate and freeze an opponent by exploiting our swift countermove capabilities (as a result of AI), our ability in many situations, to leave our opponent with an option, can sometimes prevent conflict. AI implies being able to work in a high tempo environment, but what is important is that we understand and consider our opponent's situation while he conducts crisis decision-making, and that we are fully aware of the consequences of our actions. This may allow us to use AI to anticipate and even prepare to out-

maneuver him, or opt to affect supporting elements to his decision process, or to alter his perception.

One of the most significant factors to address with AI is its use of knowledge, because knowledge supports reasoning. This is a controversial subject, and a popular topic among many large organizations today. Organizations want to know how to preserve their knowledge and how to tap it for future use. The key elements of knowledge is not just the decision, but to capture the process and the conditions behind it. This then must be contrasted to new factors and external conditions to be used in a current setting. How do we preserve our knowledge? How do we make it accessible for future decisions, and who has access to it? AI can play a key part in this solution. Knowledge can compensate for a lack of search.[70] Organizations can program this knowledge into an agent or, by its conduct of high-speed advance searches to acquire knowledge. The tendency for humans, when dealing with an unknown situation, is first to attempt to associate it with a prior experience. When this is limited, they proceed to tap their vast mental resources for additional knowledge to analyze it to a culminating point, then to make a decision. AI will be able to do the same thing, only with little knowledge to fall back on in comparison to what is available. This would then cause the agent to begin to search for related information and knowledge to further analyze the issue. As the agent conducts searches from large databases, a relationship emerges between search and evaluation. The searches add value to the information being looked for though the redundancy of observing the same data at high speeds. This serves as a quality control mechanism. Essentially, the trade-off would be to sacrifice speed for a slower, quality-type checking procedure. Currently, this technique is a controversial, but is an accepted concept in the AI field. A point made at the 1997 American Association of Artificial Intelligence (AAAI '97) is that quality must first go into the agent, before quantity is applied to it, and "organizations learned – technology will help them remember."[71] The factors that I have discussed are essential in developing the AI model's foundation.

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[70] Ibid., p. 94.

[71] Tom Gruber, from remarked at the AAAI '97 Conference.

3. Artificial Intelligence Capabilities

"AI will be key to making the systems intelligent, adaptable, far more accessible to the general public, and, dramatically more effective."[72]

The current body of thought on AI agents is vast, and growing. The U.S. Air Force Scientific Advisory Board put together a report that was a forecast of a potential future for the Air Force.[73] I selected this study because it was a collective effort conducted by numerous experts in the field of computer science and artificial intelligence, offering both diversity and similar views for the future. I also selected the domain of the Air Force because it offers an environment that requires many corresponding needs and capabilities one expects an effective decision-making system would require. This document will be my initial reference point for developing a system of artificial intelligent agents to use in my analysis. It is my intent to use these prescribed agents because they represent, in broad terms, the current range of thought in the field of AI. One comment that puts the use of agents in perspective is:

> Care must be given in not misleading users as to the reasoning power and adaptability software programs like agents actually have. It is doubtful, however, enough precision will emerge in describing such capabilities, so imputing functionality not actually present will be an ongoing problem. Because of this difficulty, the term agent has mixed acceptance by many experts. That reticence will not likely prevent it from being more popularized.[74]

A common core of capabilities is needed to construct intelligent systems. These include the ability to reason about a task being performed and to posses basic common sense facts that will affect it: to be able to reason about the collaborative process and the knowledge and capabilities of other systems and people participating in an interaction; the ability to communicate to users in human terms, producing and understanding combinations of spoken and written language, drawings, images, and gestures; to be able to perceive the world in a useful reality; to coordinate perception, planning and action; and to learn from previous experience and be able to adapt behavior accordingly.[75] The components of this AI system will evolve around the functions of four types of agents. The following are a list of the agents and their functions:

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[72] Grosz and Davis, 1994, p. 11.

[73] United States Air Force, Science Advisory Board, *New World Vistas: Air and Space Power for the 21st Century*, (Washington, D.C.: U.S. Air Force, 1995).

[74] Ibid., p. 38,

[75] Ibid., p. 60 and Grosz and Davis, 1994, p. 11.

- **Advisory agent -** Those agents able to monitor a situation and give feedback with or without recommendations. Generally, application-specific. Monitoring, at some level of sophistication or abstraction, should be an attribute of all agents. An example would be having an agent dedicated to analyzing a specific area of interest.

- **Personal assistants -** Most likely to appear as adjuncts to human-computer interaction (HCI). Will offer assistance in specifiable tasks. This agent can assist by having the ability to reason and act according to its user's guidelines.

- **Traveling (Internet) agents –** Roving, mission-specific, with broad awareness and interface potential. [Other then some disk access, most all web retrievals now run entirely on the user machine. Where information-gathering processes run is ultimately a matter of money and risk.] An agent that has the province of reasoning and learning; being able to assess the situation and take an alternative action, and on the learning-side remembering to avoid it next time.

- **Multiple Collaborating Agents –** Multiple agents with some common goals, of varying sophistication; may be physically or logically separated. An example of this would be for several agents working in different areas of expertise can interact and exchange information to benefit a higher purpose.[76]

The untethered realizations of software agents in the future give us a direction of a completely delegatable agent. The following properties will emerge:

- Entire computers will become delegatable agents with natural language capabilities.
- Trusted interactions will occur between users and hosts via their agents.
- Collaboration will occur among task or knowledge specific autonomous agents to achieve an integrated goal.[77]

To understand better the use of agents in the future, I will further this discussion by describing future AI applications which will be a part of or can be accessed by these agents. The first are simulation systems and intelligent simulation capabilities. This will allow for the generation of realistic simulated worlds. Simulation capabilities would model complex situations, involving both complicated devices and significant numbers of intelligent simulated people.[78] This would allow the policymaker to run his decision through a simulation of a situation that replicates the current conditions. And, then experiment with those conditions to

[76] United States Air Force, Science Advisory Board, *New World Vistas*, p. 39-40.

[77] Ibid., pp. 43-44.

[78] Grosz and Davis, 1994, p. 11.

gain further knowledge for a decision or to direct an action. In a crisis, this can give him enormous insight and knowledge, thus cutting-down on the uncertainty a crisis decision tends to be embroiled in. The policymaker, for example, could receive feedback as to the implications of his decision on the domestic populace.

As part of a simulation and the replication of conditions, there will be the capability to replicate actors as well.[79] This simulation characterizes individuals down to the minutest detail, allowing for the interaction and reaction of different decisions. One would hope to gain knowledge as to how the other may react, then predict a response. This capability has endless uses to predict responses, for example, from bureaucratic actors required to give him input – "How will they react to a set of requirements?" What is most valuable about simulations is the ability to predict impact and reaction to different decisions.

An application that constitutes an important class of intelligent agents is the information-resource specialist systems. This capability will support the use of the vast resources that will be available on the several information infrastructures. This agent or system will work with the user to determine his needs, navigate the information spectrum to locate appropriate data resources or people to extract relevant information. These agents will adapt to the necessary changes in the users' needs and abilities as well as to the changes in available or appropriate information resources.[80] This agent or capability will give information searches the power through depth and specificity to provide current support to the thought experiment of the user. This agent gathers the necessary information and continues to cycle updates for both the user and the needs of other agent applications. This agent is the input to the system.

An intelligent associate system is an application that is designed to act as a team member that could help design and to operate complex systems. The intelligent associate can assist with the design of a complex device or a large software system by helping to preserve knowledge of tasks, record decision reasoning, and retrieve information relevant to new problems. It can help at the operational level by improving diagnosis, failure detection and prevention, and system performance. These associate agents do not have to be experts themselves, but can significantly enhance user capability by collaborating with human experts, assisting them by capturing and

[79] United States Air Force, Science Advisory Board, *New World Vistas*, p. 57.

[80] Grosz and Davis, 1994, p. 11.

delivering organizational memory.[81] "The clearest uses of Intelligent Associates will be to assist individual users and teams to gather, cull, organize, and interpret data relevant to a situation."[82] The associate agent will remember and recall the rationale of previous decisions, and, in times of crisis, explain the methodology and reasoning behind previous decisions used to handle that or similar situations. These associates will incorporate intelligent simulation and information resources systems as components to completely handle and coordinate all activities.[83] In addition to these capabilities the associate agent will use methods for reasoning by analogy. This characteristic will allow for quick searches for knowledge that are similar to a given situation.[84] An example of this would be to find similar historic situations that the US encountered with the Soviets using our policy of détente under Nixon and present them as examples to both inform and educate. Also the associate agents will be able to handle the unintended consequences derived from an ever-more-complex set of systems and information.[85] For example they will add significant value to the operational control of the many "moving parts" as a situation begins to develop in normal conditions and in time of crisis. The associate agent will be able to monitor information as it becomes available from sensors or any other source, update the system and the process constantly, then provide guidance and advice based on previous experience.

An example of this in policymaking would be for the associate agent to enhance collaboration by keeping communication flowing among the numerous members of the policymaking staff, advisors, and bureaucratic actors. It will also assist by adapting the existing decision-making architecture during different phases of the process to changing conditions in the situation, and capture sub-decision rationales, making this information readily available during the entire process and accessible for review at anytime and in the future.

Associate agents with the capability to learn can tailor their information retrieval process to the user's needs without having to be directed.[86] This will allow the user to give initial

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[81] Ibid., and United States Air Force, Science Advisory Board, *New World Vistas*, p. 58.

[82] United States Air Force, Science Advisory Board, *New World Vistas*, p. 59.

[83] Ibid., p. 59.

[84] Ibid., p. 60.

[85] Ibid., p. 60.

[86] Ibid., p. 60.

instructions and guidelines and the associate agent will conduct the search with the response in appropriate terms or option and their consequences. Learning skills will allow the associate agent to deal with new types of problems generated from different sets of conditions. An example of this is an agent is directed to find a certain piece of information in a certain area. As it searches it realizes that this information cannot be found in this particular area, but in another. Instead of returning to the user with a negative reply or request for more precise instructions, it automatically proceeds to the new area for the data. This capability significantly decreases the congestion that can easily overcome any system and the human decisionmaker.

To cope with realistic situations, characterized by incomplete, uncertain, and rapidly changing information, intelligent systems need to know how to plan in order to determine appropriate actions for a perceived situation. They then must execute these tasks and monitor the results. This set of activities requires advanced capabilities to represent reason about time, action, perception and the mental states of other agents. These capabilities will be seen in the future, and agents will be able to perform complex sequences consisting of thousands of actions to commence developing plans for effective use.[87]

In this section, I developed an AI model based on a foundation of several controversial factors. These address the numerous salient arguments that plague this new field of study, and highlight the vast differences of beliefs amongst its scholars. It is a necessity to address these factors so the reader may better understand that this is a young field of study, one that is still searching for definition. On this foundation, I introduced intelligent agents and their capabilities. These self-thinking agents are systems networked to others, with capabilities that extend the abilities of humans, and allow them to take full advantage of the growing totality of information-based technology, both now and in the future. These capabilities represent the current mainstream of thought about the projected future of artificial intelligence.

[87] Ibid., pp. 61-62.

III. THE CUBAN MISSILE CRISIS

A. THE COGNITIVE DECISION-MAKING OF PRESIDENT KENNEDY

1. General

The Cuban Missile Crisis put incredible stress on top decisionmakers. This stress was primarily caused by Soviet Premier Nikita S. Khrushchev's decision to play a game of chicken or, in international political terms, "brinkmanship" – with the U.S. by deploying nuclear missiles in Cuba.[1] This provocation appears to have been the result of a miscalculation as to how the U.S. would interpret this threat and the fact that this deployment could be conducted secretly.[2] The most salient reasons behind his decision are 1) to compensate for Soviet nuclear inferiority, 2) to demonstrate Soviet resolve in support of Cuba and China, and 3) to counter U.S. deployment of nuclear missiles on the Soviet periphery.[3] During this time period there were several other points of contention in the U.S.-Soviet relationship. The ideologies of the two systems caused tensions in many parts of the world where allies or satellites became the battlefields during the Cold War. One particular tension between the Soviet Union and the U.S. in Berlin was left over from the 1958-1962 confrontation. Another situation that added to the tension was the U.S. Jupiter IRBMs deployed in Turkey and pointed at the Soviet Union. Further, the U.S. was engaged in all manner of intrigue in its various attempts to remove Castro from power in Cuba.[4] It was during this campaign against Castro that Kennedy learned the shortcomings of his advisors and the decision support system around him.[5] Learning these

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[1] Richard Ned Lebow, *Between Peace and War*, (Baltimore, Maryland: The Johns Hopkins University Press, 1981), p. 57. Brinkmanship crisis can be said to develop when a state knowingly challenges an important commitment of another state in the hope of compelling its adversary, or challenging their resolve to back away from his commitment.

[2] Stephen J. Cimbala, "Command, Control and Cuban Missiles: A Crisis Revisited," *The Journal of Slavic Studies*, Vol. 10, No. 1 (March 1997), p. 16.

[3] Lebow, p. 59, and missiles on the Soviet periphery from Bruce J. Allyn, James G. Blight and David A. Welch, "Essence of Revision: Moscow, Havana, and the Cuban Missile Crisis," *International Security*, Vol. 14, No. 3 (Winter 1989/90), p. 138.

[4] Allyn, Blight and Welch, p. 145.

[5] Alexander L. George, *Presidential Decisionmaking in Foreign Policy*, (Boulder, Colorado: Westview Press, 1980), p. 129.

lessons, President Kennedy formulated several beliefs and perceptions for future reference. This section focuses on the individual decision-making dynamics of President Kennedy and how he directed his foreign policy apparatus at three critical junctures. It is my intent to focus the lens of this imperfect process by examining several aspects of his cognitive processes.

2. Critical Analysis

Kennedy's management of the crisis:

"...the distillation of a collective intellectual effort of a high order, the like of which must be rare in history."

Hans J. Morgenthau, *Truth and Power, Essays of a Decade, 1960-1970,* (New York: Praeger, 1970), p. 158.

One of the first critical decisions President Kennedy made in the early part of the crisis was to have only one acceptable outcome - the withdrawal of all Soviet nuclear capable systems from Cuba. All subsequent courses of action were derived from this basic policy objective.[6] In light of a potential U.S. invasion of Cuba, Khrushchev felt pressured to act, despite his position of inferiority.[7] He determined that sending conventional troops to the island as a trip wire would not suffice, nor could the Soviets credibly deter the U.S. by threats of retaliation elsewhere.[8] This situation created his premise for deploying missiles to Cuba, along with beliefs of questionable U.S. resolve to challenge the move.[9] Khrushchev would then be able to use this leverage against the U.S. in Berlin.[10] Shortly after the decision was made by the Soviets to deploy nuclear missiles to Cuba, President Kennedy issued a warning to the Soviets that he

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[6] Cimbala, p. 38.

[7] Bruce J. Allyn, James G. Blight and David A. Welch, *Proceedings of the Moscow Conference on the Cuban Missile Crisis, January 27-28, 1989*, CSIA Working Paper, Center for Science and International Affairs, Harvard University, forthcoming, stated by former Secretary of Defense Robert McNamara, "If I was a Cuban and read the evidence of covert American action against their government, I would be quite ready to believe that the US intended to mount an invasion," also Allyn, Blight and Welch, p. 145.

[8] Allyn, Blight and Welch, p. 140.

[9] John Spanier, *American Foreign Policy since World War II*, 8th ed. (New York: Holt, Rinehart and Winston, 1980), p. 108.

[10] Ibid., p. 108.

would not tolerate offensive weapons in Cuba (4 September 1962).[11] President Kennedy issued a second warning on 13 September 1962 as a result of further photographic proof of SAM missile sites and increasing Soviet arms and military equipment.[12] On 16 September 1962, President Kennedy was given hard "photographic evidence" that showed Soviet medium-range ballistic missiles (MRBMs) in Cuba.[13] Privately Kennedy was furious; he felt he had been deceived by Khrushchev and alarmed by Soviet intentions.[14] So here in lies his decision to select one of the most significant starting points for foreign policymaking, a point of reference – the missiles must go.

First, we must ask why he made this decision. This analysis is intended to assess his cognitive process and analyze why he may have decided this way. We must keep in mind that the ultimate goal is to render a "high-quality" decision. One might ask, why did he render this decision as the bottomline for policy initiatives? Here in lies my analysis of the "How and Why" of President Kennedy's cognitive style which shaped his reality. I propose that his beliefs and perceptions and the way he approached decisionmaking influenced him to make this decision. This will not be an in-depth analysis into the cognitive map of the President, but an effort to explore cognitive-influencing factors that may have altered the way he perceived the world at this point in time.

One cognitive factor that probably had significant influence on this decision, and possibly personalized it, was that he felt that Khrushchev had lied to him and violated the trust between them as world leaders.[15] Kennedy felt "suckered" after Khrushchev's numerous denials and

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[11] Marc Trachtenberg, "The Influence of Nuclear Weapons in the Cuban Missile," *International Security*, Vol. 10, No. 1 (Summer 1985), p. 151, also in Allyn, Blight and Welch, p. 152, they state that the first SS-4 MRBMs arrived on Sept 15, eleven days after President Kennedy's first major warning against the deployment of "offensive weapons" to Cuba, two days after his second warning, and just four days after a denial by TASS that an such deployment was in the offing.

[12] *The Cuban Missile Crisis – A Chronology of Events: January 1, 1959 – Late 1961,* (The National Security Archive, The Gelman Library, George Washington University, 19 May 1997), Internet, http://www.seas.gwu.edu/nsarchive/nsa/cuba_mis_cri/cmcchron1.htrl

[13] Arthur M. Schlesinger, Jr., *A Thousand Days: John F. Kennedy in the White House*, (Boston: Houghton Mifflin Company, 1965), p. 801.

[14] Arthur M. Schlesinger, Jr., *Robert Kennedy and his Times*, (New York: Ballantine Books, 1978), p. 545, and Christopher Andrew, *For the President's Eyes Only*, (New York: HarperCollins Publishers, Inc., 1995), p. 288.

[15] Lebow, p. 11, states the President's "gut" reaction was to treat the missiles as a personal challenge by Khrushchev involving personal costs to him.

protestations that the missiles were not deployed.[16] Kennedy had concerns for over a month those missiles were being installed in Cuba, but had lacked hard evidence. During this time, diplomatic channels and personal contacts had confirmed Soviet denials of missiles in Cuba. On October 16, when the truth came to light, Kennedy exclaimed: "He can't do that to me!"[17]

Several cognitive influences are implicated by his initial decision and his exchange with Khrushchev. The first is the impact of the crisis environment as it pertains to value-complexity. President Kennedy may have felt he had to accept the value conflict as unavoidable, facing up to the necessity that he must make a difficult trade-off choice. The danger of this is his perception could have been wrong, and his actions counterproductive. When President Kennedy went forward and stated that the missiles must be removed from Cuba, he may have not fully analyzed the situation, relying on his "gut" instinct instead. The decision essentially created a bounded universe of possible outcomes, putting increased pressure on Khrushchev, who had to search for alternatives from a position of nuclear inferiority.[18] The results of this could have been a forced decision on the part of the Soviets. Khrushchev may have felt backed into a corner because any decision he made could cause a loss in credibility and prestige.

A second potential influence was Kennedy's use of cognitive aids to assist him in this ambiguous environment. The two aids that apply are 1) reliance upon ideology and general principles as guides to action, and 2) application of beliefs about correct strategy and tactics. The concern in using these aids is that their premature use can restrict additional information to the decisionmaker, without the benefit of more in-depth analysis from his decision-making apparatus. Kennedy may have used these aids to formulate his decision in addition to his emotions, but may have done so prematurely, evidenced by the fact that other options could have been explored that would have allowed an exit strategy for the Soviets. Use of heuristics is inevitable and is a natural process to simplify the complex by ignoring conventional statistical criteria.

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[16] Schlesinger (1965), p. 802.

[17] Richard Neustadt, "Afterword:1964," in *Presidential Power* (New York: Mentor, 1964), p. 187, Lebow, pp. 11, 300, "Stevenson was shocked by the president's apparent determination to resort so readily to violence and wrote him a note urging caution." John D. Steinbruner, *The Cybernetic Theory of Decision*, Princeton, (N.J.: Princeton University Press, 1974), p. 145, states that the threat of the missiles in Cuba were a far more serious threat to Kennedy's political career than to the strategic objective of the United States.

[18] Cimbala, pp. 38-39.

A third influence that may have affected his decision is the use of the "representiveness" heuristic. This approach to judging probabilities can lead to serious errors in prediction because it also ignores their significance. It is possible this may have influenced this initial decision based on his stereotype of Khrushchev and past Soviet tactics in Berlin. Assessing actual probabilities, rather than judging them, would have allowed him to make a more informed decision using more robust sources on the significance of the missile deployment, such as a Soviet motive for the deployment.

A fourth influence is the "availability" heuristic. This leads someone to assess the frequency of an event off of personnel experience or recent memory, thus predicting an outcome. In this case he could have easily predicted using his experiences from recent events in Berlin and the Bay of Pigs. Again, this lends itself to a quick decision against the Soviets without completely reviewing all the circumstances, such as the U.S. acquiescing to Soviet troop deployments, thus sending mixed signals to the Soviets prior to their missile deployment.[19]

A fifth influence has to do with dissonance-reduction bias or "consistency seeking." This can be applied when the assimilation of new information into preexisting beliefs involves violations of generally accepted rules for treating evidence. We can assess Kennedy's decision from his use of personal trust beliefs that were violated by Khrushchev, versus seeking additional information and deliberating with advisors to determine a starting point for policymaking.

A sixth influence is how Kennedy initially perceived his adversary Khrushchev. There is a tendency for decisionmakers to perceive him as a rational actor, while failing to understand the dynamics of the situation as a result of a much larger organizational process. We see this in Kennedy's comment as a personalized gesture toward Khrushchev, but actual analysis shows the Soviet decision was made at a much earlier date as part of their bureaucratic process.

Lastly, the effects of stress can both enhance and impede on crisis situations. The sources of stress are apparent, 1) the high-stakes of a nuclear confrontation, 2) the surprise of the missile deployment, and 3) having to make a rapid initial decision in a fluid environment and in the aftermath of Berlin. These conditions may have caused Kennedy to be more vigilant in his approach to the situation. Conversely, it could have impaired his attention and perception of the magnitude of the event, increased his rigidity, narrowed his perspective and shifted the burden to his opponent. In this case, we may interpret Kennedy's perception as initially impaired or

[19] Ibid., pp. 38-39.

narrow, showing signs of rigidity in his initial approach and shifting the nuclear decision to Khrushchev. In summary, this analysis was designed to focus our lens on possible cognitive influences on Kennedy's initial decision to expel the missiles out of Cuba. Though this process seems somewhat speculative, it helps us to create a set of assumptions about President Kennedy's cognitive reality.

A second cognitive factor that probably had significant influence on Kennedy's decisions was his sense of the risks of inadvertency as a result of organizational constraints in the crisis. This was a crisis situation with high stakes and numerous complex forces (bureaucracies) involved in dealing with each potential move and confrontation at many levels. Kennedy understood the magnitude of his situation, and the stress imposed on his administration. He knew he had to work with these elements to resolve the crisis. He also knew of the vastness of these bureaucracies involved and the difficulties involved in their control. On the one hand, he did not want to become captive to them, and on the other, he new he had to work with them.[20] He also had a certain element of distrust in the advisors who led him down the wrong path in the Bay of Pigs fiasco.[21]

Kennedy made several decisions to safeguard against this bureaucratic and group dynamic dysfunction from happening again. First, he instituted multiple channels to receive information, not just one, as was done with the CIA during the Bay of Pigs.[22] This allowed him to assess what was happening more accurately than just listening to filtered CIA assessments. It also allowed him to gain a better picture in assessing any deliberate or inadvertent signals from his adversary. Another decision was to set up an executive committee (ExCom) of advisors with highly specific rules to examine evidence and devise alternatives. He also integrated procedures to counter any tendencies toward 'groupthink,' allowing him to receive the best possible recommendations. He had learned hard lessons from the Bay of Pigs fiasco and was not going to let the same mistakes happen again.[23] Kennedy's decision to pass on a surgical air strike in favor

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[20] Lebow, p. 330, states both leaders feared of losing control over events.

[21] Graham T. Allison, *Essence of Decision*, (Boston: HarperCollins Publishers, 1971), p. 127-131 demonstrates distrust in the bureaucracy by the President and political leaders wanting to direct the Navy ships in the blockade rather than allowing their control through the normal military chain of command.

[22] George, p. 129.

[23] Irving L. Janis, *Crucial Decisions*, (New York: The Free Press, 1989), pp. 277-278.

of a blockade emplaced 300 miles off the coast of Cuba was done initially to be less confrontational, and also to allow decisionmakers and their requisite systems to conduct informed decision analysis. This can be interpreted as Kennedy trying to slow down the tempo of the crisis and make prudent judgements versus "knee-jerk" decisions.[24] Another decision that showed his suspicion of the system and its member's consensus was his secret "back-channel" meeting and deal with Soviet Ambassador Anatoly Dobrynin. Kennedy was concerned that he might not be able to deter the Military or ExCom's pressure to attack the bases, and he was unwilling to go to war over Cuba and obsolete U.S. missiles in Turkey. He felt he needed to establish this channel and dialogue as a safeguard in case messages or signals were misconstrued.[25] One last decision Kennedy made was to override ExCom's plans to attack the SAM base that shot down the U2 plane.[26] He again knew that this decision could lead to escalation and he had a "gut instinct" that the U2 incident was not a step in an escalation of hostilities in light of the message he received from Khrushchev.[27] Also during the U2 shoot down, so as to guard against an accident, Kennedy ordered all the nuclear missiles disarmed, only to be rearmed on his specific order.[28] Collectively, these decisions demonstrated a decisional consistency that correlated to Kennedy's concerns about the risk of inadvertent escalation during the crisis. A further look at the cognitive influences involved in these decisions will bring us closer to understanding his reality behind them.

Kennedy had a great suspicion of the forces around him, generated mostly as a result of the Bay of Pigs fiasco. He understood that, no matter what happened, he held ultimate responsibility for the decisions and their outcomes. He learned important lessons from the Bay of Pigs, and instituted them as soon as possible. His personality and character allowed him to realize that he alone would be required to make individual decisions, many times the final one, as

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[24] James D. Barber, *The Presidential Character*, 2nd ed., (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1977), p. 336, and Allison, p. 336, Neustadt and May, p. 13.

[25] James G. Blight and David A. Welch, "An Introduction to the ExComm Transcripts," *International Security*, Vol. 12, No. 3 (Winter 1987/88), pp. 11-12, Allison, p. 227.

[26] Barber, p. 140, 225.

[27] Robert Jervis, *Perceptions and Misperceptions in International Politics* (Princeton, New Jersey: Princeton University Press, 1976), p. 56, comments on the decisionmaker changing his goals and values at a critical point, Neustadt and May, p. 13.

[28] Ibid.

part of the policymaking apparatus in the administration. So, Kennedy was able to direct his advisors effectively without fear of making unilateral decisions and to insure that he was not going to send the US, or the world, into nuclear war as a result of poor advice.

Several cognitive influences surround Kennedy's decisions, and illustrate his concern for inadvertency in the crisis. The first are the activities that man as a "problem-solver" try to understand as he seeks to apply some control over the environment and the outcomes of social situations in attribution theory. Kennedy attempted to discern the attributes of his adversary and the supporting bureaucracies, including their social phenomenon. When the incident began, and Kennedy was upset over the deployed missiles, he took the move personally. Adlai Stevenson reminded him that the Soviet decision to deploy missiles was made long before he had begun to warn the Soviets to stay out of the Western Hemisphere. This helped Kennedy to realize that Khrushchev was too, dealing with numerous organizations. Kennedy also attempted to infer the causes of this particular employment during the first ExCom meeting by asking " Why is he doing this to me?"[29] One last activity was Kennedy's attempt to predict historical trends and the behavior of Khrushchev and the Soviets. In the spirit of this, Kennedy had just recently completed Barbara Tuchman's *The Guns of August*, and was not about to let miscalculation misunderstandings, and momentum tumble the US into war as it did those countries in 1914.[30] During the crisis, Kennedy also sought the assistance of Sovietologists so as to appreciate that events on the Soviet side could be products of organizational routine or momentum rather than deliberate purpose. This was especially the case when he tried to figure out what action to take after the two cables arrived from Moscow.[31] These activities reflect Kennedy as a "problem-solver" and speak of the characteristics of attribution theory.

A second cognitive influence is how Kennedy avoided the pitfall of having to bolster a particular option. By imposing a timeline on ExCom he allowed them sufficient time to examine and debate alternatives but avoided the trap of organizational paralysis due to over-analysis. During these deliberations each member changed their minds several times, an indicator as to the effectiveness of the process. In the end there was an obvious vote and consensus that essentially

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[29] Neustadt and May, p. 11.

[30] Allison, p. 218.

[31] Neustadt and May, p. 13.

had the final support of the entire group. This was then recommended to Kennedy for his final decision. Kennedy was interested in getting the absolute best analysis and results as possible from his group of advisors. Another influence may have been Kennedy's use of cognitive aids to assist him in making these decisions. Three aids that apply are 1) use of historical analogies, 2) reliance upon ideology and general principles as guides to action, and 3) application of beliefs about correct strategy and tactics. Kennedy showed an interest in the histories of his adversaries and the impact of organizational theory on the Soviets. This helped shape the ExCom participants' perspectives at the meetings, as well as his own.[32] *The Guns of August* made an impression on Kennedy in yet another way, specifically from which he derived some of the most important principles on which he relied to manage the crisis.[33] His reliance on ideology and general principles was made apparent by how he perceived Khrushchev. Kennedy believed Khrushchev to be "a rational, intelligent man who, if given sufficient time and shown our determination, would alter his position."[34] Another important example of this is Kennedy's statement to his brother, "If anybody is around to write after this, they are going to understand that we made every effort to find peace and every effort to give our adversary room to move."[35] His application of beliefs about correct strategy and tactics can be seen in his understanding that Khrushchev was in the same predicament as he was. Kennedy believed that time and space was initially needed to give both countries' decisionmakers room to make prudent analyses. Kennedy also knew he had to be tough in light of his upcoming election and in reference to his past history of negotiations with the Soviet leader.

Another influence may have been the cognitive "representiveness" heuristic. This leads one to rely on salient information to predict an outcome. This can be observed from President Kennedy's past suspicions of his advisors and their bureaucracies springing from the Bay of Pigs. He felt he needed some element of control or safety mechanism to prevent an escalation spiral of events beyond his control. Further influence may have been the cognitive "availability" heuristic. This leads someone to assess the frequency of an event based on personal experience.

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[32] Ibid., pp. 11-12.

[33] George, p. 246.

[34] Arthur M. Schlesinger, *Robert Kennedy and His Times*, (Boston: Houghton Mifflin, 1978), pp. 528-529.

[35] Robert F. Kennedy, *Thirteen Days*, (New York: W.W. Norton and Company, 1969), p. 109.

Again, this can be seen by Kennedy's most recent experience with decision-making during the Bay of Pigs and the suspicions he developed from the experience. As the missile crisis unfolded, several organizational theory-type events occurred to reinforce his most recent memories. This is demonstrated by our own U2 flying over the Soviet Union during the crisis and the CIA's slow intelligence assessments. Also, we see this heuristic used with his recent reference to the history he read, *The Guns of August.*

If we take a look at the theory of dissonance-reduction bias or "consistency seeking," we can see several areas in which President Kennedy may have made incoming information consistent with his beliefs. One may observe that his beliefs formed during the Bay of Pigs and the Berlin Crisis were the reasons for his use of "safety valves." One can also challenge that it was inappropriate for President Kennedy to conduct secret meetings and arrangements, keeping vital information from the policymakers working within our democratic system. We may think it was very dangerous to make deals without the full knowledge of the participants, and take advantage of their expert analysis. But, due to past experiences that probably shaped Kennedy's beliefs and perceptions, he went ahead and made these arrangements. Kennedy was able to keep in mind the two fundamental beliefs that drove his ultimate decisions. He was not going to go to nuclear war over Cuba, and he would trade obsolete missiles in Turkey if he had to. He did this, despite the effects it could have on his reelection campaign at home and American prestige abroad. However, he felt this was both the correct, as well as most humanitarian path he could follow. This characteristic, or his beliefs and perceptions, helped him drive the ExCom meetings. He wanted to see if he could get ExCom to arrive at his position or at least gruel over it until all resources were examined. This was seen by how several members changed their minds during the course of deliberations. Kennedy used ExCom to help himself achieve a fair assessment and look at all the issues.

Another impediment in decision-making that tends to retard good analysis is the policymaker's perception that their situation has a parallel to a similar event in history. The tendency is not to pursue further analysis, getting locked onto a course of action predetermined by historical precedent. This is understood from my previous analysis in this section regarding Kennedy's recent experience in the Berlin Crisis and the Bay of Pigs. He had also recently read *The Guns of August* and understood the dangers of the misunderstandings in WWI. The impact of this recent history on President Kennedy's decisions is demonstrated by his interpretation of

his relationship with Khrushchev and the perceptions he formed. In their recent meeting in Vienna on May 1961, Robert Kennedy said, " Vienna was very revealing: This was the first time the President had ever really come across as someone with whom he couldn't exchange ideas in a meaningful way and feel there was some point to it."[36] As Robert Kennedy concluded, "it was a shock to him."[37] Kennedy felt Khrushchev was a hard and stubborn man. This factor combined with the Prime Minister's perceptions that he was soft, helped to formulate Kennedy's beliefs about his adversary. Kennedy also knew that Khrushchev was also dealing with several bureaucracies that would try to run their own agendas. This gave Kennedy all the more reason to increase both sides' time for good decision-making.

Finally, the effects resulting from conditions of stress both enhanced and impeded his efforts to mitigate risks of inadvertent escalation during the crisis. Kennedy realized the high stakes involved, and the effect of the initial surprise deployment of the missiles. He also understood the gravity of a crisis environment as experienced in his past, and was not inclined to do anything rash. He made great efforts to try to acknowledge and understand what Khrushchev was going through, and to get ExCom to think the same way.[38] This was a deliberate effort to get away from the rational-actor approach to his adversary.[39] He also understood the physical and emotional strain, and reflected this in his effort to slow down the tempo. Because of the nature of the stresses on individuals and large organizations, and their reaction in a crisis situation, Kennedy wanted to give all levels time for quality analysis and decision-making. However, he understood the reflex of people and organizations in a crisis, and he was not going to be led astray either. His cognitive beliefs and perceptions influenced his sense of inadvertent escalatory risk during the crisis. In summary, this analysis assists us in viewing possible cognitive influences on President Kennedy's decisions.

During the crisis, one of the most pivotal decisions President Kennedy made, which contributed to the end of the crisis, was his decision to pull nuclear missiles out of Turkey. The proposal came from the Soviets, who offered to remove Cuban missiles for a reciprocal move

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[36] Edwin O. Guthman and Jeffery Shulman, eds., *Robert Kennedy: In His Own Words: The Unpublished Recollections of the Kennedy Years*, (Toronto, 1988), p. 28.

[37] Ibid., p. 29.

[38] Neustadt and May, pp. 11-13.

[39] Ibid., pp. 11-13.

from a symmetrical-type threat. Kennedy's dilemma was that he could not pull them out in the face of an adversarial standoff, because it would jeopardize the global prestige of the United States, especially in the eyes of his NATO partners.[40] What really angered Kennedy was the fact that these missiles could even be used as a bargaining chip, when he ordered their removal over a year ago.[41] Kennedy was not concerned with giving up the missiles. He was concerned about giving them up under these circumstances; under duress, and in a global public forum. The missiles were obsolete and were overdue to come out, especially because the new Polaris submarines would be able to cover the same areas from the Mediterranean.[42] In any event, Kennedy was willing to give up the missiles if necessary, to avoid a conflict. Plus, he was not confident that the Soviets were going to budge from their position,[43] even after Robert Kennedy secretly met with Soviet Ambassador Anatoly Dobrynin and offered the "Trollope Ploy:" an ultimatum to remove the Cuban missile bases or have them removed.[44] Robert Kennedy stated to Dobrynin that the U.S. would eventually remove the Jupiter missiles in the near future according to schedule, but could not do so at that time and under those conditions.[45] To back up his commitment to give up the missiles if he had to, even if it meant political suicide, Kennedy devised a secret safety net. He informed Andrew Cordier, then at Columbia University, to give a statement to U Thant, the Secretary General of the United Nations, proposing the missile removal from both Turkey and Cuba. This statement would be given at his direction only.[46] Clearly, President Kennedy was keeping this arrangement from the other members of ExCom, unwilling to allow this to be debated again after it had not received a consensus the first time.[47] Why would President Kennedy, under extraordinary pressure both internally and externally, and at the final minute, willingly elect to succumb to Soviet pressures and remove missiles from

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[40] Blight and Welch, pp. 12-15.

[41] Steinbruner, p. 252, Allison, p. 141.

[42] Kennedy, p. 94.

[43] Blight and Welch, p. 15.

[44] Kennedy, pp. 106-109.

[45] Ibid., pp. 106-109.

[46] Blight and Welch, p. 15, describes the secret arrangement.

[47] Ibid., p. 16.

Turkey? Kennedy made it clear he was willing to suffer the political costs, by not accepting conflict for obsolete Jupiter missiles in Turkey, to get Soviet missiles out of Cuba.[48] After this unilateral move, Kennedy appears to bypass ExCom altogether when making further crucial decisions.

Several cognitive influences are involved in his decision to give up the missiles in Turkey. If we first look to attribution theory we can see the characteristics of man as a "problem-solver." Kennedy is constantly engaged in acquiring knowledge and theories by means of which to explain, predict, and control. He shows he is willing to discern the attributes of the Soviets and the social phenomenon involved. He wanted to understand the Soviets' perspectives, but he would not stand for having their missiles in Cuba. He also had the task of dealing with Khrushchev, who had his own quirks and perceptions about his own nuclear strength and how he should deal with the American President. Kennedy was very interested in how this ordeal began, to better understand where the driving force was. He kept pursuing reasons that would explain when the Russians decided to install the missiles, seeking in the timing some clue as to their possible motives.[49] Kennedy stated, "I don't know enough about the Soviet Union, but if anybody can tell me any other time since the Berlin blockade where the Russians have given us so clear a provocation, I don't know when it's been because they've been awfully cautious really."[50] Kennedy also shows inquisitiveness, trying to understand historical predictions and the behavior of other persons. When he states that he did not have confidence the Soviets would budge at the last minute, he may have been referring to Khrushchev and his assessment of him from their meeting in Vienna. Kennedy left that meeting shocked that the man was so stubborn and not willing to make concessions. Another issue is Kennedy's value-complexity dilemma and how this influenced him. We can see he is not quick to make the decision by his willingness to allow it to be debated in ExCom. He also gave this issue appropriate time for analysis to avoid making a hasty decision, examining all the arguments. In

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[48] Schlesinger, *A Thousand Days*, p. 833. As a result of the end of the crisis Kennedy also pledged not to invade Cuba.

[49] Neustadt and May, p. 9.

[50] Sanitized transcripts of the White House meetings of October 16, 1962 (I: 11:50 A.M.- 12:57 P.M.; II: 6:30-7:55 P.M.) were released by the John F. Kennedy Library in October 1982, Transcript II, pp. 35-36.

the end he moved on his decision, to do what he thought was right and requisite of his position as President.

We can also see that Kennedy used several cognitive aids to influence this decision. He initially used consensus politics to allow the issue to be debated in ExCom. He also used history to assist him in tracing the origin of the deployment to understand the problem better. In the end, he relied on his own ideology and general principles. But, Kennedy was willing to sacrifice his political popularity to protect the people of the US; getting the missiles out of Cuba. We also observe him applying his beliefs about the correct strategy and tactics leading up to the final moments and deals of the crisis. He attempted several different channels to communicate with the Soviets and played a skillful game of diplomacy to finally bring this crisis to a head and the Soviet "blink." Additionally, we can address this decision using heuristic principles. Kennedy demonstrates his rationale as to how simple the deal for missiles is. In the minutes of one ExCom record:

> The President recalled that over a year ago we wanted to get the Jupiter missiles out of Turkey because they had become obsolete and of little military value. If the missiles in Cuba added 50 percent to the Soviet nuclear capability, then to trade these missiles for others in Turkey would be of great value. But we are now in the position of risking war in Cuba and in Berlin over missiles in Turkey, which are of little value. From the political point of view, it would be hard to get support on an air strike against Cuba because many would think we could make a good trade if we offered to take the missiles out of Turkey in the event the Russians would agree to remove the missiles from Cuba. We are in a bad position if we appear to be attacking Cuba for the purpose of keeping useless missiles in Turkey. We...have to face up to the possibility of some kind of a trade over missiles.[51]

Kennedy was able to quantify a difficult and complex issue with simple rational logic that could understood by all, at the same time allowing ExCom to see at how he was thinking. Kennedy was merely using value-maximizing to appeal to their analysis. Another influence may have been the use of the "representiveness" heuristic. Kennedy was highly influenced by Khrushchev's personality during the Vienna meeting. When Kennedy expressed doubts as to the Soviets not moving the missiles after the "Trollope Ploy," he was referring to the man behind any possible move, Khrushchev.[52] This was Kennedy's prediction, and he knew he had to put

[51] NSC ExComm Meeting No. 7, October 27, 1962, declassified in 1982.

[52] Allison, p. 227. Robert Kennedy disagreed with the content of the letter to Khrushchev from Kennedy rejecting the Turkish missile trade and demanding a halt to work on the missiles in Cuba. " In desperation, he conceived an extraordinary diplomatic move, one later labeled a "Trollope Ploy," after a recurring scene in the writings of Victorian novelist Anthony Trollope in which a marriage-hungry maiden takes some imprudent gesture – for example, a squeeze on her hand – as an opportunity to accept a proposal of marriage. The United States should

another plan into effect. If we examine the probabilities of the event we would see that the Soviets were not really in a position to leverage a nuclear advantage against the US. It became an issue of extended deterrence, and not of basic deterrence. How much mileage could each obtain for their respective policies?[53] This was the US policy to protect Berlin and the Soviet's policy to protect Cuba. Another influence may have been the use of the "availability" heuristic. Kennedy may have looked at this event as a test like the one in Berlin. To some extent Kennedy would take this as a personal a challenge. Khrushchev's continuing pressure on the resolve of the Kennedy Administration in light of the US advantage in nuclear arms may be considered a motive. Kennedy was concerned with maintaining the integrity of the NATO Alliance, both in Berlin and Turkey. The mathematical calculations of positioning nuclear missiles in Cuba showed the deployment would increase the lethality of the Soviets' nuclear arsenal two-fold. To this extent, it appears this heuristic was initially influencing the President, but was later shed.[54]

If we take a look at dissonance-reduction theory bias, we see several areas Kennedy may have shaped incoming information to fit his beliefs and perceptions. He also believed in the US position as a leader of the free world, and was not willing to destroy her prestige, and the NATO alliance's, unless it was absolutely necessary to prevent war. Clearly, he was willing to allow his "analysis laboratory," ExCom, to work through alternatives and consequences of the decision to give up the Jupiter missiles. Despite seeking consistency with his beliefs, he was able to at least look at the pros and cons of this option. The way Kennedy handles this decision, in my opinion, is healthy and should not be perceived as an impediment. He does not appear to use excessive consistency striving or dissonance-reduction. I would suppose we might reconsider if we did not have the clarity of hindsight. We can certainly say that in the end, after weighing the evidence and the arguments, he went with his true beliefs and convictions.

Lastly, the conditions of stress certainly enhanced and impeded Kennedy's decision to pull the missiles out of Turkey. Kennedy describes the environment to his brother after the blockade as, "It looks really mean, doesn't it? But then, really there was no other choice. If they

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ignore the second letter, respond to the term of the first letter as refined by Fomin's inquiry, and propose the following: an American pledge not tot invade Cuba in return for the Soviet withdrawal of missiles in Cuba."

[53] Cimbala, p. 34.

[54] This conclusion is based on the fact that Kennedy was initially concerned about a move on Berlin and another test of himself against Khrushchev. As the crisis progressed he realized that the likelihood for the missile deployment was do more to achieve missile parity.

get this mean on this one on our part of the world, what will they do on the next?"[55] He assumed the Russians were going to run high risks to expand their influence in an area of only marginal importance.[56] This environment was highly fluid and Kennedy knew it. He wanted to ensure ExCom had adequate time to deliberate over the trade of the Jupiter missiles, and allow him time to reflect on their results. He was very interested in averting risk and keeping the correct perspective - trading obsolete missiles to avoid nuclear war. He displayed a willingness to listen to the arguments of his advisors, but their consensus against the trade was not what he truly believed. It was at this time, during which he probably reflected on the Bay of Pigs fiasco, that he would be the sole individual responsible for the decision to be made.[57] This demonstrated his focus in the midst of the pressure and gravity of the situation. He was clearly aware of the high stakes involved, for his future as a politician as well as for the country and the world. One may observe that he was very rigid in his decision to give up the "worthless missiles in Turkey."[58] This could be assessed as an impediment due to stress, but to the contrary, he had a good cognitive rationale for the exchange. One may also observe that he had impaired attention and perception due to the long and stressful ordeal, especially in light of events prior to the Soviet's decision to remove the missiles. In his favor, though, the record demonstrates that he maintained his focus in light of the many forces pulling on him to make a decision, and maintained control of the situation. He left himself a way out before he would have to commit political suicide, but also maintained pressure on Khrushchev to remove the missiles as demonstrated by the two secret meetings – the "Trollope Ploy," and the arrangement with his friend at Columbia to talk to U Thant at the UN. In summary, stress influenced Kennedy to the extent that he was more keen and aware of the innumerable consequences of the situation. He maintained his focus and listened to arguments of dissent. In the end, he was sure he was making a quality decision on behalf of the US and her interests.

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[55] Kennedy, p. 45.

[56] Jervis, p. 34.

[57] George, p. 211-215.

[58] Transcript of a Discussion about the Cuban Missile Crisis, June 28, 1983, p. 63, Alfred Sloan Foundation, New York.

3. Summary

This section outlined a cognitive model to be used for looking at a policymaker's decision-making process. It then demonstrated the utility of this type of a critical analysis process on three decisions President Kennedy made during crisis' conditions. This section hopefully emphasized the significance of this procedure and the importance of cognitive influences on the decisionmaker. It is interesting to note how a decisionmaker may be influenced by cognitive influences and an environment characterized by value-complexity, multiple objectives and uncertainty. As policymakers come to office and transforms the decision-making system to support their needs, nothing prepares them for a crisis situation. As they create their systems in an environment characterized by routine, they are ill prepared for a fast-paced and fluid environment of a crisis. At this point, a large burden shifts to the President, as a unitary decisionmaker, to take charge and direct action. The pressure and element of control is immense, as the leader sets the stage for how the Administration will not only deal with this adversary, but how they will proceed with this crisis operation. This section allowed us to "peel back the onion" to discover the decisionmaker's cognitive "map" and what influenced it, as he pursued a quality decision.

B. EXCOM AND GROUP DYNAMICS

1. Critical Analysis

During the Cuban Missile Crisis the standoff between the United States and the Soviet Union put incredible stress on the decision-making processes of both countries. Learning from the Bay of Pigs fiasco, President Kennedy created an interdepartmental ad hoc group of advisers to consider the implications of the missile deployment.[59] This group became known as ExCom, for Executive Committee. This section focuses on the group dynamics of ExCom and how its constituents conducted foreign policy decision-making during this crisis. As Sorensen writes:

> Indeed, one of the remarkable aspects of those meetings was a sense of complete equality. Protocol mattered little when the nation's life was at stake. Experienced mattered little in a crisis which had no precedent. Even rank mattered little when secrecy prevented staff support. We were fifteen individuals on

[59] George, *Presidential Decisionmaking in Foreign Policy*, p. 211.

> our own, representing the President and not different departments. Assistant Secretaries differed vigorously with their Secretaries; I participated much more freely than I have ever had in an NSC meeting...[60]

As the group formed, Kennedy gave them specific rules and procedures to follow, optimizing their collective talents to identify, develop and evaluate alternative courses of action for his examination.[61] Though many scholars described this design as near perfect, ExCom overlooked several critical factors that could have significantly dominated different outcomes in the crisis. Why did ExCom recommend courses of action without completely reviewing all critical factors? I propose that the impediments of group dynamics influenced ExCom's decision-making process. The purpose of this section is to conduct a critical analysis of ExCom using a group dynamic model in hopes of bringing to light this issue. Despite the group impediment safeguards in place, ExCom still missed one of the most significant critical factors of the crisis: the amount of time they had to make a decision.[62] Their timeline evolved from when the group thought the missiles would become operational. ExCom thought they had somewhere between 6 hours and two weeks for a timeline. Their was no real delineation between "field-type" weapons with a quoted time for activation of 6 hours, and what General Marshall Carter, the Deputy Director of Central Intelligence, said, that these missiles would be fully operational in two-weeks.[63] The transcripts also imply that maybe a single missile could be operational much sooner.[64] In addition, McNamara demonstrated uncertainty as to whether the time constraint was 6 hours or two weeks.[65] The final deadline leaves the reader to understand that the two-week period took on a life of its own, and took hold almost arbitrarily.[66] An externality of this quasi-deadline was that it was being used to gauge the utility of direct air

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[60] Theodore C. Sorensen, *Kennedy*, (New York: Harper and Row, Publishers, 1965), p. 679.

[61] Ibid., p. 679.

[62] Marc Trachtenberg, "Documentation: White House Tapes and Minutes of the Cuban Missile Crisis," *International Security*, Vol. 10, No. 1 (Summer 1985), p. 169.

[63] Ibid., p. 169.

[64] Ibid., p. 169.

[65] Ibid., p. 169.

[66] Ibid., p. 169.

strikes against Cuban missiles before they became operational.[67] It was feared that Cuba would retaliate against American cities if we attacked the missiles and did not destroy them all.[68] All this leads us to believe that no real investigation was pursued by ExCom to clarify when the missiles arrived. It later had become known to ExCom that some missiles had already become operational, but their deadline for action never changed.

This was a huge risk to take, not only by ExCom, but also by President Kennedy. The Administration was also unsure if any nuclear warheads were in Cuba, but prudently assumed there were. In fact, SS-4 MRBMs arrived on September 15.[69] Though Kennedy stated he would allow defensive weapons in Cuba, he warned against offensive ones.[70] Also, 20 nuclear warheads had arrived in Cuba prior to the blockade.[71] In 1992 it became public that Soviet forces in Cuba actually possessed 162 nuclear warheads at the height of the crisis.[72] Had ExCom pursued the missile arrival data, they could have had a more realistic timeline in which to work. Our satellite photos discovered missile sites on 14 October two days before the Members of ExCom and the President had known on 16 October.[73] Their timeline was obviously inaccurate in light of the information available and could have pursued.

What group dynamic impediment caused ExCom to solidify such a soft deadline to formulate future recommendations? I propose that at the time of this discovery ExCom was under enormous pressure in attempting to grasp the scope of the issue at hand. Five of its members had worked together during the Bay of Pigs and already formed close group bonds.

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[67] David A. Welch and James G. Blight, "An Introduction to the ExComm Transcripts," *International Security*, Vol. 12, No. 3 (Winter 1987/88), p. 25.

[68] Alexander L. George, David K. Hall and William E. Simons, *The Limits of Coercive Diplomacy* (Boston: Little, Brown and Company, 1971), p. 128.

[69] Bruce J. Allyn, James G. Blight, and David A. Welch, Authors' interview with Othon Montero, Researcher at the Instituto de Historia de Cuba, May 15, 1989, Havana.

[70] James G. Blight and David A. Welch, *On the Brink* (New York: Hill and Wang, 1989), p. 364.

[71] Raymond L. Garthoff, *Reflections on the Cuban Missile Crisis*, (Washington, D.C.: The Brookings Institute, 1989), p. 42.

[72] This is stated in Robert S. McNamara, *In Retrospect* (New York: Times Books, 1995), p. 341. As reported from a Russian news agency.

[73] Bruce J. Allyn, James G. Blight and David A. Welch, "Essence of Revision: Moscow, Havana, and the Cuban Missile Crisis," *International Security*, Vol. 14, No. 3 (Winter 1989/90), p. 153.

Other new members were coming on board during a high-pressure, high-stakes situation. Numerous issues were being tossed around simultaneously. When conducting mission analysis one of the most important issues next to problem definition is, "how much time do we have." I would suggest that, while trying simultaneously to define the problem and develop alternatives, the later time of 2 weeks was used as an initial informal planning deadline, so as to allow moving on with the decision-making criteria. This oversight may have been due to the initial psychological pressure put on the small group, and the limited amount of time they opted to devote to any analytical process of securing an accurate deadline.[74] Records show ExCom debated little over the establishment of the timeline, thus accepting greater risk in this decision. Another impediment was that ExCom was not really given any detailed expert data for their analysis, thus missing this critical uncertainty of time. General Carter brought only simplified summaries from the CIA. In final analysis, although President Kennedy established new rules and procedures to counter group dynamic impediments, they had not completely vanished. ExCom demonstrated characteristics of those impediments, and the effects could have had significant impact on future events.

A second critical factor ExCom failed to pursue was who had command and control (C^2) of the nuclear warheads in Cuba? Was it Khrushchev, Castro, or the local military commander? There was little conversation in ExCom in reference to the C^2 of the Soviet missiles. Marc Trachtenberg wrote that McNamara was hesitant, during the 16 October meeting, to attack Cuba once any of the missile sites there became operational. This was rooted in his fear that Soviet control over the missiles might be loose.[75] McNamara expressed concern that a local commander could launch them on his own initiative, and states that we just "don't know" what kind of communication and control systems the Soviets had over the missiles.[76] The transcripts reveal that no one pressed him on this issue.[77] This could have been a significant issue, especially in negotiations with the Soviets, and possibly in any contingency plans the US would

[74] Richard E. Neustadt and Ernest R. May, *Thinking in Time* (New York: The Free Press, 1986), p. 4. Neustadt states that debate in serious decision situations starts at least nine times out of ten with the question: What do we *do*? Background and context get skipped.

[75] Trachtenberg, p. 169.

[76] Ibid., p. 169.

[77] Ibid., p. 169.

develop. Was the U.S. dealing with the real "button-pusher?" Did the Soviets have operational control over the missiles? Khrushchev assured President Kennedy that Soviet missiles in Cuba were under his strict control.[78] During the ExCom meetings American intelligence never detected the presence of nuclear warheads in Cuba, and interpreted incomplete construction of storage bunkers for the warheads as evidence they had not yet arrived.[79] President Kennedy prudently directed that in the face of uncertainty we should assume they had.[80] ExCom never pursued this critical fact, and were willing to accept that the Soviet's C^2 system was as good as ours was.

In fact, nuclear warheads were in Cuba, counter to CIA assessments. The warheads arrived in Cuba and were stored well away from the missiles themselves.[81] According to General Volkogonov, head of the Soviet Ministry of Defense Institute of Military History, the missiles could have been operational in four hours.[82] Also, according to Peter Stein and Peter Feaver, they probably could have been fired without orders from Moscow.[83] Had ExCom pursued the question of nuclear missile C^2 in Cuba, they could have found that their options for a surgical air strike or an invasion were riskier then supposed. This information would have impacted on the courses of action being examined and alerted them to spend more time on contingency planning.

Why was this potentially crucial piece of information given such minuscule consideration in ExCom deliberations? Reasons for this lack of interest may have been due to limited information provided by the CIA, and the President's "safe" assumption that nuclear warheads were present. They may have looked at this as a "soft" issue, one that did not warrant the time investment. Although ExCom had Soviet experts present, their focus was on larger strategic

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[78] Welch and Blight, p. 9.

[79] Ray S. Cline, "Nuclear Seemed Remote," *Washington Post*, February 5, 1989, p. D8.

[80] McGeorge Bundy, *Danger and Survival: Choices about the Bomb in the First Fifty Years* (New York: Random House, 1988), p. 425.

[81] Allyn, Blight and Welch, p. 154.

[82] Ibid., p. 154.

[83] Peter Stein and Peter Feaver, *Assuring Control of Nuclear Weapons: The Evolution of Permissive Action Links*, Center for Science and International Affairs Occasional Paper No. 2 (Lanham, Maryland: University Press of America, 1987), p. 2.

issues and the role playing of Soviet leaders, rather than on the capabilities of the C^2 system. So ExCom members seemed to assume this issue away, referencing their point-of-view to a known quantity, the American system.

I propose that group dynamic impediments, evident within ExCom, contributed to this oversight. In this high-stakes environment, cohesive psychological pressure existed and may have influenced how senior officials dealt with a reduced amount of knowledge. The criticality of the Soviet C^2 system may have been lost in the CIA's over simplification of analysis transmitted from lower levels. This is supported by the data presented. Also, the pressure for senior officials to align themselves with the President on this issue may have caused them to dismiss further analysis and appraisal of the warheads. Here were a group of senior officials working at the edge of their abilities on national strategy issues, and due to their modest size, probably limited in their range of talent. This reduced the group's knowledge and analytical skill to consider all issues, and caused them to accept greater risk on this decision. Again, it appears group dynamic impediments existed within ExCom, and that there impact could have had far-reaching effects as the crisis unfolded.

Another critical factor ExCom overlooked was the creation of contingency plans in case of an armed nuclear conflict.[84] This is evident in the October 27 transcripts, as McNamara addresses ExCom as to "what if" this crisis cannot be resolved.[85] To contemplate this issue so late in the crisis demonstrates that the group had conducted no real analysis or examination of options prior to this point, or, felt no immediate threat of nuclear war. This demonstrates that McNamara was thinking, in a vague way, about how to avoid a U.S.–Soviet war, and also suggests that he may not have had an acceptable answer to the situation.[86] McNamara begins to "spin-up" the members with this array of questioning, causing them to think nuclear war was becoming more probable.[87] One would think that as ExCom sat in their situation room, with the Strategic Air Command on full nuclear alert, aircraft and troops pre-positioned in Florida for an invasion, and a naval blockade in place, they would have discussed nuclear contingency plans

[84] Welch and Blight, p. 28.

[85] McGeorge Bundy and James G. Blight, "October 27, 1962: Transcripts of the Meetings of the ExComm," *International Security*, Vol. 12, No. 3 (Winter 1987/88), p. 72.

[86] Welch and Blight, p. 28.

[87] Bundy and Blight, p. 73.

with our allies. If one considers the gravity of events necessary to cause us to posture our national forces at this level, and the concern our NATO allies would have had anticipating how events would unfold, some discussion of contingency courses of action should have taken place sooner.

One may assume that the reason for this oversight had nothing to do with a lack of planning, but rather with a lack of concern that nuclear war between the U.S. and the Soviet Union would not occur.[88] The US had a 3 to 1 nuclear advantage at the time and may have felt complacent as to any relative threat to her security. This complacency may also have been present in ExCom.[89] What they failed to consider was an attack on our NATO allies, specifically Turkey, in the event of some level of escalation. There was also great potential for either country to misread or "misperceive" an action by an actor lower on the chain. For instance on the blockade someone could have sunk a Soviet ship, or someone shooting at a U2 spy plane.[90] With tensions at this level, the imperative was to avoid accidental conflict. However, in the event that something sparked a conflict, contingency plans needed to be in place as soon as events began to unfold, if only to strengthen our alliances.

Several group dynamic impediments extant within ExCom contributed to the oversight to plan contingency options if escalation occurred. Again, due to the cohesive psychological pressure of the group, especially this late in the crisis, we can observe that nuclear war complacency probably diverted their focus away from this task and toward areas they deemed more important. Their limited group size may have also contributed to their dissociation from this issue. If the entire group took on the aura of complacency toward these plans, then maybe this was the representative attitude of the group. The residual effects of this decision prevented critical examination of all issues and debate, thus accepting greater risk in this area. It is also apparent that minimum analysis was sent forward from experts at lower levels. The invasion plans and the blockade were already being conducted by the military. The strategic international contingencies were the responsibility of ExCom. It is possible, but I can only speculate, that

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[88] Welch and Blight, p. 28. Suggest that Dillon, Nitze and Taylor -- express confidence that there would be no Soviet response, largely because of the United States' massive superiority in strategic nuclear weapons.

[89] Ibid., p. 28. The transcripts showed no discussion of whether the Single Integrated Operations Plan (SIOP, master nuclear war plan) would have been used.

[90] Jervis, *Perceptions and Misperceptions in International Politics*, p. 322 & 339.

analysis was too simplified or nonexistent from experts at lower levels to have an impact on these senior officials, causing them to miss the critical lack of contingency planning.

Even though President Kennedy directed ExCom to examine non-diplomatic solutions, he was already considering the trade of Turkey's Jupiter missiles for a peaceful solution.[91] Because senior officials have a tendency to align themselves with their boss, ExCom members may have felt this "trade" undercurrent and did not think to pursue contingency planning that might have had little significance later. One last point of analysis is directed toward the power and prestige of Secretary of Defense McNamara. His vagueness about how to limit a US-Soviet war demonstrated that he may not have had an acceptable answer to the problem and therefore was hesitant to incriminate himself. I say this in light of him addressing this issue late in the crisis, rather than sooner. It seems prudent, with even a remote chance of nuclear war, our forces on high alert, that these contingencies should have been addressed sooner. It appears that group dynamic impediments certainly existed in ExCom and especially impacted on the attention focused on nuclear war contingencies. This shortfall could have been catastrophic if the crisis had taken a different course.

2. Summary

In final analysis of ExCom's decision-making procedures during the thirteen-day crisis, the lessons learned from the Bay of Pigs no doubt enhanced their ability to make critically analyzed, higher-quality recommendations to President Kennedy. However, even though this group employed some of the finest minds in the Administration, they still managed to overlook several critical factors - factors that could have changed the course of their recommendations and the crisis. Their failure to establish a legitimate timeline caused them to work in an artificial "time bubble," possibly missing opportunities or other significant issues for action. Their failure to pursue the question of the C^2 issues of the Soviet nuclear warheads in Cuba prescribed a range of different assumptions, actions and contingencies, again potentially impacting on their final recommendations. Finally, their failure to address conflict contingencies until late in the crisis, while the entire U.S. military stood on nuclear alert, seemed absurd and out of place, and could potentially have placed the U.S. and her allies at considerable disadvantage. I attribute these failures to group dynamic impediments still in existence within ExCom.

[91] Ibid., p. 15.

In explaining ExCom's performance, I examined the characteristics of group dynamic impediments present within the group. Although President Kennedy took great pains to direct the effectiveness of the group, "residual" impediments lingered and influenced their activities. In fact, it may be next to impossible to erase all impediments from any group. As I mentioned at the beginning of this study, I believe President Kennedy understood the limitations of ExCom, and although he tried to hedge their performance with "effectiveness" rules and procedures, ultimately he knew their human limitations and understood his risk. ExCom did not produce perfect results, but did serve the needs of the President - to critically explore alternatives; to this degree, it performed well.[92] These imperfections will always exist within groups. Therefore, we must continue to pursue analysis that critically deconstructs this dynamic if we are to improve decision-making in the future.

C. THE NAVY AND ORGANIZATIONAL BEHAVIOR

1. Critical Analysis

Why did government organizations supporting President Kennedy and ExCom's decision-making process submit policy recommendations inconsistent with policy goals? I propose that impediments of organizational behavior influenced the output of these organizations. In the conduct of the Cuban Missile Crisis, both Kennedy and Khrushchev displayed an understanding and concern for organizational behavior. On numerous occasions they demonstrated their concern for inadvertency, losing control of the situation to the momentum of the organizations involved, particularly the military. Kennedy makes reference to the situation in the different governments in 1914, and how the beginning of WWI began. He was not interested in creating a situation where he lost control and the military executed tasks without his authorization. In effect, he did not want this to turn in to a self-fulfilling prophecy of escalation for the military. Anti-submarine warfare (ASW) operations conducted by the US Navy came very close to initiating all out war during the crisis.[93] On October 23, 1962,

[92] President Kennedy put certain safeguards secretly in place to prevent a nuclear war breaking out over Cuba. He clearly understood his responsibilities and the risk associated with the decisions he had to make. Most importantly he understood how to use ExCom.

[93] Allison, p. 138.

President Kennedy signed the Quarantine Proclamation stating that "any vessel or craft" would be subject to detention and search.[94] The Navy prosecuted this mission with vigor under the auspices of their standard operating procedures and their interpretation of the rules of engagement (ROE).[95] These operations were cleared through the Secretary of Defense Robert McNamara. Did the Kennedy administration understand the scope of the Navy's interpretation of this mission, and just how close could they come to a confrontation with the Soviets? The water area covered under this proclamation was approximately 3.5 million square miles. At this time the Navy began conducting some of the most extensive and productive ASW operations since WWII.[96] The Navy opted to conduct ASW operations at a time when there was great controversy as to how effective it was in contrast to how large the ocean was to search.[97] Admiral Anderson stated that "The presence of Russian submarines in Caribbean and Atlantic waters provided perhaps the first opportunity since WWII for our anti-submarine warfare forces to exercise their trade, to perfect their skills, and to manifest their capability to detect and follow submarines of another nation."[98] There was also no current international procedure for signaling Soviet ships to the surface.[99] If signals could not be established for the execution of the blockade than this could lead to weapons unnecessarily being used against a Soviet sub.[100] Thus, such procedures were quickly established and disseminated worldwide.[101]

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[94] "The Soviet Threat to the Americas," *Department of State Bulletin* 47, (November 12, 1962), pp. 715-720.

[95] Alexander L. George, "The Cuban Missile Crisis," *Avoiding War: Problems of Crisis Management*, ed. Alexander L. George, (Boulder, Colorado: Westview Press, 1991), p. 246.

[96] William W, Kaufmann, *The McNamara Strategy*, (New York: Harper & Row, Publishers, 1964), p. 271.

[97] Allison, p. 138.

[98] "Admiral Confirms US Navy Detected and Trailed Soviet Submarines," *New York Times*, November 10, 1962, p. 1.

[99] Joseph F. Bouchard, "Use of Naval Force in Crisis: A Theory of Stratified Crisis Interaction," Ph.D. dissertation, Department of Political Science, Stanford University, September 1988, p. 651. This dissertation later became a book: Joseph F. Bouchard, *Command in Crisis: Four Case Studies*, (New York: Columbia University Press, 1991).

[100] Ibid., p. 651.

[101] Ibid., p. 651-652.

Here is the standard message:

> Pursuant to Proclamation of the President of Oct 23rd, 1962 on the "Interdiction of the Delivery of Offensive Weapons to Cuba" the Secretary of Defense has today issued the following submarine surfacing and identification procedures when in contact with U.S. quarantine forces in the general vicinity of Cuba U.S. forces coming in contact with unidentified submerged submarines will make the following signals to inform the submarine that he may surface in order to identify himself: Signals follow—quarantine forces will drop 4 or 5 harmless explosive sound signals which may be accompanied by the international code signal "IDKCA" meaning "rise to surface." This sonar signal is normally made on underwater communications equipment in the 8 kc frequency range. Procedure on receipt of signal: Submerged submarines, on hearing this signal, should surface on easterly course. Signals and procedures employed are harmless.[102]

However, the situation remained ambiguous. There was no way to confirm the subs were given this information from their base. To increase the decision parameters of the situation, after the President learned Soviet submarines were making their way into the Caribbean, he directed the navy "to give the highest priority to tracking the submarines and to put into effect the greatest possible safety measures to protect our own aircraft carriers and other vessels."[103] It was probably unknown to Kennedy that the ASW aircraft were also carrying live MK-43 ASW homing torpedoes.[104] This action was consistent with the navy SOPs for the known level of DEFCON in effect at the time.[105] Also, Navy commanders had complete authority to take action on their own initiative, which was consistent with normal operating procedures.[106] Bouchard gives evidence that Kennedy and McNamara were not fully aware of ASW procedures, and thus did not give any modification to their ROE.[107] As a result, considerable discretionary responsibility was given to the ASW operators to engage in the face of an interpreted hostile Soviet action.[108]

During the course of the blockade, ASW operations confronted up to five Soviet submarines. The U.S. requirement for Soviet subs reacting to the signaling was for them to

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[102] Naval Oceanographic Office, "Notice to Mariners No. 45-62, Special Warnings Nos. 30-33, "Paragraphs 5980-5983, October 24-25, 1962 (Naval Oceanographic Office, Washington, DC).

[103] Robert F. Kennedy, *Thirteen Days*, pp. 61-62.

[104] Bouchard, p. 657.

[105] Ibid., p. 657.

[106] Ibid., p. 657.

[107] Ibid., p. 657.

[108] Garthoff, *Reflections on the Cuban Missile Crisis*, p. 69 addresses the same discretion to the naval commanders.

surface in the presence of U.S. ships, a humiliating event for a sub captain.[109] The ASW operators used the initial advertised non-lethal signals to surface the subs, although at times they increased the severity to get their attention and compliance.[110] Several times ASW operations consisted of pursuit and use of non-lethal depth charges to gain compliance.[111] One could say that the navy did not place a conservative interpretation on its authorization to conduct ASW operations to protect the fleet. Instead, three subs that had already turned to and were heading out to the Atlantic were aggressively pursued, versus monitoring their movement away from the blockade line.[112] The Navy also put into effect the authorized ROE intended to make them surface even though they were well outside the designated area.[113] To understand the gravity of the situation, one close encounter that particularly excited the group sparked this comment from the President: "Isn't there some way we can avoid having our first exchange with a Russian submarine – almost anything but that?" To this, McNamara replied, "No, there's too much danger to our ships. There is no alternative. Our commanders have been instructed to avoid hostilities if at all possible, but this is what we must be prepared for, and this is what we must expect."[114] Luckily, throughout the crisis no significant encounter occurred between the ASW forces and the Soviet subs. But, clearly the potential existed, and was essentially in the hands of navy commanders.

What organizational behavior impediments increased the likelihood of a confrontation between ASW forces and the Soviet subs? I propose that the instructions given to the Navy at the time of the blockade were interpreted along normal organizational channels, and not interpreted in the context of a sensitive crisis situation. The situation, as described above, was highly ambiguous for ASW forces. They did not know if the Soviet subs had received the new signaling procedure, and were given "unrestricted" parameters to interpret hostile action against

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[109] Ibid., p. 660

[110] Ibid., p. 666.

[111] Ibid., p. 660.

[112] Blight and Welch, *On the Brink*, p. 61 states that the ASW forces rode 4 of the 5 submarines to the surface during the crisis.

[113] George, *Avoiding War*, pp. 245-246.

[114] Kennedy, p. 70.

U.S. carriers and vessels. The added signaling procedures were new to ASW forces who only conducted this type of signaling to determine whether the sub was friend or foe during peacetime, not to attempt to surface him. Another conditional factor ASW forces had to deal with was the commander of each Soviet sub. Forcing him to surface in the presence of U.S. ships, knowing this would be a humiliating event for him, might have caused him to react with defiance or resistance. Lastly, the phenomenon of a unit transitioning from peacetime-type activities to a potential wartime posture can cause a certain level of confusion and anxiety.

As we observe some conditional factors of this situation, we also must consider the organizational impediments of the U.S. Navy and her ASW forces. One characteristic of organizations is that they are rigid in their behavior. In this case it was demonstrated by how quickly the ASW forces were able to adapt to a formal change in their SOP for signaling the Soviet subs. This at least created a set of procedures that was an addendum to their SOP, which they could effectively use to coordinate a large operation.

This rigidity can also be interpreted as an impediment because of how strictly the ASW forces followed their SOP and the new signaling procedures. If the ASW forces could see that the three submarines were turned and headed away from the designated blockade area, than why would they risk a potential exchange or confrontation by pursuing them at a significant distance from the blockade area? And, why would they not just rely on the necessary passive monitoring of the subs? These questions highlight the impediment of a rigid organizational structure and how that effects the interpretation of its missions. This situation also suggests that the ASW forces tasked to protect US ships were acting in their own organizational interests by aggressively pursuing the subs to insure protection of these ships – one of its highest organizational priorities. The pursuit of these subs suggests that the navy was also trying to show-off this controversial ASW capability. The bureaucratic actor, Admiral George W. Anderson, Chief of Naval Operations, suggests this by the enthusiasm the Navy approached this mission during the crisis, and by making it a priority task. This demonstrates that the motivations and intentions of the Navy were not the same interests of the executive, President Kennedy, at the time of the crisis. This also demonstrates that SOPs and routine actions by an organization may be inappropriate to deal with novel policy issues. In this case we were dealing with a highly sensitive international nuclear crisis, which probably would have called for more caution and less boasting of one's capabilities.

Another organizational behavior impediment was the Navy's interpretation of the command and control of the ASW operations as a function of normal operating procedures. By controlling information to McNamara and Kennedy, they left them unfamiliar with the vast discretion given navy commanders to judge hostile actions and take counter action. This increased the chance for confrontation. This also showed that in a crisis the organization relied on its normal procedures to conduct business rather than situation-specific procedures. In this same spirit, the fact that ASW forces were carrying live ordinance also warrants our attention. Individual commander's discretion and the immediate ability to launch ASW ordinance increased the distance of control of the situation, relying on subunits to make decisions that could trigger a nuclear confrontation.[115]

Lastly, this situation of ASW command and control and operations against the Soviets suggests that the navy hierarchy may have been preoccupied with the nuances of the ASW operation, thus losing sight of the international events taking place with the Soviets. I say this because of their decision to delegate confrontation authority to lower commanders during one of the most sensitive times during the crisis. Any flaw in judgement that led to confrontation would have most certainly led to an international escalation of hostilities. This example shows several organizational behavior impediments that could potentially have led to severe consequences. The organizational input to the decisionmaker can inhibit both his receipt of balanced analysis for policy processing, and his control of policy implementation, thus threatening to undermine national policy objectives.

On October 24 at 10:00 AM, President Kennedy directed the Navy to establish a blockade line to intercept Russian ships and submarines going to Cuba. Khrushchev announced publicly that this constituted an act of war. This was a hard decision for Kennedy and one wrought with great analysis and debate within ExCom.

Of his decision Kennedy reflects:

> Above all, while defending our own vital interests, a nuclear power must avert those confrontations which bring an adversary to the choice of either a humiliating defeat or a nuclear war. To adapt that kind of course

[115] Scott D. Sagan, "Nuclear Alerts and Crisis Management," *International Security*, Vol. 9, No. 4 (Spring 1985), p. 117 came to similar conclusions about the command and control given to the ASW commanders.

> in the nuclear age would be evidence only of the bankruptcy of our policy – or of a collective deathwish for the world.[116]

In the Caribbean, US local superiority was overwhelming. The Navy enjoyed a distinct advantage in both power and proximity.[117] Kennedy selected this option because it provided limited, low-level action, permitting a more controlled escalation with the flexibility to increase, either gradually or rapidly, as the situation required.[118] The true intent of this military action was to integrate diplomatic signaling and demonstrate to the Russians American resolve. We wanted to tell Khrushchev that if he did not remove the missiles we would attack Cuba.[119] Because of this hybrid military-diplomatic arrangement, Kennedy and McNamara were reluctant to release full control of the crisis to the military. They had grave concerns that an inadvertent contact would quickly escalate the situation, causing them to lose any semblance of control to end it peacefully.[120] The President realized Khrushchev needed time to consider what he should do and to issue orders through his bureaucratic channels.[121] Kennedy already had the momentum going with our military, but needed a way to maintain control and slow things down for his Soviet counterpart. Kennedy opted to insert several discrete steps into the implementation of the blockade to delay an inevitable confrontation with the Soviets.[122] One of these steps was to direct the blockade line closer to Cuba, giving Soviet ships more time before they would come into contact with U.S. ships.[123] The initial blockade line was determined by Admiral Robert L. Dennison, Commander in Chief Atlantic, and Vice Admiral Alfred G. Ward, Commander of Task Force 136 (TF 136) – the blockade force.[124] It would be an arc 500 miles from Cape Maisi,

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[116] *The New York Times*, June 11, 1963, and Kennedy, p. 126.

[117] Allison, p. 57.

[118] Sorensen, *Kennedy*, p. 688.

[119] Sagan, p. 110, Blight and Welch, pp. 63-64.

[120] Blight and Welch, pp. 63-64, Allison, pp. 215-216.

[121] George, *Avoiding War*, p. 241.

[122] Ibid., p. 241. "The logic of Kennedy's tactic of subdividing the blockade option, grew out of his recognition that the possibility for careful presidential control of the conflict would decline rapidly once a military incident occurred."

[123] Sorensen, p. 710, Allison p. 129.

[124] Bouchard, p. 615.

the eastern tip of Cuba, which had been determined to be outside the range of Cuban aircraft.[125] Whether the Navy, and specifically Admiral Anderson, vehemently protested this proposal is a controversy among scholars.[126] It appears that the President made this decision after talking with the British Ambassador Ormsby-Gore and McNamara on 23 October.[127] McNamara consulted with the CNO, and concurred that the line would stay at 500 mi. until the extent of the Cuban aircraft threat could be determined.[128] McNamara also specified that no Soviet ships were to be boarded until they reached the 500 mi. arc, which specification the President also approved.[129] The navy on the other hand was eager to go far out from the line and intercept key Soviet ships.[130] This close-range set of parameters was not sent down the chain of command to the navy commanders conducting the blockade. The key point is that navy ships on the quarantine line *were* allowed to intercept Soviet ships outside the 500 mi. arc.[131] Admiral Dennison states that "the line wasn't static. We didn't just sit there. We knew where these ships were and went out to intercept them."[132] It appears McNamara had not issued the order to not intercept Soviet Ships beyond the 500 mi. arc, "technically."[133] What transpired in the dialogue between McNamara and the navy may have been a terminological and technical misunderstanding. The intent of the President and McNamara's directive was to avoid an inadvertent confrontation and buy time for Khrushchev. If one looks at the operating procedure for intercepting a ship, we can see that it did not conform to the spirit of the President's intent and could have caused just such an incident as the President wished to avoid.[134] The operating procedures for interception were

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[125] Ibid., p. 617.

[126] Sorensen, p. 710, Allison p. 129, George, *Avoiding War*, p. 241, Bouchard, pp. 618-623.

[127] Arthur M. Schlesinger, Jr., *A Thousand Days*, (Boston: Houghton Mifflin Company, 1965), p. 818, Sorensen, p. 710.

[128] John M. Young, "When the Russians Blinked: The U.S. Maritime Response to the Cuban Missile Crisis," MA thesis, Department of History, University of Tulsa, September 1989, p. 79, Bouchard, p. 625.

[129] Bouchard, p. 625.

[130] Sorensen, p. 710, Bouchard, p. 627.

[131] Bouchard, p. 626.

[132] Ibid., pp. 626-627.

[133] Ibid., pp. 626-627.

[134] Ibid., pp. 626-627.

for the U.S. Navy to come close enough (1 to 5 miles) to identify a ship positively, and then to trail them visually or on radar.[135] This action could have provoked evasive measures leading to a confrontation with Soviet ships prior to the 500 mi. arc. As early as October 21, the Navy had already designated the *Poltava* as the "first target." Th Navy was pursuing it with a destroyer "at maximum speed" when on October 24, still beyond the 500 mi. arc, it turned away, even though it had not been due to reach the quarantine line until October 26.[136] Further, the navy did not withdraw its quarantine line back toward Cuba until 29 October, to a 180 mi. mark. This activity took the navy six days to accomplish, even after Admiral Anderson agreed that the minimum Cuban aircraft threat did not exist outside the 180 mi. line as early as 20 October.[137] It appears that this requirement for 500 mi. was directed in the CINCLANTFLT OPORD 45-62, released 21 October, and not from the JCS directive of 22 October.[138] This set of actions by the navy suggests that they were going to conduct the blockade as they saw fit, regardless of the reiterated intent by Kennedy and McNamara.[139] Their decisions certainly raised the potential for a premature confrontation that would have threatened the political objectives of this policy. The cause of this was one of control and power. The Navy wanted to maintain some level of ambiguity in order to prevent any micro-management from Kennedy and McNamara, which their was a precedence during the Bay of Pigs fiasco.

What organizational behavior impediments increased the likelihood of a premature confrontation between Soviet ships and the U.S. Navy conducting blockade operations in the early stage of the crisis? I propose that instructions given to the Navy for the conduct of the blockade were interpreted along normal organizational channels and influenced by parochial

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[135] Ibid., pp. 626-627.

[136] Garthoff, p. 68.

[137] Sagan, p. 110 n26, Bouchard, p. 619.

[138] Bouchard, p. 620.

[139] During this time another conversation took place between Admiral Anderson and McNamara in reference to the procedures that will be used to stop Soviet ships. As Admiral Anderson went through the procedures he mentioned that if a ship did not comply with the non-lethal signals we would fire a shot across the bow first, if this did not work they would fire into the rudder. This discussion turned heated as McNamara continued to interrogate Anderson, ending in a direct order by McNamara that no shot would be fired unless he personally gave permission. Anderson's response was for him to not mettle in navy business. McNamara again reiterated the order, and waited for Anderson to acknowledge. See Blight and Welch, pp. 63-64. This procedure was also briefed to the President by Anderson, See Sorensen, p. 698.

views from the chain of command. This action pitted Navy interests against the more significant political signaling objectives of the President. The context for this operation was a crisis, and the Navy's actions could possibly mean the difference in its outcome. Throughout this operation an average of 46 ships, 240 aircraft, and approximately 30,000 personnel were used to search 3.5 million square miles of ocean.[140] This required extensive communications and procedures to coordinate and synchronize activities. This operation was characterized by complexity and extended command and control, all the more reason for reliance on SOPs and procedures to direct activity responsively. The navy demonstrated their preference for their own interests and priorities while conducting this blockade. These interests and priorities appeared at times to directly conflict with the President Kennedy's diplomatic intent.

Throughout this operation we see the impediment of championing one's initiatives to advance one's parochial interests and goals. The primary actors for the Navy, Admirals Anderson and Dennison, appear to have controlled vital information to protect these interests. My research suggests that the admirals were not pleased with attempts to micro-manage the blockade by the White House. In two particular cases they skillfully managed to skirt the directed parameters of the blockade to protect their interests. The overall blockade was controlled by the CNO, and directly under him CINCLANT.[141] The navy was in an unprecedented position of advantage because of her strength and the proximity to "rule" the Caribbean. They perceived their mission to set up the blockade as an opportunity to demonstrate naval superiority. As stated by Admiral Anderson, "this is a navy show, we're going to show them how it's done."[142] He also made a revealing comment to McNamara when they were discussing boarding procedures, saying that the Navy has been running blockades since the days of John Paul Jones, and if he could be left alone they could run this one successfully as well.[143] As reports show the navy was eager to encounter and board Soviet ships. They were anxious to propagate any success, especially if they could produce a captured nuclear weapon in the process. They did not want to be restrained after the operational switch was turned on and they were in charge. Orders to not intercept were somehow lost in the shuffle on the navy's side, but

[140] Young, p. 80.

[141] Bouchard, p.558.

[142] Ibid., p. 555.

McNamara's orders for no boarding were clear. McNamara and the President were most likely unaware that the navy still planned on intercepting ships prior to the 500 mi. arc. If they had known this he most likely would have halted it. The "larger" intent of the operation was to slow things down to let the diplomatic process work, not speed it up and accidentally confront Soviet ships, and threatening escalation, as it appears.

Vital information appears to have been controlled by Admiral Anderson, who did not initially support moving the blockade line closer to Cuba based on the posture of Cuban air forces. This request came as late as 23 October from the President and McNamara, though Anderson stated as early as 20 October that they could move back to a 180 mi. arc. When the 22 October JCS directive came out it did not state a blockade line distance, this was left to the discretion of CINCLANT, Admiral Dennison. He directed it to be 500 miles, when it appeared he could have complied with the President's request for a closer line. This suggests that the line be established based on priorities and interests of the navy - to aggressively perform their duties to demonstrate dominance of the crisis on the high seas.

This set of examples demonstrates several organizational behavior impediments that hindered the ability of the President to conduct balanced analysis for his decisions. We see the Navy's bureaucratic actors champion the organizational interests, and how they set priorities on these interests to gear organizational compliance. Again, these priorities were in direct conflict with the President's. We also observed these actors controlling vital information which led to an unbalanced analysis by Kennedy and McNamara. This can be seen when the President and McNamara were unaware that the Navy still intended to intercept Soviet ships outside the 500 mi. arc after the "no boarding" directive was issued. This event, in itself, could have undermined the entire process of trying to buy time for a diplomatic decision, and in so doing cause an inadvertent confrontation. We also see Admiral Anderson oversimplifying and using rhetorical exaggeration to advance the navy's capabilities. He cantankerously argues that the navy is in charge and that "we know how to run a blockade." This boasting also hindered the input process to the executives by presenting biased information on the Navy's capabilities verses impartial balanced input. Both Navy Admirals used their power and influence to taint objective analysis of the problem. This can be seen by their control of the overall operation and in the theater of operation. They were able to effect the directives that carried out the orders from the President

[143] Blight and Welch, p. 64.

and the Secretary of Defense. This interference further complicated the crisis and potentially placed the country at risk of nuclear war. Lastly, Admiral Anderson may have been too busy worrying about his bureaucratic interests to understand the bigger picture and the international pressures the President was encountering. Ultimately, his focus was out of synch with the President, and may have resulted in a premature confrontation. This analysis concludes that the parochial interests of the navy's chain of command, processing directives along routine channels to subordinate units, threatened a premature confrontation with the Soviet Ships. This inattentive interpretation of presidential intent underscored the political objectives of the policy.

2. Summary

Organizational behavior in this crisis could have had a catastrophic effect on its outcome. The President and Secretary McNamara were plagued throughout the ordeal with the probability one of the organizational subunits would inadvertently trigger a confrontation, thus escalating tensions with the Soviets. They also feared that if this happened they would lose complete control of these organizations, and leaving them unable to effect an outcome. Although these organizations were designed to extend the rationality of man in making decisions, they have become too big and complex over the years. With this growth their loyalty shifted to their interests first, and their culture precipitated economy. The end result was that organizations functioned according to standard patterns of behavior, and dominated the outputs of government. This in effect diluted choices given to policymakers. The failure by the Navy to control ASW forces pursuing Soviet subs during the crisis, threatened to provoke a premature confrontation. Their structural rigidity seemed inappropriate in dealing with the sensitivity of the crisis and justified closer controls. The navy's interests and thus their activity became detached from the crisis objectives of what the White House was trying to accomplish. Also, the failure of the navy leadership to articulate and enforce presidential intent while conducting the blockade threatened the diplomatic process, and created conditions for a premature confrontation. Bureaucratic actors prioritized objectives and controlled information to support navy interests, thus undercutting presidential objectives. I attribute these failures to organizational behavior impediments within the Navy.

Throughout the crisis Kennedy, McNamara and Khrushchev all had grave concerns about losing control of the situation to the natural occurrences between their large organizations.

These leaders understood that these organizations would take on a life of their own and impede their attempts to diplomatically settle the affair peacefully. It benefits a President to have a good grounding in the dynamics of organizational behavior. As this section exposits, it is especially important during a crisis situation when you are receiving input from large organizations that are unaccustomed to working under uncertain conditions. He must keep their input in perspective, but must also realize they control his relative power to project his policies. Most importantly, these organizations will synthesize his directives as pertains to them, perhaps changing original intent along the way.

IV. THE YOM KIPPUR CRISIS

A. THE COGNITIVE DECISION-MAKING OF HENRY KISSINGER

"Given the capabilities of modern communications and control systems, this compression of decision-making time is likely to characterize most future crisis and will have to be a fundamental consideration in crisis management."

Barry M. Blechman and Douglas M. Hart, "The Political Utility of Nuclear Weapons: The 1973 Middle East Crisis," *International Security*, Vol. 7, No. 1 (Summer 1982), p. 151.

1. Background

Eleven years after the Cuban Missile Crisis, the United States confronted the Soviet Union in another crisis, which saw U.S. forces put on worldwide DEFCON III alert.[1] This was a signal in response to the Soviet threat to introduce ground troops in to the Middle East conflict to support her client states, Egypt and Syria. What is unique about this crisis is that the confrontation between the two superpowers surfaced as a result of the conflict between the client states of both sides. At this time, the Nixon Administration's policy towards the Soviet Union was one of deterrence and coexistence, both containment and détente.[2] The Nixon-Kissinger policy of détente aimed at persuading Soviet leaders to set aside ambitions to make advances elsewhere in the world at the expense of the west.[3] This U.S. strategy was a complex mixture of conciliation, accommodation and positive inducements on the one hand, and military deterrence on the other.[4] In the long run, both hoped this policy would "gather momentum and longevity" within the Soviet Union and sow the seeds of the communist regime's demise. This, they hoped, would create a new paradigm of relations favoring the U.S.[5]

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[1] Five defense readiness conditions (DEFCONs) exist that are used to heighten the posture of US military forces. DEFCON I indicates war. Although, some parts of our strategic forces, such as the Strategic Air Command (SAC) and parts of the nuclear submarine fleets are regularly at DEFCON III, the alert taken on October 25, 1973 increased all forces up one level of readiness. *Department of State Bulletin*, Vol. 69, No. 1795 (1973), p. 617.

[2] Henry Kissinger, *Years of Upheaval*, (Boston: Little, Brown an Company, 1982), p. 238, also détente had been inaugurated ceremonially at the May 1972 Nixon-Brezhnev summit in Moscow.

[3] Alexander L. George, *Presidential Decisionmaking in Foreign Policy: The Effective Use of Information and Advice*, (Boulder, Colorado: Westview Press, 1980), p. 257.

[4] Ibid., p. 257.

[5] Ibid., Kissinger, p. 243.

The U.S. had a long-standing policy in the Middle East that demonstrated the importance they attached to maintaining stability in the region.[6] Kissinger remarked that the U.S. was "determined to resist by force if necessary the introduction of Soviet troops into the Middle East, regardless of the pretext under which they arrived." A Soviet military force in Egypt "might prove impossible to remove."[7] The U.S. pursued a "no victory-no defeat" policy during the war. This involved five major goals that were carefully balanced by Kissinger. First, to insure that Israel suffered no overwhelming defeat. Second, to avoid the possibility Israel achieved an overwhelming victory. Third, to find an end to the war that left the U.S. in a position as arbiter of future peace initiatives. The U.S. had to maintain credibility with the Arabs to see this through. Also, the U.S. had to make sure the Soviets did not emerge as champion of the Arab cause. Fourth, the U.S. was intent on preserving the sensitive détente relationship with the USSR. Finally, the U.S. wanted to prevent an escalation of the war into a direct superpower conflict.[8] The U.S. was highly sensitive to all parties because of the escalatory potential of the situation and its likely global repercussions.

Two key variables influenced why the U.S. had to balance support for her client state Israel with the needs of the Arabs. The first was that Israel could conduct a pre-emptive strike on her enemies in desperation.[9] This would have added a new twist to the conflict, one that would have had incalculable consequences, in the region if not the world. The second was oil. The Saudis introduced the idea to leverage oil production to punish states assisting Israel. This oil embargo went into effect on October 18. The threat of this embargo had significantly impacted the way the U.S. and its allies approached this situation, and may have caused delays in the delivery of military equipment to Israel. It also put tremendous strain on our NATO partnerships, especially with members who were more dependent on Middle East oil than was

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[6] Barry M. Blechman and Douglas M. Hart, "The Political Utility of Nuclear Weapons: The 1973 Middle East Crisis," *International Security*, Vol. 7, No. 1 (Summer 1982), p. 151.

[7] Kissinger, pp. 579-580.

[8] Scott D. Sagan, "Lessons of the Yom Kippur Alert," *Foreign Policy*, No. 36 (Fall 1979), pp. 161-162.

[9] David Schoenbaum, *The United States and the State of Israel*, (New York: Oxford University Press, 1993), p. 199, p. 202 – Golda Meir stated when the first C-5s arrived, "Thank God I was right to reject the idea of a pre-emptive strike!" See Edward N. Luttwak and Walter Laqueur, "Kissinger & the Yom Kippur War," *Commentary*, Vol. 58, No. 3 (September 1974), p. 38.

the U.S.[10] It was important for the U.S. to stand by Israel, but not so close that it weakened alliances with our partners and hindered future peace negotiations. Most importantly, it was essential for the U.S. global reputation that it did not back down or appear to be coerced by Soviet threats.[11]

Prior to this conflict in the Middle East, the Soviets had been given limited access to American technology, investments, and trade to bolster its ailing economy. Further, the Soviets and hoped to seek a SALT agreement. The Soviets were also happy to leave the Middle East *status quo* in place.[12] Egypt's President, Anwar el-Sadat and his regime were being threatened internally. This led him to assume the mantle of a nationalist platform to liberate territory lost to Israel during the 1967 war. He also colluded with Syria, encouraging them to fight for the Golan Heights. He expected this strategy of Arab nationalism to restore his popularity and ensure his political survival. The Soviets, after being informed of the Egyptian-Syrian decision to go to war, opted to support them with equipment in order to maintain influence in the Arab world.[13] The Arabs surprised Israel on Yom Kippur and inflicted heavy losses. The Israelis rebounded and pushed back the Syrians, then the Egyptians. As the Israelis threatened Damascus in the north, and the destruction of Egypt's Third Army on the southern front, the Soviets became desperate and were eager for the fighting to stop.[14] The credibility of their relationship with Arab states demanded large-scale support of their clients who were now facing a huge defeat.[15] This defeat would be their second in the region, and one that would be held against their global reputation. The Soviets pushed hard for a cease-fire to allow Syrian and Egyptian forces to remain in the territories gained in their initial attacks.[16] They were in a no-win situation. If the

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[10] Sagan, "Lessons of the Yom Kippur Alert," p. 175.

[11] Blechman and Hart, p. 153.

[12] John Spanier, *American Foreign Policy Since World War II*, (New York: Holt, Rinehart and Winston, 1980), p. 197. He describes the setting for the Soviets. They also limited support to North Vietnam to boost their relationship with Washington.

[13] Ibid. p. 198.

[14] Schoenbaum, *The United States and the State of Israel*, p. 206.

[15] Ibid., p. 198.

[16] Alexander L. George, *Avoiding War: Problems of Crisis Management*, (Boulder, Colorado: Westview Press, 1991), p. 360.

Soviets said no to a cease-fire they risked the repercussions in their relationship with the U.S., if they said yes to a cease-fire, they risked losing face with their clients.[17]

According to the agreed policy of détente with the U.S., the Soviets had failed to avert threats to peace in the Middle East by her actions to provide arms to the Arabs. In their desperation to minimize the damage they openly incited Algeria and other Arab states to join in the war, and encouraged Arab oil producers to cut off supplies to the west.[18] The Soviets had few options short of threatening direct military intervention in support of the Arab cause. They reacted by adapting a policy that reflected anxiety and dangerous loss of control.[19] This added to the complexity of the situation for the U.S. Besides a looming confrontation with the Soviets and tensions with the NATO Alliance, the U.S. was going through serious domestic problems. We were still engaged in the Vietnam War, and going through one of the most scandalous times in the history of the presidency. Vice President Agnew had just resigned, Nixon had just fired Archibald Cox and conducted the "Saturday night massacre" over Watergate, and OPEC had begun the oil embargo. Congress was putting enormous pressure on President Nixon with increased talk daily of impeachment.[20] Nixon was highly distraught and diverted, unable to fully commit to the crisis.[21] This may have influenced the Soviets' decision to threaten to deploy ground troops to Egypt. The combination of ambiguous military intelligence and Brezhnev's message created a crisis atmosphere in the White House.[22] Kissinger suggested that an American military response could be necessary, and the President empowered him to make such a decision.[23] Kissinger had several ideas as to how to handle our response. This section will focus on the individual decision-making dynamics of Secretary of State Henry Kissinger and

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[17] Schoenbaum, *The United States and the State of Israel*, p. 200.

[18] Luttwak and Laqueur, "Kissinger & the Yom Kippur War," p. 35.

[19] Sagan, "Lessons of the Yom Kippur Alert," p. 167.

[20] Kissinger, *Years of Upheaval*, p. 575. Eight impeachment resolutions had been submitted on Tuesday to the House of Representatives Judiciary Committee.

[21] Ibid., pp. 581-582.

[22] Sagan, "Lessons of the Yom Kippur Alert," p. 169. The US was receiving contradictory reports from the Soviets that the Israelis were still fighting and maneuvering on the Third Egyptian Army.

[23] Kissinger, *Years of Upheaval*, p. 586, Richard Nixon, *Memoirs*, (New York: Grosset and Dunlap, 1978),p. 938, Sagan, "Lessons of the Yom Kippur Alert," p. 169, Bernard Kalb and Marvin Kalb, Kissinger, (Boston: Little, Brown and Company, 1974), p. 490.

how he directed both the national security and the foreign politics of the United States during the crisis. I intend to examine two critical decisions that will highlight several features of his cognitive process.

2. Critical Analysis

By the end of Tuesday, October 23, the UN Security Council had passed Resolution 339, which reaffirmed the October 22 cease-fire and "urged" the combatants to return to the *status quo antebellum*. Israel and Egypt agreed to observe the cease-fire effective 7:00 A.M. local time, October 24 (1:00 A.M. Washington time). In addition, late on 23 October, Syria agreed to the cease-fire as well.[24] The focus was on the Israelis and their envelopment of the Egyptian Third Army in the south. Seven hours into the new cease-fire, the situation erupted with both the Egyptians and the Soviets blaming Israel for resuming its attack.[25] At this time Sadat sent an urgent message to Nixon pleading with him to intervene, even on the ground to force Israel to comply with the cease-fire. The previous evening the Soviets had issued an official statement warning Israel that the "greatest of consequences" would come about if it did not stop its aggression.[26] Both Israel and Egypt were blaming each other for violating the cease-fire and getting their superpower sponsors involved. This situation caused Brezhnev to call Nixon on the hot line and, ignoring any Egyptian violations, he accused Israel of breaking the cease-fire and curtly implied the U.S. had colluded in this action. Brezhnev urged the U.S. to move decisively to stop the Israelis.[27] Both superpowers continued to urge each other to enforce the cease-fire on their client states. At noon on 24 October, Sadat publicly requested both the U.S. and the Soviets send a peacekeeping force to the Middle East. The Soviets would obviously back this idea as a way to re-establish their presence in Egypt.[28] The U.S. sent a message to Sadat stating their lack of support for the combined force and concern, that, if "the two great nuclear powers be called upon to provide forces, it would introduce an extremely dangerous potential for direct great-

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[24] Kissinger, *Years of Upheaval*, p. 575.

[25] Ibid., p. 575.

[26] Ibid., p. 576.

[27] Nixon, *Memoirs*, p. 936.

[28] Ibid., p. 937.

power rivalry in the area."[29] At 9:00 P.M. Brezhnev sent a message that he had hard evidence against the Israelis. One hour later he sent another message urging the U.S. and the Soviet Union to dispatch military forces to the region immediately to enforce the cease-fire. If we did not agree to this proposal, the Soviets would consider acting unilaterally.[30] Kissinger states of the situation, "there was no question in my mind that we would have to reject the Soviet proposal. And we would have to do so in manner that shocked the Soviets into abandoning the unilateral move they were threatening – and from all our information, planning."[31] Kissinger next called a meeting of the Washington Special Action Group (WSAG) at the White House Situation Room.[32] The members of WSAG were Secretary of State Kissinger, Presidential Chief of Staff Haig, Secretary of Defense Schlesinger, Deputy Assistant to the President for National Security Affairs General Scowcroft, Chairman of the Joint Chiefs of Staff Admiral Moorer and Director Colby of the CIA. As a result of their deliberations Kissinger opted to increase our military readiness worldwide to DEFCON III.[33] This was chosen because of the short time period he had in which to send a powerful message to the Soviets. He also decided that going to DEFCON III might not be noted quickly enough by Soviet decision-makers to ward off their intended deployment already in the works. So he also alerted the 82nd Airborne Division, and redirected two aircraft carriers to the eastern Mediterranean.[34] Why did Kissinger opt to increase the readiness level of our forces to DEFCON III, which could take us to the brink of nuclear war with the Soviets? We must keep in mind that he is after a "high-quality" decision, and one that must be made in a crisis environment. Clearly, Kissinger was faced with making decisions in an environment characterized by value-complexity, multiple objectives and uncertainty. I propose that his beliefs and perceptions and the way he approached decision-making influenced him to

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[29] Ibid., p. 938.

[30] Ibid., p. 938.

[31] Kissinger, *Years of Upheaval*, p. 584.

[32] Ibid., p. 586.

[33] Ibid., p. 588. In Kissinger's book he always used plural instead of singular nouns when discussing the decision's made by WSAG. Research in other sources show that he welded great leverage as to what final decisions were made.

[34] Ibid., p. 589.

make this decision. It is my intent to explore the cognitive-influences that may have altered his perception of the global reality to make this decision.

One cognitive influence is described by the characteristics of attribution theory that portrays man as a "problem-solver." Kissinger attempted to discern the attributes of his adversary and its decision-making system, so as to get some control over the environment. Kissinger's job as Secretary of State was to understand with certainty the context of international relations as it pertained to U.S. foreign policy. He understood the importance of the Middle East and the influence of Arab oil around the world. He also knew that arrangements by both superpowers under the U.S.-Soviet détente policy would seek a non-expansionist role in the Middle East, or maintain the *status quo*. At the time the Soviets were enjoying the benefits of détente, which allowed them to purchase desperately needed grain and gave them access to other technologies.[35] The U.S. also knew that any regional negotiations for future peace would have to include the Soviets.[36] The Middle East would have to be a superpower solution. But, Kissinger had always suspected that the Soviets, deep down, had expansionist motives, a fact which he kept in mind.[37] He was aware that the Soviets were not necessarily interested in war in the Middle East, but he also knew that they were supplying the Arabs with weapons and advisors to maintain their foothold in the region. Their increase in effort to give both the Egyptians and the Syrians the newest weapons and advisors for training implicated them beyond limits of détente. After the Soviet message arrived detailing their intention to deploy troops to the region, he knew they were desperate and that their credibility was at stake. Kissinger noted that this was one of the most serious challenges to an American President by a Soviet leader.[38] Kissinger's style was that he was able to converse and openly describe connections between concept and behavior in foreign policies.[39] He shows his attempts to understand the Soviet's moves by framing their reaction in conceptual terms. This is brought out by what has already been described above with regard to several issues; one example is the oil embargo and its impact on our NATO partners.

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[35] Ibid., p. 204.

[36] Schoenbaum, *The United States and the State of Israel*, pp. 192,194.

[37] Henry Kissinger, *Diplomacy*, (New York: Touchstone, 1994), pp. 713, 738 and Kissinger, *Years of Upheaval*, p. 587.

[38] Kissinger, *Years of Upheaval*, p. 582.

[39] Richard Ned Lebow, *Between Peace and War*, (Baltimore, The Johns Hopkins University Press, 1981), p. 232.

He answers the question, "Why did the Soviets want to deploy troops?" by looking at the problem and coming to conclusions based on his beliefs of their expansionist ideology and credibility issues.

A cognitive impediment in this value-complexity situation is that Kissinger accepts this conflict as unavoidable. He feels obligated to make a decision with difficult trade-off choices based on his perception of the situation. This may have been the situation when he opted to signal the Soviets with an ultimatum of nuclear war, versus a less escalatory but more risky response. We can see that Kissinger used several cognitive aids in his decision. In Kissinger's memoirs he states this decision was a result of consensus by the WSAG. It does appear that he was a big proponent for an overwhelming signal to the Soviets, and pushed this agenda. One participant explained that the alert fit closely with Kissinger's approach to crisis management.[40] He stated that "the Secretary believed it was necessary to do something more dramatic, something which would get the attention of Soviet decision-makers because it was several times more alarming than their own action. The point, he stressed, was to do something unmistakably above the noise level, something that would make unambiguously plain how seriously the United States viewed the situation and, thus, how grave were the risks of not reaching accommodation."[41] Another cognitive aid was the use of historic analogies to arrive at his decision. Kissinger expresses this dramatic approach to crisis management in his account of the 1970 Jordanian crisis.

> In my view what seems "balanced" and "safe in a Crisis is often the most risky. Gradual escalation tempts the opponent to match every move; what is intended as a show of moderation may be interpreted as irresolution; reassurance may provide too predictable a checklist and hence an incentive for waiting, prolonging the conditions of inherent risk. A leader must choose carefully the issues over which to face confrontation. He should do so only for major objectives. Once he is committed, however, his obligation is to end the confrontation rapidly. For this he must convey implacability. He must be prepared to escalate rapidly and brutally to a point the opponent can no longer afford to experiment."[42]

The parallel with the Yom Kippur Crisis is obvious as to the impact it had on his decision.

Another aid, which is a mixture of the above examples and is representative of Kissinger's ability to describe connections between concepts and behavior, was his use of his

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[40] Blechman and Hart, "The Political Utility of Nuclear Weapons: The 1973 Middle East Crisis," p. 145.

[41] Ibid., p. 145.

[42] Henry Kissinger, *White House Years*, (Boston: Little, Brown, 1979), p. 622, and Kissinger, *Years of Upheaval*, p. 587.

own ideology and general principles as guides to action. After careful analysis of the situation, reflecting back on the strategy over the past four years, he says "Egypt would be drawn back to the Soviet orbit, the Soviet Union and its radical allies would emerge as the dominate factor in the Middle East. China and Europe would be shocked by the appearance of U.S.-Soviet military collaboration in so vital a region. If the joint effort collapsed and turned into a U.S.-Soviet crisis – as was probable – we would be alone."[43] Based on his ideology and general principles, we can see from the above examples his application of these beliefs in formulating a correct strategy. Kissinger had some very strong convictions, which he certainly argued in a very convincing way to the WSAG. He also wielded exceptional power as the de facto executive in this crisis and the primary foreign policy actor for the country.[44] We are reminded that premature use of these aids can cause one to restrict information flow to him, hindering a broader look at the problem. It appears that Kissinger was in a time constraint for a decision, and because of his expertise in this area he was able to quickly take the President's intent, consult WSAG, and make a well-qualified decision. Due to the secretive nature of the WSAG meetings and the lack of published transcripts we can make assumptions to create an understanding of these decisions.

The use of heuristics is inevitable and a natural tendency to simplify the complex. Another influence that could have affected Kissinger in his decision was his use of the "representiveness" heuristic. He may have developed a stereotype on the mentality of the Soviets over the many years in working in the foreign policy circles. Based on these stereotypes, he and Nixon devised assumptions to develop a new détente strategy for the Administration. These prefabricated assumptions and stereotypes could have altered his ability to calculate the risks the Soviets were willing to accept. Thus, his decision to go to DEFCON III was both overdone and overly risky to the negotiation process.[45] Another human rule-of-thumb that could have influenced his decision is the "availability" heuristic. It is highly likely from the many

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[43] Kissinger, *Years of Upheaval*, p. 584.

[44] At this time Congress had not yet ratified incoming Vice President Ford.

[45] Kissinger, *Years of Upheaval*, p. 586, and Nixon, *Memoirs*, p. 938. At the time of this crisis Nixon was fully consumed by Watergate. He could only pay cursory attention to the situation in the Middle East. Nixon rarely attended WSAG meetings, and Haig and Kissinger made efforts to show that he was still in control by having the meetings in the White House Situation Room. Nixon would be selectively briefed on the situation when final decisions needed to be made, but Kissinger and Haig managed to shield him from the hourly and daily debate sessions that were taking place. Basically, Nixon had suggested the alert, or something, to get the Soviets attention. Nixon had suggestions, that despite distractions, he was still somewhat engaged.

years of experience in foreign policy - devising the policies of détente and conducting negotiations - Kissinger developed a sort of self-fulfilling prophecy for the Soviets. He understood their grand strategy of expansionism and the way in which they conducted business. His recitation of his experience during the 1970 Jordanian crisis demonstrates that this left a lasting impression on him. Although Kissinger developed a framework for Soviet actions over several years and numerous experiences, he could have trapped himself in a paradigm that prevented him from seeing other complex probabilistic and predicting factors. This phenomenon may have influenced his risk calculation for the Soviet threshold to expand. It could have been possible that he underestimated the reluctance of the Soviets to lose worldwide credibility from another Middle East failure. Both these heuristic principles have the potential to significantly influence a decision-maker's judgement by creating a debilitating dependence on his own memory and personal experiences that prematurely make predictions about the situation he is encountering.

Dissonance-reduction bias is inherent to human behavior. This "consistency-seeking" can be applied to Kissinger as he processed information for decision-making. It appears that Kissinger's beliefs were well grounded from years of experience. His convictions as to how he thought the U.S. should react where assessed within a short period of time, unlike the two weeks Kennedy had in the Cuban Missile Crisis. It is much harder to avoid a strong tendency towards "consistency-seeking" when time is an issue. The best solution may be for the decision-maker to be an expert in the field of foreign policy with some period of time to analyze a decision with advisors. We can suggest that Kissinger probably recommended a course of action that reflected his beliefs, which were grounded in years of experience. He appears to have made a strong argument with WSAG to raise the readiness to DEFCON III.[46] Several members argued that the most significant aspects of the crisis were grounded in the ability to project conventional, not strategic forces, and that the residual effects of the nuclear alert would heighten their status.[47] The reported exchanges from the WSAG meetings suggest that "consistency-seeking" bias may have been present with Kissinger.

Stress is likely to have had an impact on Kissinger's decision-making process. Though this was a relatively short crisis, Kissinger was required to balance numerous international

[46] Blechman and Hart, "The Political Utility of Nuclear Weapons: The 1973 Middle East Crisis," p. 145.

[47] Ibid., p. 146.

relationships as both the "pseudo-President" and the Secretary of State. As stated above, the U.S. was going through unprecedented domestic political problems arising from the Watergate Scandal. The U.S. had several initiatives with the Middle Eastern countries and wanted to devise a balanced approach so as to maintain good relations. We wanted to create an environment that would foster the peace process with the U.S. in the lead. Kissinger quickly encountered the elements of the crisis in an environment fraught with domestic issues. First, there was the pressure to try to get the Israelis to abide by the cease-fire. Second, the surprise letter from Brezhnev threatening to deploy ground troops to Egypt. Third, the finesse required to convince Sadat that having two superpowers descend on Egyptian soil was a bad thing, and that, therefore, he needed to request a non-superpower UN force to monitor the cease-fire. Fourth, the outside pressures to keep Israel in check and prevent their destruction of the Third Army. Fifth, to maintain a semi-impartial relationship with Israel to win favor with the Arabs and improve the conditions for post-conflict peace negotiations. These conditions may have made Kissinger more vigilant as he shouldered a large part of the burden. He was very fortunate to have quality support from the members of WSAG.

We may also observe that Kissinger's initial perceptions were narrow or rigid when he received the Brezhnev letter. This may explain his strong stand on his agenda for action with WSAG. This may have been due to the pressure of the short timeframe in which to make the numerous sensitivities of the region, and the incredible risk to decide upon massive retaliation in an environment of uncertainty. In fact, we may observe that by committing the U.S. forces to DEFCON III he may have shifted the burden of the situation to the Soviets. This could have been a very dangerous move in light of the incalculable risks associated with nuclear escalation.

The second critical decision Kissinger made was to delay sending essential war supplies to the Israelis for several days. This decision supported his agenda to run a low-profile policy that would limit the damage to American relations with the oil producing Arab countries.[48] Although the most likely choice, the supposition that Kissinger was behind the delay in arms shipments, has been a subject of numerous scholarly investigations over the years. Edward N. Luttwak and Walter Laqueur conducted the most penetrating investigation with a critical analysis of several versions of the story circulating at the time.[49] By analyzing the accounts, testing them

[48] Luttwak and Laqueur, "Kissinger & the Yom Kippur War," p. 38.

[49] Luttwak and Laqueur, "Kissinger & the Yom Kippur War," pp. 33-40.

for internal coherence and against all other evidence, they derived a highly convincing argument that implicates Kissinger's responsibility for the delay. For the purposes of this analysis it is my intent to shoulder Henry Kissinger with this decision.

The war began on October 6. By the time the Israelis were able to rebound and turn the tide against the Arabs, they were in critical need of supplies. The Soviet reaction seemed to reflect Israeli success. They began to resupply both Syria and Egypt on a massive scale from as far away as Hungry and Yugoslavia. The Soviets also put 50,000 airborne troops on alert.[50] Israel faced the prospect of a new and threatening war of attrition. Simcha Dinitz, Israel's Ambassador to the United States, and his Armed Forces Attaché, General Mordechai Gur briefed Kissinger that Israel's losses to date had been staggering and totally unexpected.[51] The Israelis' fundamental strategy was to achieve rapid victory. To defeat Syria quickly and then shift forces to the Sinai and against the Egyptians. Though Israel was able to fight back successfully, they had broken neither the Syrian nor Egyptian Armies. Wednesday, October 10, was a critical day in the eyes of Israel and the United States. Although they had gained some ground against the Syrians, a tank offensive in the Sinai had failed, demonstrating that there would be no easy victory. It was also apparent that Israeli stocks would be exhausted within a few days. To continue a general offensive in the Sinai Israel would need a guarantee for resupply, allowing her to dip into her reserve stocks. At this point, stock levels would have a direct impact on the course of the war.[52] Also, at this point enormous leverage shifted to the U.S. gained tremendous leverage over Israel as the only country willing to resupply her in light of the current Arab oil embargo. Israel had suffered as many losses as the Egyptian's, and was now on the verge a bitter battle of attrition. She desperately needed planes and tanks. Kissinger agreed to let El Al planes begin picking up consumables and electronic equipment immediately. Israel's small fleet of seven aircraft would not be enough to handle heavy items, and for this Kissinger assembled a meeting of WSAG.[53] Dinitz also said that Meir was prepared to meet in secret with Nixon to plead for urgent needed support. Kissinger thought this would be a mistake during Israel's

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[50] Schoenbaum, *The United States and the State of Israel*, pp. 201.

[51] Kissinger, *Years of Upheaval*, p. 492.

[52] Luttwak and Laqueur, "Kissinger & the Yom Kippur War," p. 34.

[53] Ibid., p. 34.

critical time, and that they would not be able to keep the visit a secret, thus the U.S. would have to announce any major supply operation to Israel. This would most likely cost the U.S. her position with the Arabs and destroy any possibility of mediation.[54] At WSAG there were several concerns. Colby reported that Israel was doing well and that Israel was trying to gain maximum support from us before victory; as a sign of our support not so much for the war but for after.[55] Also, the Soviets had stepped up resupply to the Egyptians and Syrians, while surreptitiously encouraging other Arab states to join the fight.[56] It was 9 October and pressure was on the U.S. to arrange for a cease-fire to keep the other Arab states out of the fight. A prolonged war would only strengthen the Soviet position in the Middle East.[57] Kissinger thought that there would be no cease-fire unless Israel was perceived to be making gains. And, the Israelis needed tangible evidence from the U.S. to restore her confidence.[58] Kissinger felt that although some skepticism about Israel's supply status still existed within the group, Israel needed something substantial for both psychological as well as military reasons.[59] Kissinger took several options to Nixon. Nixon's feelings were made clear on this subject in his response to Kissinger: "The Israelis must not be allowed to lose." Nixon decided to speed the delivery of consumables and aircraft. Heavy equipment would not reach Israel until the war was over, but he stated we would guarantee to replace their losses; this would free up Israel from maintaining exorbitant reserve stocks during the battle.[60] This decision by Nixon was conveyed to the Israelis on that day – 9 October. But, it was not until 14 October that the forward end of the US air bridgehead, with a thousand-ton daily capacity, reach Israel. Between 9 and 14 October there were 6 days of foot dragging, which almost brought Meir to the point of nuclear preemption.[61] The medium used for

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[54] Kissinger, *Years of Upheaval*, p. 493.

[55] Ibid., p. 493.

[56] Ibid., p. 494. The Soviets were attempting to get Jordan involved in the war. William B. Quandt, *Decade of Decisions*, Berkeley: University of California Press, 1977), p. 177.

[57] Ibid., p. 177.

[58] Ibid., p. 177.

[59] Kissinger, *Years of Upheaval*, p. 495.

[60] Ibid., p. 495.

[61] Schoenbaum, *The United States and the State of Israel*, pp. 202.

this foot dragging was aircraft inavailability and bureaucratic politics. The Israelis did not have enough aircraft to conduct the resupply needed on a mass scale. Also, no insurance company would cover charter aircraft in a war zone. Haggling over this issue went on until 12 October when it was brought to Nixon's attention, and he stated in reference to our aircraft, "Goddamn it, use every one we have. Tell them to send everything that can fly."[62] This finally set the ball rolling for US military aircraft to conduct most of the resupply. Why did Kissinger decide to delay the vital resupply to Israel using the fog of bureaucratic maneuvering? I propose that his beliefs and convictions influenced his decision to follow a low-profile policy that would limit the damage to American relations with oil producing Arab Countries. Again, I will explore the cognitive influences that may have affected how he perceived this crisis and why he rendered the decision he did.

The characteristics of attribution theory may have influenced Kissinger to apply some control over the environment. From my research it appears Kissinger treated these countries as rational actors, and did not necessarily focus on specific individuals within the country. Kissinger also understood that U.S. sponsored negotiations in the Middle East had been "a wasteland of abortive plans, "interim" solutions, and countless ad hoc proposals."[63] The Egyptian policy of non-negotiation with Israel was a frustrating issue in any peace negotiations. In early attempts for negotiations the U.S. had gotten some concessions from the Israelis to give up territory in return for commitments from the Egyptians, but the Egyptians would only offer vague and heavily qualified promises. One of the events which effected Middle East negotiations was after the 1970 defeat of the Egyptian forces, the U.S. dragged their feet in halting Egyptian violations of the terms of the agreements, thus allowing them to seize back some of their land. The U.S. had decided to buy-off Israeli demands for enforcement of the cease-fire lines by offering them compensation in the form of military equipment. The Egyptian disregard for the 1970 cease-fire would harden Israel's resolve for future negotiations. Prior to October 1973, in an effort to dissuade the Israelis from breaking the cease-fire first, Kissinger worked and received commitment from Israel that they would not launch a pre-emptive strike.[64]

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[62] Nixon, *Memoirs*, p. 927.

[63] Luttwak and Laqueur, "Kissinger & the Yom Kippur War," p. 38.

[64] Ibid., p. 38

At the outset of the war Kissinger also had confidence that the Israelis would fight any war against the Arabs as they had done in the past, winning an early victory. As the war broke out and the inevitable results of another Arab defeat solidified, Kissinger felt that the humiliated Arabs would assume a position of defiance even more extreme than in the past.[65] This would result in a more hardened stalemate between the two countries. At this time Kissinger took the view that the U.S. should avoid actions which might intensify Arab hostility. As a result, the Israelis would only receive limited assistance, and would be forced to accept a cease-fire that left the Egyptians in control of a small piece of land they had won at the outset of the war.[66] One of the US goals during the conflict was to insure U.S. position to arbitrate for future peace negotiations. As a result of these past experiences and historic trends in the area, Kissinger decided that if American diplomacy were going to succeed, we would have to break the stalemate.[67] Looking at Kissinger as a "problem-solver," he certainly set out to understand the environment and the outcomes of social situations amongst the players. Although he treated each country as a rational actor, he was willing to make adjustments for a given set of circumstances.

Another cognitive impediment that may have influenced his decision is the value-complexity environment, characterized by complexity and uncertainty Kissinger was forced to work in. It appears that he had an agenda, and in an effort to execute this he opted to exploit the ambiguities of bureaucratic politics to cover his delay in using U.S. military airlift. So, his solution in dealing with value-complexity was to satisfy all competing values by an effort to initially prevent action and stall the resupply. In this type of crisis environment a decision-maker may use several aids to assist him in his choice. It appears that Kissinger relied upon ideology and general principles as guides for action. During Nixon's first term, Kissinger created an ideology for the conduct of détente. Both he and Nixon came together on policies and strategies because of similar perceptions of the national interest. This may explain the initial formulation of Kissinger's agenda after Nixon had told him that deep down he wanted to impose a

[65] Ibid., p. 39

[66] Ibid., p. 39.

[67] Ibid., p. 39.

comprehensive settlement in the Middle East during his term in office.[68] This early exchange may have led Kissinger to believe he had authority to execute his plan. He may have also felt that with all the past frustrations in Middle East negotiations, this was the right time to exploit the conflict and execute the initiative. This motive then leads us to examine his application of beliefs and correct strategy. On October 9 initial reports to WSAG by William Colby, Director of the CIA, were that Israel could still fight for another two weeks. Kissinger knew the U.S. would have to support Israel at some point in time, especially as the Soviets were picking up their resupply pace. Kissinger still had faith that the Israelis could achieve victory, and he new they had large reserves which would provide supplies for essential state security. Here may lie the development of his strategy. The Israelis were given Nixon's word on October 9 that the U.S. would replace all their used reserves in view of how long it would take to get heavy equipment.[69] If their reserve could now be diminished because of this commitment, then they would become dependent on the US and its promised resupply of material. So, as Israel's pursuit of the momentum of their offensive began to deplete their reserves, the issue of resupply took on greater importance. Now that Kissinger had a strategy to follow, he only need execute it by manipulating the bureaucratic "fog" to the end he sought to achieve. These cognitive aids served to help Kissinger in making his decisions. The question is did he resort to these aids too early and thus limit his flow of information to make a more in-depth decision? This may have been the case if we look at when Nixon intervened to get the resupply going and Golda Meir stated as the initial air bridge arrived on October 14, "Thank God I was right to reject the idea of a pre-emptive strike!" she told herself.[70] One other statement that reflects Kissinger's personality and where he felt Israel fit in the big picture occurred when he coordinated a cease-fire without consulting Golda Meir. After it was done he went to inform her with this report, "In the final analysis, to put it bluntly, the fate of small countries always rests with the superpowers, and they

[68] Kissinger, *Years of Upheaval*, p. 202.

[69] Nixon, *Memoirs*, p. 927. In light of Nixon's growing impeachment situation it appears that Kissinger was able to manipulate the strings that initiated the resupply. As this process was delayed for several days and the Israelis were getting desperate, it finally came to a head, and Nixon was the only one that could break through the bureaucratic politics and demand the resupply take place. Nixon was again not fully tracking the crisis. As demonstrated by his memories, he was constantly in the middle of serious allegations and, legal procedures, being completely diverted; and only when salient events or final decisions needed his purview did he make a decision. Nixon supported the Israelis, but was unable to see through his verbal commitment to Meir immediately.

[70] Schoenbaum, *The United States and the State of Israel*, pp. 202.

always have their own interests to guard."[71] In the end, Kissinger did not want the Israelis to be defeated, but the U.S. could not afford for them to have a decisive victory. These objectives were achieved and as a result of expert diplomacy, he was able to maintain U.S. supremacy over peace negotiations.

Another cognitive impediment that could have influenced Kissinger is his use of the "representiveness" heuristic. As described above in the recent history of the Middle East peace negotiations, Kissinger may have formulated perceptions that were based on stereotypes of those countries or actors involved. By examining his logic behind the decision to withhold resupply shipments to Israel, we see Kissinger executing a strategy based on his desire to get the Israelis and the Arabs to come to the peace table. He stereotyped the Israelis as reluctant to give up territory to the Egyptians vague and heavily qualified promises. After the 1970 cease-fire debacle, Israel would prove to be more hardened in their resolve to negotiate. Kissinger also had great confidence in Israel's ability to repel any Arab attack. This proved to be an overestimation, however, and one that cost the Israelis dearly in the beginning of the war. Kissinger had also overestimated the Israeli's ability to pre-empt. The Israeli government had already decided that they could not afford the diplomatic costs of attacking first.[72] On the Arab side of the equation, the Egyptians had already received one defeat and were about to get a second. Whatever humiliation they felt at losing to the Israelis the first time would be compounded by a second defeat. Kissinger stereotyped their reaction, that they would even become more hardened after a second loss. He used his stereotypes of these rational actors to devise his American foreign policy strategy. Kissinger's use of this "representiveness" heuristic could have led to serious errors in prediction because it leads one to select outcomes off salient information, regardless of known probability information. Essentially, he made his decisions based on how he thought these rational actors would react.

Kissinger also used the "availability" heuristic to make his decision. We have already analyzed the reasons for why he selected his foreign policy strategy. We observed that Kissinger's recent experiences from the 1970 war and cease-fire, and the efforts to negotiate treaties up to the present, caused a solidification of his beliefs. This use of personal experiences

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[71] Kissinger, *Years of Upheaval*, pp. 538-539.

[72] Luttwak and Laqueur, "Kissinger & the Yom Kippur War," p. 38.

to devise foreign policy for the United States, versus recognizing probability data may have given him a predictable bias. However, it was dependent on his own memory as he opted to possibly not limit his analysis from other sources.

Dissonance-reduction bias theory may be seen in several areas where Kissinger may have conformed incoming information to his beliefs. Kissinger devised a foreign policy strategy to deal with the Middle East Crisis that was consistent with his beliefs. He wanted the U.S. to play a key role in mediating a peace settlement in the region, thus giving us a position of dominance and influence. Although he received a range of good policy options from the WSAG, he still opted to manipulate those aspects of the crisis he felt were essential to U.S. interests, even if he pushed the boundaries of Nixon's agreement with the Israelis. For example, he exploited the non-essentials of the agreement to his own needs by stalling the resupply effort. First, he made the Israelis come to the U.S. with their small fleet of aircraft to pick-up resupply. He then tried to arrange for charter aircraft to assist, but no insurance companies would cover them in a war zone. Next he attempted to coordinate a transload point in the Azores, but this fell through because of the oil embargo. He then continued to work within the bureaucratic "fog " of the State Department and the Defense Department to bog down this initiative. As suggested by Matti Golan, Kissinger was a master of duplicity, but his victims included himself. He willfully misread Soviet intentions to stall for time until Nixon was able to take the helm of the crisis.[73] It appears that Kissinger was locked on to his own agenda and was willing to conceal, through a masterful ploy, his effort to see it through to completion. This was a very dangerous move, and one that not only went against the President's intent, but also took advantage of the President during this sensitive time.

Another impediment that has already been brought out is that Kissinger expected other states to behave as rational actors. Graham Allison observes that "his style of analysis is representative of a broad stream of scholarship concerned with the foreign and military policy of the United States and other countries. Kissinger focuses primarily on national character, psychology, and preconceptions in explaining failures of American foreign policy."[74] Allison also notes that "some analysts employ the basic model (in one of its forms) essentially as a *norm*.

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[73] Schoenbaum, *The United States and the State of Israel*, pp. 203.

[74] Graham T. Allison, *Essence of Decision*, (Boston: HarperCollins Publishers, 1971), p. 25.

Actual events are then explained (and criticized) as approximations to choices expected by the classical model. Kissinger, Kennan, and to some extent Hoffmann, rely on this variant."[75] The downside to this approach is that it may have caused him to ignore the play of complex organizational dynamics and broader political forces in these governments. This is apparent when he deals with the Soviets. It appears Kissinger analyzes his opponent as a single actor, by applying the national interest of the opponent as the basis to understand and predict their behavior. This force was at work when he created détente during his earlier peace negotiations in the Middle East, and is rife in his wide range of written articles and books on this subject then we can observe this behavior.

The stress of the crisis was another condition that may have influenced Kissinger. As the Israelis continued to fight an enemy receiving increasing support from the Soviet Union, Kissinger saw the potential for tensions to escalate toward a superpower confrontation. The conflict was quickly becoming a high-stakes international crisis, especially with the OPEC threat of an oil embargo and the exposure of the U.S. effort to assist Israel. With the pressure of having full control of the foreign policy situation in Nixon's absence during a critical time in the Watergate Scandal, Kissinger may have been both more vigilant and vulnerable in his decision-making. Kissinger understood the gravity of the situation, knowing that on the other side, supporting her Arab client states, were the Soviets. Kissinger makes this statement after he directs the alert, reflecting how he sees the vulnerability of the U.S. in the international arena in light of Nixon's situation: "We are at a point of maximum weakness but if we knuckle under now we are in real trouble."[76] It appears that Kissinger was not afraid to be tough with all parties in the conflict, even the Israelis. He was very conscious of the global image and reputation of the United States portrayed throughout this ordeal. Further, there was the worry that he and the U.S. would be tested by the Soviets in this crisis. His negotiations with the Soviets would then always remain stern, as both he and Nixon agreed that the U.S. must never seem afraid to stand up to them. Kissinger realized that because of this potential for the Soviets to see vulnerability in U.S. actions, he would have to be more sensitive to any moves taken by them and respond appropriately. Stress was also present due to the escalatory nature of the situation and the need to work and make decisions in an uncertain environment. Because of these circumstances we

[75] Ibid., p. 37.

[76] Kissinger, *Years of Upheaval*, p. 589.

may think it careless for Kissinger to have played a game with the resupply to Israel. In the midst of the U.S.'s client state fighting Soviet client states, and with the knowledge that Israel had taken great losses, why would Kissinger attempt delay material, which threatened Israel's survival to the point that she was willing to pre-empt? Why would Kissinger risk valuable time and ignore the Soviet's increased support to the Arabs, giving them an advantage, in order to set the stage for his strategy for peace negotiations? Three negative symptoms of stress that may have influenced Kissinger are impaired attention and perception, increased cognitive rigidity, and a shortened and narrowed perspective. We see remnants of these in Kissinger's decision to both impede the resupply and ignore information on the Soviet's resupply of the Arabs. He stood fast by his agenda, manipulating the environment to support it. One might interpret Kissinger's rigidity to his supreme confidence in his ability to call the shots for U.S. foreign policy. His obstruction of Nixon's order to resupply the Israelis became the means for him to execute what he personally felt was the correct solution. This set of symptoms may have been caused by the incredible responsibility placed on Kissinger, to the extent that following his agenda may have offered an easy way to manage decisions in this case. Stress influenced Kissinger in two ways in this section. One, it appears to have made him more vigilant because he understood both the stakes of a Middle East conflict and a Soviet perception of U.S. vulnerability. Second, it appears that the pressure of this value-complex, multiple objective and uncertain environment may have forced Kissinger to focus on his agenda, therefore limiting his openness to other inputs. More openness to input could have given him a much more balanced and broader frame of analysis in which to consider his decision.

3. Summary

This section devised a cognitive model to be used for looking at a policymaker's decision-making process. It then demonstrated the utility of this type of a critical analysis process on three decisions President Kennedy made during crisis' conditions and two decisions made by Secretary of State Kissinger. Further, it emphasized the significance of this procedure and the importance of cognitive influences on the decisionmaker.

As the policymaker comes to office and transforms the decision-making system to support his needs, nothing prepares him to deal with a crisis situation. As leaders create their systems in an environment characterized by routine, they fail to take into account the fast-paced

and fluid environment of a crisis. At this point a large burden shifts to the President as a unitary decisionmaker to take charge and direct action. The pressure and element of control is immense, as he sets the stage for how the Administration will deal not only with its adversary, but the entire scope of a crisis. At no other time in history have the personal preferences and influences of this unitary actor been so apparent as to their affect on the future of our society. This section allowed us to "peel back the onion" to discover the decisionmaker's cognitive reality and what influenced it, as he pursued a quality decision.

B. WSAG AND GROUP DYNAMICS

1. Background

During the Yom Kippur Crisis the group that advised the President, or, in this case, Secretary of State Kissinger, was the Washington Special Action Group (WSAG). Some scholars have noted it as the National Security Counsel (NSC).[77] The group consisted of Secretary of State Kissinger, Presidential Chief of Staff Haig, Secretary of Defense Schlesinger, Deputy Assistant to the President for National Security Affairs General Scowcroft, Chairman of the Joint Chiefs of Staff Admiral Moorer and Director Colby of the CIA. They convened on the night of 24 October at 10:40 P.M. at the request of Kissinger in response to a letter from Brezhnev to President Nixon. This letter sparked the crisis by presenting the U.S. with a threat and ultimatum. It was "the most serious challenge to an American President by a Soviet leader, from its peremptory salutation, 'Mr. President,' to its equally peremptory conclusion demanding an 'immediate and clear reply.'"[78] An agreement was quickly reached by the members that the first step must be to slow down the Soviet timetable. This suggested an American written reply that was conciliatory in tone but strong in substance. There was also a consensus that this "would have no impact unless it was backed up by some noticeable action that conveyed our

[77] George, p. 155.

[78] Henry Kissinger, *Years of Upheaval*, pp. 583-584.

determination to resist unilateral moves."[79] It was noted that any tangible response would have to reach Moscow before the written reply.[80]

In contrast to EXCOM during the Cuban Missile Crisis, WSAG was smaller and had less time to make a high-quality decision. The group was notified and convened at 10:40 P.M., and had made a decision for action by 11:41 P.M. There are no records or tapes of what transpired during the meeting, only individual accounts that attempt to speak from a group perspective. As the WSAG assembled, its members quickly realized they would have to make a high stakes decision very quickly. Their response would have to head off a Soviet deployment of ground troops to Egypt the next morning so as to avoid the more dangerous potential for a superpower confrontation.[81] Research has shown that WSAG overlooked several critical factors that may have influenced their final recommendation. I propose that impediments of group dynamics influenced their decision-making process. In this section I will conduct a critical analysis using the group dynamics model to highlight crucial elements of WSAG's decision-making process.

2. Critical Analysis

When WSAG met they considered several options for action. The conditions surrounding the situation reflected the highly fluid environment that was quickly gaining momentum. They also had a very short timeline imposed on them for action. This constraint was a result of intelligence indicators that pointed to Soviet preparations for an early morning ground entry into Egypt. It was clear to WSAG that they would have to send a strong message to shock the Soviets from pursuing this unilateral move.[82] The group considered the salient input from intelligence sources who reported: 1) 23 Soviet attack submarines tracking U.S. ships in the Mediterranean; 2) the Soviets had ceased resupply to Egypt and Syria to reconfigure eight An-22 transport planes for airborne alert forces; 3) a Soviet ship was being monitored for nuclear cargo, possibly warheads for SCUD missiles already in Cairo; 4) an increase in Soviet message traffic to alert units; and, 5) reports that aircraft were being loaded. All of this information caused

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[79] Ibid., p. 587.

[80] Ibid., p. 587.

[81] Members were aware of the time difference in the Middle East to Washington, D.C. and that the Soviet troop movement would more than likely take place in the morning of 25 October.

[82] Ibid., p. 584.

serious concern within the group.[83] As one participant put it, "They [the Soviets] had the capability, they had the motive, and the assets (i.e., transport aircraft) had disappeared from our screens."[84] Another significant factor weighing on the group was the lack of a comparable U.S. conventional presence in the area.[85] According to Chief of Naval Operations Elmo Zumwalt's account, "Admiral Moorer made the point at the White House that we would lose our ass in the eastern Med under these circumstances."[86] As an additional signal, and to cover for action by increasing U.S. presence into the area, they later decided at 12:20 A.M. to alert the 82nd Airborne Division, three additional aircraft carriers and a task force to move at full speed to the Mediterranean. WSAG decided the alert might not be picked up quick enough by Soviet decision-makers and wanted to leave no doubt.[87]

Another strong consideration that came from WSAG's decision was that they interpreted Brezhnev's letter as a direct threat to the U.S. that must be responded to. This implied threat, coupled with current Soviet activities, called for a decisive and dramatic American response to forestall any unilateral Soviet introduction of ground forces into the region.[88] An alert would also serve Kissinger's needs. It would provide him with cover for action to get the Israelis to stop fighting because it had evolved into a superpower issue. He also considered it safer to err on the side of overreaction than to falter on the side of inadequacy.[89] His concern was that Soviet intervention would threaten Israel's national survival and U.S. global prestige. This move would also give the Soviets a position of advantage in any sort of peace negotiations in the Middle East. He also felt that the U.S. generally needed to be firm in the face of any threat.[90] It

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[83] Alan Dowty, *Middle East Crisis*, (Berkeley: University of California Press, 1984), pp. 274-275, Barry M. Blechman and Douglas M. Hart, "The Political Utility of Nuclear Weapons: The 1973 Middle East Crisis," *International Security*, Vol. 7, No. 1 (Summer 1982), p. 144, Raymond L. Garthoff, *Détente and Confrontation*, p. 425.

[84] Blechman and Hart, "The Political Utility of Nuclear Weapons," p. 139.

[85] Ibid., p. 145.

[86] Elmo R. Zumwalt, Jr., *On Watch*, (New York: Quadrangle, 1976), p. 446.

[87] Kissinger, *Years of Upheaval*, p. 589.

[88] Blechman and Hart, "The Political Utility of Nuclear Weapons," p. 150.

[89] Ibid., p. 172, Dowty, *Middle East Crisis*, p. 275.

[90] Ibid., p. 145, Scott D. Sagan, "Lessons of the Yom Kipper War," *Foreign Policy*, No. 36 (Fall 1979), p. 171.

appears that this was his position throughout the meetings as reported by several sources. Another factor that lead WSAG to assume a firm position and a dramatic signal was their perception that the Soviets thought the U.S. was vulnerable and unable to act decisively because of the Watergate scandal.[91] This also appears to be the position of Secretary of Defense Schlesinger when he commented to the press.

> I think that it was important in view of the circumstances that have raised a question about the ability of the United States to react appropriately, firmly, and quickly, that this certainly scotched whatever myths that may have developed with regard to that possibility.[92]

The group also had to consider domestic and global responses to the alert. As they discussed their decision, they felt that the alert could be kept quiet for a few days until events had a chance to cool down.[93] They realized that immediate public disclosure could threaten any chance for a Soviet retreat to a new position with minimal loss of prestige or credibility. Also, any disclosure would jeopardize the U.S. position in the Middle East and future negotiations by forcing them to publicly acknowledge U.S. support for Israel. This would surely push the Arabs away from the U.S. and further into the Soviet embrace. Included in the U.S. diplomatic response was a clause that would allow a small token force of observers, in lieu of ground forces, to monitor the cease-fire. Another diplomatic message went out to Sadat to prompting him to rescind his original request for U.S. and Soviet ground troops to deploy to Egypt. The message emphasized the superpower confrontation about to take place on Egyptian soil, and pushed for him to request UN peacekeeping forces.[94] This would abolish any Soviet cover for action.

Although the WSAG decided on a DEFCON III alert, neither civilian nor military authorities believed that escalation to nuclear war was likely.[95] As Kissinger stated in his press conference, this decision served both to stress the dangers of confrontation and to emphasize the

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[91] Sagan, "Lessons of the Yom Kipper War," p. 170, Dowty, *Middle East Crisis*, pp. 274-275.

[92] Ibid., p. 173.

[93] Scott D. Sagan, "Nuclear Alerts and Crisis Management," *International Security*, Vol. 9, No. 4 (Spring 1985), pp. 125-128. Admiral Moorer issued orders for DEFCON III "with minimum public notice." Also, the alert was at a relatively low level by the central authorities and was executed in a relatively *pro forma* fashion by the military commanders.

[94] UN peacekeeping forces do not include forces from the five permanent members.

[95] Sagan, "Nuclear Alerts and Crisis Management," p. 128.

importance that the U.S. perceived in this situation. Blechman and Hart observe that "these actions constituted manipulation of the risk of nuclear war; they both drew attention to the ultimate dangers of confrontation and advanced U.S. preparations to fight a nuclear conflict."[96] Kissinger states of the U.S. signal to Soviet decision-makers –

> "If you persist in your current activity, if you actually go ahead and land forces in Egypt, you will initiate an interactive process between our armed forces whose end results are not clear, but which could be devastating. Moreover, the Unites States feels so strongly about this issue that it is prepared to participate in this escalatory process until our objectives are achieved. The United States is prepared to continue escalating the confrontation up to and including a central nuclear exchange between us, even though we understand that the consequences of such an interaction potentially are "incalculable."[97]

In the final analysis, the decision did achieve the desired reaction from Moscow. It confirmed the Soviets had intended to land ground troops in Cairo. Reports the next morning showed that a Soviet troop transport had landed at Cairo West airfield, but had also returned almost immediately still fully loaded with troops.[98] Another reaction from Brezhnev was a message he sent to Nixon the next morning stating that the Soviets would only send seventy "representatives" to observe the cease-fire.[99]

In order to begin an analysis as to why WSAG made their decision to go to DEFCON III, it is important to consider the size constraints of the group. WSAG was small, with only six statutory members. This size would provide fewer diverse options and limit the range of values, beliefs and attitudes. This would also, however, reduce WSAG's level of knowledge and analytical skill used to make quality recommendations. Also, once recommendations began to surface, the small size would provide few opportunities for sub-grouping and inter-group conflict. This would directly affect the overall debate on the issue, and prevent any further scrutiny of other options.

Another impediment that arises in this case was the very nature of the situation WSAG members found themselves in. A fast-paced, high stakes environment exerts intense cohering pressure on a group. Though this crisis was for a relatively short period of time, the need to make a high-quality decision rapidly required members to work as a team for a consensus

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[96] Blechman and Hart, "The Political Utility of Nuclear Weapons," p. 146.

[97] Ibid., pp. 146-147.

[98] Blechman and Hart, "The Political Utility of Nuclear Weapons," p. 126.

[99] Sagan, "Nuclear Alerts and Crisis Management," p. 127.

decision. The members arrived at the meeting with little preparation to cover all alternatives and their consequences. This increased their dependency on each other, to share knowledge and expertise. Kissinger helped the group by immediately consulting country experts and members of the JCS. By the fact that the group became more cohesive in this short period of time is indicative of some level of cohesive psychological pressure. The residual effects of this may have been that they were not fully aware of the greater risk their decision entailed. This conclusion is possible in light of their disregard of potential counter moves by the Soviets to answer our DEFCON III. Scott Sagan suggests that tensions can escalate in a severe crisis by moving toward nuclear exchange. This seeming inevitability may tempt the weaker side to pre-empt. He also suggests, as we saw in the Cuban Missile Crisis, that organizational inadvertency can cause premature conflict. Another point he makes is that the possibility of a conventional attack on opponent strategic forces can be misinterpreted as a strategic initiation, thus the chance of premature nuclear missile use. Lastly, he points out that if control of nuclear weapons is decentralized to local commanders, they may prematurely launch if their situation becomes dangerously ambiguous.[100] Although these views are extreme, they offer a line of logic that does not appear to have been discussed at the meeting. Was this risky? Yes, but as it turned out the Soviets did not counter the alert.[101] Also, due to the short decision timeframe, access to lower level expert analysis was limited. This may have created a tendency to overlook critical uncertainties because of a reliance on oversimplified summaries from which to base their decisions. Another critical uncertainty the group missed was their assessment that the alert could be kept quiet from the public. This demonstrated their unfamiliarity with the magnitude of the meaning of a global DEFCON III alert. The repercussions went far beyond hat could have been expected by the members, especially Kissinger.[102] This miscalculation could have threatened the position of the U.S. in the Middle East, forcing us to openly acknowledge support for Israel. The miscalculation presented the Soviets with less of an escape route by threatening their global credibility. This alone could have initiated a counter nuclear escalation response for the Soviets

[100] Sagan, , "Nuclear Alerts and Crisis Management," p. 132.

[101] Ibid., p. 129.

[102] Kissinger, *Years of Upheaval*, p. 591, Sagan, "Nuclear Alerts and Crisis Management," p. 128.

to "save face." Because of this miscalculation, Kissinger had second thoughts afterwards, and said that it may have been better to alert fewer units instead.[103]

Another impediment that may have influenced the group is the tendency for senior officials to align their views with their boss. In conjunction with this, especially in this case, we can also consider the power and prestige differences between members and how this can influence decisions. In the Yom Kippur Crisis, Kissinger was the most important actor and singularly the most knowledgeable individual in the U.S. on our position in the Middle East and our détente policy. Not to mention that he was closest to understanding the intentions of the President. He not only assumed the responsibility of the presidential position on 24 October, but he acted in the capacity of both the Secretary of State and National Security Advisor. He had the distinct advantage of having worked with all the Middle East actors, and had personally devised the foreign policy strategy with Nixon. In light of the constraint on time and the expertise Kissinger wielded, it would have been unlikely for any member of WSAG to debate Kissinger. Was there a tendency for members to align themselves with Kissinger or just support him? Although several members in the group had very strong opinions and engaged in strong positional debate, in the end, Kissinger probably had the leverage to direct his position. The group realized very quickly that they were not really making recommendations to the President, but deciding on actions as a collective and consensual body. Issue debate had to be short in length to accommodate the numerous issues needing coverage. By virtue of the time constraint and the presence of a dominant actor, individuals in the group were likely to compromise, align or conform in order to support a final decision acceptable to Kissinger. In the situation which WSAG found itself, and in view of the stressed time limit, the best approach may have been for each member to contribute from his own area of expertise to refine the course of action selected by Kissinger. It appears that this may have been the case under the precept that members would add value or increases the probability of accuracy in the decision.

3. Summary

Symptoms of groupthink may have applied in this case in a limited sense. Their time "in group" was not really long enough either to assess or develop severe tendencies, but two of the

[103] Dowty, *Middle East Crisis*, p. 275.

eight symptoms may apply. First, the illusion of invulnerability or having excessive optimism. This can be seen in WSAG's quick reliance on a nuclear option, and Kissinger's abundant confidence that he knew how to handle the Soviets and the countries in the Middle East. Second, collective rationalization may have taken hold as a result of the need to make a decision. An example is the miscalculation that the alert could be kept quiet. In conclusion, it appears that several group dynamic impediments existed in the WSAG and influenced how they arrived at their decision. They accepted great risk in the face of uncertainty, making a choice that could have had nuclear repercussions for the world. This is a difficult decision if one had a lot of information to analyze, let alone in one hour and one minute.

C. THE CIA AND ORGANIZATIONAL BEHAVIOR

As was the case in the period before the Arabs' attack on Israel in October 1973, this inability to foresee critical events – in the face of mounting evidence to the contrary – seems to rest in part on an old and familiar analytical bias: The perhaps subconscious conviction (and hope) that, ultimately, reason will prevail, that apparently irrational moves (the Arab attack, the Greek-sponsored coup) will not be made by essentially rational men.

An Examination of the Intelligence Community Performance before and during the Cyprus Crisis of 1974[104]

1. Background

Events leading up to the surprise Egyptian and Syrian attack on Israel on 6 October were marked by numerous indicators that, had they been read correctly, may have prevented the war. Both the Israeli and US intelligence organizations were caught off guard, not to mention their policymakers. Had the Central Intelligence Agency (CIA) known of an impending attack as late as 3-5 October, the US would have had a good chance to avert the hostilities using diplomacy.[105] Why was an organization like the CIA, having available numerous facts, unable to predict or detect the surprise attack? I propose that organizational impediments prevented these findings from reaching decision-makers prior to the attack. What was known prior to the attack? As early as April 9, 1973 Sadat had stated he would go to war, and stated this on several occasions.[106] On May 31 a memorandum was submitted by the Bureau of Intelligence and

[104] Walter Laqueur, *The Limits of Intelligence*, (New Brunswick, N.J.: Transaction Publishers, 1995), p. 272.

[105] Steven L. Spiegel, *The Other Arab-Israeli Conflict*, (Chicago: University of Chicago Press, 1985), p. 245.

[106] Quandt, *Decade of Decisions*, p. 166.

Research (INR) stating that the odds for a resumption of hostilities "will be better than even."[107] In June 1973 Brezhnev had warned Nixon that the Arabs were planning for war and that this time they were determined to achieve victory. But, by September U.S. Intelligence was persuaded that war was not on the horizon.[108] This may have been a ploy in an attempt to break the current stalemate in the peace negotiations. He also said that only U.S. pressure on Israel to make territorial concessions could prevent hostilities. By the fall, Sadat and Assad had asked the Soviets to not only resume, but increase, the volume of military shipments to Egypt and Syria.[109] On 12 September, Sadat, Assad and Hussein met in Cairo to patch up past differences. After this agreement Syria began to redeploy troops from the Jordanian border to the Golan. Syria also dispatched large numbers of surface-to-air missiles between Damascus and the Israeli Front. This event was known in Washington, but interpreted as a reaction to a September 13 Israeli-Syrian air battle. On the Egyptian side, they began fall maneuvers in the Sinai. These maneuvers sparked an Israeli mobilization alert on September 26.[110] These maneuvers were being conducted at division level for the first time, with live ammunition being stockpiled at the Suez Canal. This was the third time in two years that this had happened.[111] Also, the Egyptians cancelled leaves and installed a huge communications complex. [112] At this particular time in Washington, and at the policymaking level, both the CIA and INR unable to provide consistent reports of what may be going on in the region because of the plethora of information being received.[113] On October 4 Soviet civilians were evacuated from both Damascus and Cairo. This was interpreted by the CIA as a signal that Sadat was ejecting the Soviets from Egypt again, as

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[107] Laqueur, *The Limits of Intelligence*, p. 134, Spiegel, *The Other Arab-Israeli Conflict*, 243.

[108] Ibid., p. 134.

[109] Ibid., p. 167. Elli Lieberman, "Deterrence Theory: Success or Failure in Arab-Israeli Wars," *McNair Paper*, No. 45 (October 1995), Institute for National Strategic Studies, National Defense University, p. 52, states that it was not until the Soviets delivered SCUD missiles did the Egyptians feel they could challenge the Israelis.

[110] Quandt, p. 167.Information about Arab activity prior to the attack is provided here.

[111] Richard K. Betts, "Analysis, War, and Decision: Why Intelligence Failures are Inevitable," *World Politics*, No. 1 (October 1978), p. 74. This is an interesting point because it deals with a pattern being set and suggests a tendency by the Israelis to become complacent, it is also an excuse for inaction because of the economic impact that mobilization of reserves has on their already strapped society.

[112] Laqueur, *The Limits of Intelligence*, p. 134.

[113] Quandt, *Decade of Decisions*, p. 167.

he had done previously in July 1972. It was not interpreted as a precautionary move for the start of a war.[114]

If the CIA were to have assessed both Sadat and Assad's motives at the time, they would have found that both were suffering domestically and in the Arab world from the humiliation of having lost territory to the Israelis in the 1967 war.[115] Assad only wanted to win back the Golan Heights. Sadat had more complex reasons. He was being threatened politically, and a dramatic move against Israel would bolster his position of power. He also sought to break the stalemate in the negotiations and restore fluidity to the Middle East. Next, he wanted to restore some self-respect and self-confidence to his people by seizing and holding on to some of the territory lost in the 1967 war. He wanted to punish the Israelis for occupying their land and regain Egyptian honor. He stated that the "continued occupation of our land exacts a price that is too high for him to pay, and that consequently his theory of security – based as it is on psychological, political, and military intimidation – is not an impregnable shield of steel which could protect him today or in the future."[116] This could be achieved only by "inflicting the heaviest losses on the enemy."[117]

If we analyze Sadat's moves, it appears he planned this operation for several months. His success was partly due to a calculated action plan and detailed deception operations.[118] He cut off information to the Israelis by arresting well-placed Israeli agents in Egypt in early 1973. He also ran the maneuvers, sought conciliation with Arab neighbors, and made rift with the Soviets seem likely with the ejection of Soviet civilians.[119] He observed high standards of secrecy and deception, good communication procedures and good deliberate deception at the tactical level.[120] Lastly, he and Assad confided in virtually no one the precise moment of the attack, nor did he

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[114] Ibid., p. 167.

[115] Eliot A. Cohen and John Gooch, *Military Misfortunes*, (New York: Vintage Books, 1990), p. 100.

[116] Anwar el-Sadat, *In Search of Identity: An Autobiography*, (New York: Harper & Row, 1977), p. 327.

[117] Ibid., p. 327.

[118] Quandt, *Decade of Decisions*, p. 167.

[119] Ibid., p. 167.

[120] Ibid., p. 169. He moved a large part of his army into the Suez Canal, so any variations of their posture could not be picked-up under the cover of maneuvers.

inform his Ambassador in the UN of the attack. This caused the Ambassador to keep to his peace-seeking agenda when the war broke.[121] All these factors contributed to his success in concealing his actions, but it never would have worked without "help" from the incorrect analysis of actual indicators by the Israeli Intelligence Agency (*Aman*), and the CIA.

It is important to consider the unique relationship between the CIA and the policymakers to completely understand this intelligence failure. We consider this relationship essential for the effective functioning of both the organization and the policymaker's decision-making process. "Analysis and decision are interactive rather than sequential processes."[122] If one is to support the other they must have a close dialogue. The worlds of the two are relatively different in thought. We see the policymaker more as a consensus-seeker and the CIA as a pragmatist. Policy perspectives have tended to constrain objectivity, and policymakers often do not understand or fail to use intelligence properly.[123] Because the process of collecting data and completing analysis will likely provide an inconclusive report, the policymaker in a crisis environment is likely to think it adds to the ambiguity of the situation.[124] As the policymaker is pressed to make decisions in a highly fluid and uncertain environment, he tends to search desperately for those pieces of information that will reduce the risks of the decision once it has been made. Thus, policymakers have displayed a tendency to go with operational judgements and distrust analytic professionals. Ray S. Cline, based on his experience in the Cuban Missile Crisis, observed three qualities of a successful relationship. First, the sharing of intelligence data and diplomatic correspondence at suitable levels is essential to careful decision-making. Second, sharing of ideas and estimates among senior intelligence analysts and policy-planners is conducive to sound policy. Third, basing key decisions on careful intelligence analyses is prudent and facilitates the public explanation that breeds confidence.[125] These ingredients for success join policymakers with the intelligence organization as a team after the same common goals. This relationship is important to understand when we analyze the failure of the CIA.

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[121] Ibid., p. 169.

[122] Betts, "Analysis, War, and Decision," p. 67.

[123] Ibid., p. 67.

[124] Ibid., p. 67.

[125] Ray S. Cline, "Policy Without Intelligence," *Foreign Policy*, No. 17 (Winter 1974-75), pp. 130-131.

2. Critical Analysis

"The breakdown was not administrative but intellectual."

Secretary of State Kissinger's comment on the failure of both the Israelis and the US to predict the surprise Arab attack.[126]

The attack by the Arabs had taken both Kissinger and the CIA by surprise. Even as late as October 5th, one day prior to the initiation of hostilities, the CIA still reported that war "was unlikely."[127] Even on the day of the attack, the intelligence reports characterized it was a raid, and the "weight of the evidence indicated an action-reaction situation where a series of responses by each side to perceived threats created increasingly dangerous potential for confrontation."[128] In this section it will help us to understand the organizational impediments of the CIA by including Kissinger as part of the hierarchy of the organization. How does an intelligence breakdown become an administrative failure? The development of national strategic paradigms, which include assumptions, estimates and hypotheses used for action by the CIA, come from the foreign policy advisor. In an effort to support policymakers, the CIA takes a preponderance of its cues from these actors to direct their efforts. The CIA also functions in its own organizational structure and hierarchy to conduct data collection and processing. This confluence of the policymakers' flawed directives and the organizational impediments caused the failure to identify the Arab attack. One impediment that applies here is the CIA's propensity to pursue its work with its own set of values, interests and goals in mind. This effect is furthered as they champion and protect them within the crisis resolution. What also must be understood is that analysts cannot interpret information without a hypothesis or a belief system to support the analysis.[129] What is unique here is that the policymakers helped shape those values, goals and

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[126] Kissinger, *Years of Upheaval*, p. 466.

[127] Marvin Kalb and Bernard Kalb, *Kissinger*, (Boston: Little, Brown and Company, 1974), p. 457, Spiegel, *The Other Arab-Israeli Conflict*, p. 246.

[128] CIA Bulletin quoted in the *Washington Post*, 13 September 1975, p. A5, Kissinger, *Years of Upheaval*, p. 458.

[129] Laqueur, *The Limits of Intelligence*, p. 270.

interests that impeded the CIA's understanding of the crisis. During the crisis both Kissinger and Nixon tried to impose their fixed conceptions on a situation that did not exactly fit. They believed that the Arabs would not fight and that the Soviets would contact them to prevent a war as agreed to in their détente policy.[130] Kissinger saw the Arabs as rational actors; "our definition of rationality did not take serious the notion of starting an unwinnable war to restore self-respect. There was no defense against our own preconceptions or those of our allies."[131] He also observed that the Egyptian ambassador at the UN continue to seek a peaceful resolution in the region, a part of Sadat's deception. Kissinger could observe the actions going on but they did not register; Betts' states in his article, "hesitancy in communication and disbelief on the part of leaders were reinforced by deceptive enemy maneuvers that cast doubt on the data."[132] Kissinger may have also been thrown by the deception. Further, it was likely that, even if these pieces of information had reached Kissinger they would not have been registered as the threats they were. Also assessed by Betts, was the point that the small and fragmented alarms "that did not reach decisionmakers were dismissed because they went against strategic estimates or assumptions."[133] Sadat's decision was both psychological and diplomatic. His plan was to fight a war that would restore Egypt's self-respect and increase her diplomatic flexibility and leverage Israel to negotiate. The attack was to break Israel's position of military supremacy and release Egypt from the paralysis of humiliation. Sadat's strategy was to lose to achieve his goals.[134] As a result of this unforeseeable strategy, Kissinger stated in reference to his duty to assign the right questions to the analysts, "We had become too complacent about our own assumptions."[135] Kissinger makes reference that the facts were known but did not registrar. Why did Kissinger miscue the CIA and the intelligence process? Kissinger became overconfident, as did the Israelis. He overrated the Israelis and underrated the Arab military strength, Egyptian ability to

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[130] Spiegel, *The Other Arab-Israeli Conflict*, pp. 245-247.

[131] Kissinger, *Years of Upheaval*, p. 465.

[132] Betts, "Analysis, War, and Decision," p. 63, Kissinger, *Years of Upheaval*, p. 467.

[133] Kissinger, *Years of Upheaval*, p. 467.

[134] Ibid., p. 460.

[135] Ibid., p. 467.

learn from previous defeats, and their capacity to conduct a deception.[136] He also missed the political issues on the Arab side. The end result was that Kissinger developed false assumptions in his attempt to fit the situation into his strategic estimate. In the end, these hypotheses and beliefs were manifested in the intelligence support process disguising the indicators that pointed to war. They thus precluded any kind of preventative interdiction.

Walter Laqueur talks about analysts and decisionmakers:

> Others [Analysts] concentrate on the fact that observers and makers of foreign policy are strongly influenced by their images of the opponent, which may reflect national stereotypes or personal hopes and fears. They point out the dangers of a closed mind and the unwillingness to alter hypotheses in the light of new information. More generally, they emphasize the limitations of the human intellect when called upon to choose the right course of action amid conditions of uncertainty and in the face of new, unfamiliar phenomena.[137]

Another impediment demonstrated during this crisis, and shown above, was that Kissinger wielded more influence, power and control over information than did any other actor. Many of the cues directing the CIA were given to William Colby from Kissinger and his strategy on foreign policy. Again, assumptions and hypotheses for strategic action became too intrusive to the way the intelligence Agency's support was given to the policymakers. The impact of this makes for a complicated and ill-balanced process of directing and generating intelligence. In the policy-making process there is a necessity for balanced input, analysis and debate of issues from numerous actors. Any time this give and take is limited, as might have occurred in this case, there is the resulting loss of objectivity that may impact outcome. In this case it appears that there may have been a one-sided direction to the assumptions being used on the countries in the region. The Israelis became overrated and the Arabs underrated. In sharp criticism of Kissinger's comments about the intelligence failures, Ray S. Cline, Head of the INR, wrote a stinging memorandum for record with the following critiques of the Secretary:[138] Kissinger:

1) failed to pass on evidence contained in Soviet statements and key questions on the situation to intelligence actors for analysts.

2) isolated intelligence officers from thinking and key questions in the minds of policy officers.

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[136] Laqueur, *The Limits of Intelligence*, p. 281.

[137] Ibid., p. 269.

[138] Cline, "Policy Without Intelligence," p. 133.

3) had policy officers acting as their own intelligence analysts when they have neither technical knowledge nor time to weigh all the evidence objectively.

These two analyses also highlight another impediment; the influence a bureaucratic actor has in directing the priorities of his organization. By shaping how his organization directs their emphasis, he is able to manipulate information in favor of his interpretation of the decisionmaker's needs. Again, this will result in lopsided information weighted in favor of the organizational interests of the actor, inhibiting the ability for the decisionmaker to get a balanced picture of options. Ironically, this appears to have been true in this case. William Quandt, a participant in the 1973 decision-making process observed, "bureaucratic politics was barely in evidence, so tight was Kissinger's control over the policy-making machine."[139] Kissinger was making decisions based on information for which he had set the template with the intelligence community. Unfortunately, it was skewed to his preferences. Another impediment that influenced the intelligence failure was the analysts' approach to their analysis of the events and actors in this region. The mentality derived from a regional stalemate, in conjunction with a dependency on the Israelis for intelligence cues, created an attitude of complacency within the organization. The tendency for organizations to satisfy is demonstrated here by the analyst's approach to conduct problem-directed searches. Leading up to the crisis the searches that were conducted were predominantly based on lessons of history.[140] The flaw of this protocol is that one is conducting searches that refer to specific conditions that may no longer exist. Another frequent source of error is mirror imaging. This is the assumption that what the enemy knows about his own side is basically what the observer knows.[141] This was demonstrated by U.S.-Israeli assumptions in reference to the inferior position of Egypt to the superior strength of the Israelis at the time. If the U.S. and the Israelis knew of these differences, then in the spirit of deterrence theory Egypt should not attack. Another source of error is to look at your opponent as a rational actor so as to devise an intelligence reference point. It is easy to get into this trap, especially if the other actor thinks differently about his situation, clearly the case with Sadat. If this was the basis for perception shared by the U.S. and Israel, then it is understandable why both

[139] Quandt, *Decade of Decisions*, p. 204.

[140] Laqueur, *The Limits of Intelligence*, pp. 270-272.

[141] Ibid., p. 270.

countries missed the Egyptian point-of-view. The American analysts had assumed that Sadat was too consumed with improving his economy and constructing a new Arab front with moderate oil producers to go to war.[142] Another example of the analyst's peril, a week out from hostilities non-essential technicians and dependents departed out of both Damascus and Cairo. They interpreted this as Syria imitating the Egyptians in expelling their Russian advisors, as was done in 1972.[143]

Another organizational impediment is the tendency to rely on standard procedures and policy routines to deal with intelligence issues. During this timeframe the CIA was essentially taking her cues from the Israeli Intelligence Agency – *Aman.* The CIA had latched on to the Israelis to provide an intelligence pipeline to the U.S. as a routine procedure. In Nixon's comment made later to David Frost, he said "What surprised me the most was, I know they [our intelligence community] were cooperating totally with the Israel intelligence and the Israelis have fantastically good intelligence and their intelligence told us there was not going to be an attack."[144] Since 1967 the Israelis had shared their intelligence with the CIA, using it to bring Arab violations to the attention of their U.S. backers. The Americans were used to preventing the Israelis from overreacting in times of crisis, especially to keep a lid on Israeli weapons requests. The organizational response was to reassure the Israelis, not to alert them to their own dangers.[145] Over the years U.S. analysts built strong ties with their intelligence counterparts, and were inclined to accept their friends' confidence.[146] This faulty assumption that Israeli intelligence was better than ours, and that our dependence was the result of their proficiency, caused our foreign policymaking to depend on the Israelis. Kissinger stated in his book that "We uncritically accepted the Israelis' assessment."[147] It is unfortunate that the Israelis were unable to detect the attack, because it became our miss also. The result of this reliance was that, when things went bad, no alternative with which to move forward. As it stood, we had no other

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[142] Spiegel, *The Other Arab-Israeli Conflict*, p. 246.

[143] Ibid., p. 247.

[144] Ibid., p. 246.

[145] Ibid., p. 247.

[146] Ibid., p. 246.

[147] Kissinger, *Years of Upheaval*, pp. 466-467

established network to generate intelligence but a single secret base in Iran.[148] This significantly hindered the organization's ability to provide alternatives for analysis. Connected with the intelligence dilemma was the institutional perception that the Arabs were incapable of conducting and sustaining a war against the modern Israeli Army. A 1971 CIA handbook used by analysts reported that the Arab fighting man "lacks the necessary physical and cultural qualities for performing effective military services." Additionally, the Arabs..."simply weren't up to the demands of modern warfare and they lacked understanding, motivation, and probably in some cases courage as well." Again, this example exposes the mentality guiding the intelligence support during the crisis.[149] This could also be labeled as organizational attribution-bias.

One last impediment that may have influenced the intelligence failure is the time consuming nature of bureaucratic politics that can distract the actor from the issues at hand. Kissinger and Nixon ran a highly centralized decision-making apparatus and notably distrusted the foreign policy bureaucracy in 1973.[150] Kissinger essentially carried the complete foreign policy burden throughout the unfolding Watergate drama. Add to these already hefty burdens the Vietnam War, our oil embargo, and pressures from our NATO allies, it is a wonder Kissinger even survived. Kissinger was also working diligently on the peace negotiations in the region. In an environment of complexity and international politics, and having supreme confidence in Israeli intelligence, we can suggest that Kissinger may have become complacent with what he initially interpreted as a low-threat situation. He may have been over reliant on a flawed process, preventing him from noticing the early warnings of an attack, and the necessary analysis to critically study the events in the region.

3. Summary

This section analyzed the organizational impediments within the CIA that influenced the intelligence failures prior to the Yom Kippur War. As we look at the necessity for both the intelligence community and the policymakers to work hand in hand, we can observe a unique relationship. It is such that the intelligence organization takes its cues from the policymaker who

[148] Spiegel, *The Other Arab-Israeli Conflict*, p. 246.

[149] Dowty, *Middle East Crisis*, p. 204.

provides them with the essential direction and guidance needed to conduct effective research and analysis. This establishes their support of the best possible information to be made available for his foreign policy-making efforts. If we include the policymaker as part of the extended intelligence organization we see how their actions influences organizational activity and the results. Kissinger's centralization of foreign policy and complacent perception of the region defined his reality. This stifled his assumptions and hypotheses needed for effective support. The CIA also had several internal impediments that hindered their search for non-stereotypical activities. These were their use of historical paradigms to divine current activities, and their errors of "mirror imaging" the regional players. Their dependency on Israel's intelligence apparatus, itself weighed down by organizational impediments, allowed U.S. policy to be coupled to their interpretation of the events as they unfolded, thus influencing our perception of reality. In the final analysis, organizational impediments appear to have contributed significantly to the intelligence failure before and during the 1973 war.

[150] Ibid., p. 204.

V. COUNTERFACTUAL ANALYSIS

This chapter conducts a counterfactual analysis on the profiled models and case studies using the artificial intelligence model. By doing this I hope to predict how events would have developed if cognitive impediments and pressures were mitigated in the conduct of crisis decision-making. This section demonstrates how AI may improve on the human-only system, then further uses the AI model to reanalyze the cases. Given what we know about decision-making on the cognitive, group and organizational levels during the Cuban Missile Crisis and the Yom Kippur Crisis, we can consider the effect AI would have had on the decision-making process. Would AI have improved decision-making in these models and cases by mitigating the conditions affecting the process.

AI capabilities presented from the earlier AI model describe how self-thinking technology can extend human capabilities in the future. To do this, AI functions as an assistant to its human user, melding input from simulations, information-resource and associate systems to render critical output. The associate system or agent interfaces with the user to offer problem-oriented information and analysis based on captured institutional knowledge, reasoning, and advance searches. AI also has the capacity to learn, plan future operations, monitor and update current situations, and conduct collaboration activities with other agents and humans. We can ask whether, by applying these advanced capabilities to our current decision-making process, we can enhance our ability to make quality foreign policy decisions within the context of a volatile international system?

A. ARTIFICIAL INTELLIGENCE ON DECSION-MAKING POCEDURES

This section compares and contrasts the procedural tasks required to conduct effective decision-making with AI (see Figure 5.1 and 5.2). Because these tasks are similar in all three models, cognitive, group dynamics and organizational behavior, they will be addressed under this one heading. These procedural tasks serve as a basic framework for decisionmakers, groups and organizations to assess high-quality decision-making.

Five Critical Procedural Tasks in Effective Decision-Making

1. Ensure that sufficient information about the situation at hand is obtained and that it is analyzed adequately so that it provides policymakers with an incisive and valid diagnosis of the problem.
2. Facilitate consideration of all major values and interests affected by the policy at hand. Thus, the initial objectives established to guide development and appraisal of options should be examined to determine whether they express adequately the values and interests imbedded in the problem and, if necessary, objectives and goals should be reformulated.
3. Assure a search for a relatively wide range of options and a reasonably thorough evaluation of the expected consequences of each. The possible costs and risks of an option as well as its expected or hoped for benefits should be carefully assessed; uncertainties affecting these calculations should be identified, analyzed, and taken into account before determining the preferred course of action.
4. Provide for careful consideration of the problems that may arise in implementing the options under consideration; such evaluations should be taken into account in weighing the attractiveness of the options.
5. Maintain receptivity to indications that current policies are not working out well, and cultivate an ability to learn from experience.

Figure 5.1. Five Critical Procedural Tasks in Effective Decision-making. Source: George, *Presidential Decisionmaking in Foreign Policy: The Effective Use of Information and Advice*, 1980, p. 3.

High Quality Decision-Making Procedures

1) Thoroughly canvassed a wide range of alternative courses of action.
2) Carefully weighted the costs, drawbacks, and subtle risks of negative consequences, as well as the positive consequences, that could flow from what initially seemed the most advantages courses of action.
3) Continuously searched for relevant information for evaluating the policy alternatives.
4) Conscientiously took account of the information and the expert judgements to which they were exposed, even when the information or judgements did not support the courses of action they initially preferred.
5) Reexamined the positive and negative consequences of all the main alternatives, including those originally considered unacceptable, before making a final choice.
6) Made more detailed provisions for executing the chosen course of action, with special attention to contingency plans that might be required if various known risks were to materialize.

Figure 5.2. High Quality Decision-making Procedures. Source: Irving L. Janis, *Victims of Groupthink*, (Houghton Mifflin Company: Boston, 1972), p. 142.

To perform these tasks effectively, it is necessary to have information adequately and critically analyzed for the conduct of a valid diagnosis of the problem. AI significantly increases both the quantity and quality of information that can be analyzed from numerous sources. One of the capabilities discussed earlier was that AI could conduct complex searches at higher speeds through the use of finite instructions. This capability dramatically improves the quality of information being used by the decisionmakers, which can then be fed into a sophisticated analytic process. With an AI system in use, the users receive updated information that has been

analyzed based on organizational knowledge, collaboration with other sources, and simulation of both situational contingencies and participating actors. Further, the system can create course of action recommendations based on the above input and analysis, and simultaneously follow the situation and update information. Thus, AI can significantly increase the quality and speed of this first procedural task.

The ongoing searches, the gathering of information, and the analysis, can support user efforts to consider the major values and interests affected by the policy options. With the ability to program AI, reference institutional knowledge, and use lessons learned from previous experiences, users can ensure that this part of the task will be accomplished. The AI system prompts certain objectives or criteria to further guide development with simulation results supporting each variation recommended. Once a set of objectives and values are selected, the AI system ensures that they are being met as the policy develops. And, with its continuous updating capability, the AI system can also inform the user of any changes needed to the policy objectives as a result of new information. Thus, AI functions as an alarm for the user in case the policy gets off track. As the policy develops, the AI system runs simulations, and provides feedback to assist him in "getting it right the first time."

As AI works through these processes, its capabilities will allow for the presentation of a wide range of options to the user. Based on its programming and complex analysis, AI provides crucial and viable feedback on each option, each further refined from the benefit of simulations. This will further the user's assessment of each option's expected consequences, costs and risks, and expected benefits. In this process uncertainties are identified, analyzed and considered at each level of analysis. Identification of uncertainties prompts the AI system to refine its searches and analysis to further minimize these for the user. AI can also make recommendations to the user for activities would further reduce these uncertainties.

Through the use of sophisticated analysis and simulations AI can alert the user to credible problem areas in a policy, and provide suggestions for mitigation. These suggestions can take the form of other policy options, actions intended to diminish the problem, or contingency plans to change the policy.

AI systems will also benefit the user by making it significantly easier to keep a clear mind. AI will monitor the situation so as to provide continuously updated recommendations and assessments regarding the impact of his decisions. AI will force the user to remain engaged in

and receptive to any changes in policy implementation. Thus, interaction between the user and the system will further the education of both parties.

The examination of these procedural tasks has provided an insight into how AI can enhance every aspect of the decision-making process. In fact, for each task involved, AI exceeds human capabilities and expectations. AI systems will ensure that the procedures are followed and no step is omitted through human negligence. The speed and ease with which AI handles decision-input makes it an invaluable tool for assisting the user to function in a high-tempo environment. In the end, AI systems will provide the user with significantly faster, low-risk input,[1] thus enhancing his decision-making process.

B. ARTIFICIAL INTELLIGENCE AND COGNITVE DECISION-MAKING

1. The Impact of AI on the Cognitive Impediments to Decision-Making

This section demonstrates how AI eases the impediments addressed in the cognitive decision-making model. These impediments have been shown to influence individual policymakers in the conduct of foreign policy decision-making. In the context of a crisis, where the burden shifts to the individual policymaker to make high-quality decisions, these impediments have a far greater influence on the decision-making process.

The policymaker has two behavioral traits, one as a problem-solver using attribution theory, and the other as a consistency-seeker, that act as impediments to his decision-making ability. As we see him as a problem-solver, he seeks to inquire about his beliefs to understand and apply some control over his environment. An example of this would be his attempt to understand attributes of the actors and causes of salient events, so as to make predictions based on historical precedent.

While consistency-seeking is inherent to human behavior, to the degree to which an individual is affected by it varies. Man as consistency-seeker wants to make incoming information consistent with his existent beliefs. Examples of behavior consistent with this trait are the reliance on poorly grounded beliefs or irrelevant rationalizations to ward off incoming information, the assimilation of new information into preexisting beliefs, the failure to recognize

[1] Again, lower-risk does not mean the situation was less risky. This means that a greater amount of knowledge was used thereby reducing the uncertainty in the decision.

obviously important events that contradicts his beliefs, the unwillingness to search for evidence that contradicts his beliefs, the refusal to address arguments of those who disagree with his beliefs, and the rationalizations on behalf of his policy despite contradictory new facts.

However, it is also true that his beliefs could be based on valid historical precedent for the crisis he is facing. The use of AI can assist an individual in fulfilling his quest to understand his environment better, as in problem-solving, and to assess information better before filtering it through his established beliefs as in consistency-seeking. In problem-solving, AI can use advanced research and analysis techniques to help him understand attributes of other actors involve. AI can also compare its analysis of the current situation with its analyses of past cases. Finally, AI can simulate the outcomes of different choices based on the nature of the individuals involved so as to gain greater insight into the situation. In consistency-seeking, AI can alter arguments to counter the beliefs of the decisionmaker. These would, again, be based on AI programming, knowledge and reasoning. The job of AI is to present strong detailed analysis to cause the user either to change his beliefs or to consider others. AI offers an impartial and unbridled way of looking at things that counter or challenge the user's beliefs, or reconfirm his beliefs to himself.

Value-complexity is another factor that can impede the decisionmaker's ability to cope with a crisis. Value-complexity can affect the decision-making process in several ways. The first is to force a decision that satisfies competing values. Another is facing up to the act of making a decision for its own sake. The danger of this is that if it is a premature decision, relevant data will likely be overlooked. Lastly, it could cause him to forgo making any decision. The use of AI could help to counter the various effects of this impediment by presenting all the options with their consequences, known costs, risks and benefits. AI can analyze a decision to satisfy all competing values, showing the weaknesses-strengths, and predict the results of such a decision. Ultimately, the goal is to avoid decision-making that is based on the attempt to satisfy all competing values. AI can project the developments that result from a decision, exploring its positive and negative aspects. This can give the decisionmaker the necessary insight and leverage to pursue the important values. In an effort to avoid making premature decisions, AI can counter potential trade-off choices by presenting timely and refined information to the user. This enhances his perceptions, especially where it is necessary to make a time-sensitive decision. AI can give the user tools to logically assist him in making a decision, thereby mitigating the

appeal of avoidance. As previously stated, the power to analyze and predict options can make difficult decisions more approachable. AI can thus become a catalyst for proactive decision-making.

Several other impediments arise that are the result of uncertain, high-stakes, fast tempo environment inherent in a crisis. One is "defense avoidance," the act of forcing the problem out of one's mind so as to avoid difficult choices. While AI cannot force the user to engage the problem, it can make it easier to approach. For the reasons previously discussed, AI can act as a catalyst for action that organizes and carrying the initial research and analysis burden of a developing situation. Once begun, it can help him to predict and think. Because, the root of this avoidance has much to deal with the difficulties working a complex problem, AI can help by setting the crisis within a manageable abstraction.

Another device, called "bolstering," is used by a decisionmaker who, realizing a decision must be made, props up his choice while undermining the others. As he continues reevaluating his options, the attractiveness of the favored one keeps being highlighted, precluding an honest evaluation of all the options. The use of AI in this situation would assist the user in evaluating all of the options and their consequences, thereby allowing him to select the truly optimal one. Even though the user may have a "non-optimal" choice in mind, AI can be used to challenge a decisionmaker to justify his decision. Confronted with this effort, he may instead opt for a more prudent decision.

There are a variety of cognitive aids that the decisionmaker can use to assist in his choice; however, a drawback is that they can also influence how he solves a problem (see Figure 5.3). If he resorts to their use too soon he may restrict the information flow to himself, hindering future analysis. AI can assist by preventing their premature use, or eliminating their use altogether. The capabilities of AI allow it to cover more information in sophisticated high-speed searches and analyses to render alternatives and their consequences. AI incorporates all these aids to a much more detailed and in-depth degree than can be known by the user. AI's capabilities incorporate all these aids to a much more detailed and in-depth degree than can be fathomed by the user. AI is able to make recommendations with more validity than those arrived at with the use of these aids, therefore demonstrating their obsolescence.

Cognitive Aids to Decision

1) Use of a "satisficing" rather than an optimizing decision rule.
2) The strategy of incrementalism.
3) "Consensus politics" – i.e., deciding on the basis of what enough people want and will support rather than via an attempt to master the complexity of the policy issue.
4) Use of historical analogies.
5) Reliance upon ideology and general principles as guides to action.
6) Application of beliefs about correct strategy and tactics.

Figure 5.3. Cognitive Aids to Decision. Source: George, p. 19.[2]

Another impediment associated with attribution theory is the tendency to exaggerate situational variables to explain one's own behavior and overstate one's role in the crisis. Conversely, there is another tendency to emphasize dispositional variables when discussing the behavior of others. AI can be the "great equalizer" by acting as the standard to judge these variables by. The original motivation for this behavior could be personal gratification or political expediency. If AI becomes the standard by which to judge where recognition belongs, then this may discourage the impact of egos and the possibility for less influence by politics on high-quality decisions.

Another attributional bias is to overlook the value of nonoccurrence. AI is programmed to consider numerous variables; nonoccurrence is one. AI would not only notice the lack of an event, but would provide a critical analysis explaining this turn of events. AI would thus ensure that nonoccurrence would be studied and analyzed also.

Heuristics makes up the body of another cognitive impediment used by individuals to make decisions. One type is the "availability" heuristic, making an assessment based on personal experience or memory rather than probability data. Another type is "representiveness," or selecting an outcome based on one's stereotypes of the available information, regardless of known probability information. These two heuristics give enormous weight to one's memory and personal experiences in decision-making. One last heuristic is the confusion that arises when the conceivability of an event is at odds with the probability of that outcome. This is common when dealing with a scenario with little historic supporting data, such as a wargame. The use of AI can assist the user to avoid relying on the "availability" and "representiveness"

[2] Irving L. Janis and Leon Mann, *Decision Making*, (New York: The Free Press, 1977), pp. 21-39, also discuss several aids to decision-making. These are similar, but not identical, to George's.

heuristics. As AI presents data from its analysis, it is inevitable that it will counter the natural tendency for a user to regress to a heuristic. AI offers sophisticated analysis of options based on probabilistic data to render viable solutions. This would cause the user to think before using a heuristic, perhaps allowing him to see a more balanced approach for a solution. In addressing the last bias, is the confusion that arises when the conceivability of an event does not jibe with the probability of the outcome, AI can remedy this. As discussed above, AI uses probabilistic data to make recommendations and predictions. This gives the user the ability to differentiate between the conceivable and the probable, with the proper preference given to the latter.

The tendency of a decisionmaker to depersonalize an opponent and treat him as a rational actor is another impediment often overlooked. While it is important to understand what an opponent is going through, and how he perceives us and our actions, it is of little to no good use when this analysis is based on the faulty assumption that others behave as we do. AI can counter this impediment by providing a detailed profile of the behavior of the actor and how he may act in certain situations. This profile can be used in simulations to further analyze both the individual actor and the action-counteraction scenario. This will insure that the decisionmaker is aware of the opponent's intentions to as to help him make a better decision.

Another impediment is one where a decisionmaker is driven by historical analogy. The danger of this is the tendency for a decisionmaker to analyze a situation based on seemingly corresponding events in history, at the expense of the reality of the current situation. This trait is strong in individuals because history has generally formed their beliefs and perceptions, thus altering their perceptions of reality. AI counters this impediment by clearly making the decisionmaker aware of differences between the present situation and the corresponding historic contexts. Part of an AI analysis is to survey and present analogous historical examples. It will also take the further step of analyzing their differences and creating simulations that incorporate the changing differences. This capability will prevent the decisionmaker from getting locked into an incorrect historic paradigm.

Lastly, a condition that can catalyze several impediments is the influence of stress on the decisionmaker. A first source of this stress derives from the surprise of the event, and its disruption of normal routines. Another is the need to make rapid decisions in a highly fluid environment. Finally, there is the physical and emotional fatigue that results from the long hours of the crisis. The favorable side to stress is that it can make individuals more vigilant in their

efforts to make a quality decision. On the negative side, it can impair attention and perception, increase cognitive rigidity, give a shortened or narrowed perspective, and shift the burden of action to the opponent. AI can assist the decisionmaker to counter these negative elements of stress by maintaining continuous and unrelenting coverage of the situation. AI will provide the latest updates and changes, and present options for action that include their consequences. This will take a large mental burden off the decisionmaker. AI can track issues and affecting factors of the situation, making them available to the decisionmaker. To ease the burden further, AI can remember and track mundane tasks, while always thinking like a fresh mind – prompting the decisionmaker with continuous suggestions. The results of this process a whole new concept of decisionmaking can evolve. Using AI will seem more stressful initially, at least until individuals are used to working with an associate that presents only high-quality outputs. One key future need is the modem will be a conduit for human interface with these AI assistants. How does a human look at so much data at one time and understand what is happening? Not to get off track, but AI will decrease the stress on a decisionmaker by assisting him, and keeping what is important at the forefront.

This section demonstrated how AI might ease the decision-making impediments addressed in the cognitive model. Though these impediments have been shown, in the case studies, to have a significant influence over a decisionmaker, AI has shown it can counter this force. AI, with regard to each impediment, can reduce and, in many cases, reverse their influences. Therefore, I hypothesize, using AI will likely enhance individual cognitive decision-making. To test my hypothesis that AI enhances cognitive decision-making, we now turn to a realistic setting, and reanalyze the two case studies.

2. Artificial Intelligence on Kennedy's Cognitive Decision-Making Process

a. Kennedy's Decision to Remove the Missiles

Kennedy's first major decision during the Cuban Missile Crisis was to establish a "bottomline" from which all decisions could be based: that "the missiles must go." The value-complexity cognitive impediment influenced this decision by forcing this action in haste. AI would have quickly presented Kennedy with options, or courses of action, and their consequences. AI would have also simulated his initial "gut" reaction decision. This would

have shown he was backing Khrushchev into a corner and forcing him to make a decision from a position of nuclear inferiority. AI would have given an analysis from the Soviet perspective, offering both explanations as to why Khrushchev may have done this, and predictions of his next move. This would have helped Kennedy to focus quickly on a less confrontational response, to give Khrushchev some early options to avoid a forced response that imperiled Soviet global credibility and prestige. AI could have also guided Kennedy to use some historic analogies, such as the Berlin Crisis or an event in the Truman years, similar to the missile crisis, and could have given him simulated input from his advisors and supporting bureaucracies. With the benefit of AI, his advisors and supporting organizations would have access to the same resources, allowing them to input faster to the process. Thus, the use of AI on value-complexity could have helped to prevent a rash choice, and, would have allowed the flexibility to hear advisor and bureaucratic input prior to making a decision. AI could have recommended sterner diplomatic dialogue and disclosure of ultimate U.S. intentions. Also, AI could have recommended exposing Soviet intentions and showing that a move to install missiles could not have remained cloaked in secrecy.

Another influence on Kennedy's decision was his premature use of cognitive aids. His reliance on his ideology and the application of his beliefs for a correct strategy could have been improved with AI. AI incorporates all cognitive aids into its system and would have, therefore, given Kennedy detailed analysis and numerous options to select from. This information would have allowed him to reflect against his "gut" reaction, thus easing his strong initial inclination at an earlier point.

Another impediment was Kennedy's use of the "representiveness" heuristic. Using AI could have challenged Kennedy's stereotyped perception of Khrushchev. AI would have presented probabilistic information that countered the human tendency to judge and assess. This would have decreased the burden on Kennedy's memory, and given him a more impartial assessment of Khrushchev. AI could have also countered Kennedy's tendency to use the "availability" heuristic. As his past experiences influenced his judgement, AI would have presented a more probabilistic and impartial assessment of the situation.

Most of Kennedy's stereotypes and experiences with the Soviet leader stemmed from the Vienna meeting, the Berlin Crisis and the Bay of Pigs. Kennedy saw Khrushchev as a non-negotiator, or as being very rigid in his convictions. AI would have challenged his

heuristics by offering an impartial reference point to see the issues, and Khrushchev more probabilistically. This could have changed things for Kennedy. Kennedy was convinced Soviet stubbornness would lead the two countries closer to a nuclear confrontation. In an effort to foster a peaceful outcome, Kennedy was willing to sacrifice his political reputation, and give up the Jupiter missiles in Turkey.

Kennedy was a "consistency-seeker" in that he demonstrated dissonance-reduction bias when he assessed Khrushchev's lie to him, according to his moral and ethical belief system. Though Khrushchev's action may have been morally reprehensible, it was dangerous for Kennedy to take this action as a personal affront. Thus, AI could have presented impartial assessments that would have allowed him to think of the situation with less emotion or personal attachment. The AI output could have challenged his tendency to use this bias, thus altering his belief altogether. Nonetheless, AI would have sought to stall the decisionmaker with a counter probabilistic perspective. The results of using AI could have prompted a different reaction, as discussed above, than Kennedy's "gut" reaction.

Another cognitive impediment that influenced Kennedy was his perception of Khrushchev as a rational actor. AI would have assisted Kennedy in forming this perception by presenting a profile of the actor and background on the decision-making process in Moscow rooted in reality not rationality. This would have allowed him to perceive issues in a more specified manner, therefore giving him a view of how the Soviets thought based on their decision-making system. Kennedy would have thus understood Khrushchev's organizational constraints better, and sooner, and worked earlier to give him as much time as possible.

Lastly, the influence of stress on Kennedy may have caused him to be initially rigid, then more vigilant. The stress caused by the surprise of the event, and the lie told by Khrushchev with its potential consequences, caused a "knee-jerk" reaction from Kennedy to insist the missiles be pulled out of Cuba. AI counters this initial reaction by presenting valid options faster than anyone can think. Before the decisionmaker becomes too rash, the AI system begins taking him through prudent decision-making steps. AI updates information as it becomes available and arrays a constant set of options to the decisionmaker for discussion or decision. AI can, thus, head off the tendency to feel obligated to make a crash decision, one probably based in emotion. As a result of AI, Kennedy could have hesitated long enough to review several viable options, and then he might have decided differently.

In final analysis, AI would have improved Kennedy's ability to see the impartial elements of the event from which to base a decision. AI extends the decisionmaker's capabilities to receive well-grounded analysis faster than he can think. It can insure a prudent framework for decision-making is used, and that input from advisors and supporting organizations is incorporated. In this case the influence of AI would have countered Kennedy's cognitive impediments and allowed him to make a better decision, thus providing Khrushchev more maneuver room, and keeping this crisis further removed from the nuclear brink on which it teetered for several days.

b. Kennedy's Decisions on Inadvertency

Kennedy made several decisions to safeguard against organizational inadvertency that might spark conflict during the crisis. Several impediments influenced Kennedy by these decisions. Attribution theory influenced Kennedy in his quest to be an inquisitive "problem-solver," to discern Khrushchev's attributes and to predict historical trends. The use of AI would have assisted Kennedy by analyzing his adversary and the Soviet decision-making system he worked in. AI would have provided information on the Soviets historical references that they based decisions on. From this, AI would have developed trends for current situational data and simulation. This would have given Kennedy an insight into both the Soviet system and into Khrushchev, and would have helped him to answer the "why" of his curiosity, and to make his next decisions. As a result of using AI, Kennedy would have had a clearer understanding, versus having to guess at Khrushchev's situation in dealing with his decision-making system.

In establishing ExCom, Kennedy was not seeking to bolster a particular option to expedite decision-making. Rather his intention was to have his advisors conduct critical analysis. For this he made the decision to give them as much time as possible because he knew this would improve the input from the group. The use of AI would have helped Kennedy in two ways. First was himself, by delivering quality input at a faster rate, thereby giving him advanced insights into which options are being considered. The second, ExCom, by producing advanced analysis, could have begun debate and further analysis sooner on a more refined set of options, thus giving Kennedy better recommendations in a more timely manner.

Another impediment that influenced Kennedy was his use of the "representiveness" heuristic. This is demonstrated by his suspicious stereotypes for his advisors

and supporting bureaucracies. AI could have countered this perception by presenting him with decision profiles of the individuals within the advisory group and predicting their collective recommendations. He could also profile the decision character of each supporting organization. Understanding these decision profiles, the options under consideration could have been simulated, providing a clue to the possible result. This would have given Kennedy a much more probabilistic way of predicting their actions.

Kennedy's decisions were also influenced by his use of the "availability" heuristic. This was developed from his experience with inadvertency during the Bay of Pigs fiasco. The use of AI would have given him visibility of activities not in-line with his objectives. Also, if Kennedy would have used AI, then the provoking U2 incident that flew over the Soviet Union during the crisis might have been prevented - as AI would surely have recommended against such a risky action.

Kennedy's decisions were also influenced by his dissonance-reduction bias. His beliefs about the culture of his supporting organizations were formed during the Bay of Pigs. He also had ingrained humanitarian beliefs that told him to avoid nuclear war over a less then direct threat to the U.S. To counter this, AI would have presented logical arguments in support or contradiction to these beliefs. As AI presents impartial analysis that is intended to cause the decisionmaker to reflect on his beliefs. As a result of AI, a more balanced perspective would have been presented to Kennedy, which could have caused him to forgo the extensive safety mechanisms he enacted to prevent a nuclear confrontation.

Lastly, the influence of stress made Kennedy more vigilant. He wanted to get ExCom to understand the Soviets and their pressures in order to make a more informed decision. Kennedy also understood that the supporting organizations and ExCom were slow to break routine and work effectively in a fluid environment. These feelings led him to pursue more time and space during the crisis, for both sides. AI could have assisted him in his efforts to gauge the crisis and prevent rash decisions. The use of AI would have also helped Kennedy direct ExCom and the supporting organizations to handle and analyze non-routine data within the time constraints and render quality recommendations. Kennedy would have had oversight of their activities that would have allowed him to ensure they were inline with his objectives. AI would have improved Kennedy's predictions about the Soviets' next move, thereby allowing a U.S. response that moved toward de-escalation without appearing to be backing down.

In the final analysis, AI would have improved Kennedy's ability to make decisions that avoided the danger of inadvertency. In these decisions, AI would have exposed and challenged his cognitive tendencies, and at the same time assisted him to direct ExCom and the supporting organizations around the pitfalls of non-routine decision-making. The threat of inadvertency would still exist, but now Kennedy would have had a clearer picture of the situation on both sides. This is an example of how AI can lower risk by reducing the uncertainty that often results from pursuing more knowledge.

c. Kennedy's Decision to Pull the Missiles Out of Turkey

Kennedy had decided he was willing to pull the missiles out of Turkey regardless of ExCom's recommendations, despite the dangers to global prestige and his re-election. The influence of attribution theory led Kennedy to be a "problem-solver." In an effort to understand the attributes of his opponent, he sought to understand why the Soviets moved missiles to Cuba. He also attempted a historical prediction when he expressed pessimism about hopes that Khrushchev would move the missiles without U.S. prompting. The use of AI would have supported Kennedy's curiosity as to the circumstances behind the situation and the attributes of Khrushchev. As a result of (the use of) AI, Kennedy would have received probabilistic analysis of Khrushchev's reasoning for deploying missiles to Cuba. This data could have suggested that it had been done to offset the nuclear imbalance, or as a response to our deployment of missiles to Turkey. AI would have also addressed the historical prediction of Kennedy's pessimism by presenting a probabilistic profile of Khrushchev's decision-making character. This would have given Kennedy an insight into Khrushchev's decision-making pattern, perhaps highlighting vulnerabilities that could be exploited to effect removal of the missiles.

Kennedy's decisions were also influenced by his use of cognitive aids. His desire for a consensus within ExCom and his use of personal ideology and strategic beliefs were the aids he used. The existence of these aids within the AI system, albeit to a much greater degree, counters the tendency to use them prematurely by effectively extending the time available to assess good solutions. This is the method by which AI counters consensus striving. Although it is nice to have majority agreement, it may not be necessary for an optimal decision. AI presents quality information and recommendations at the earliest stages of the debate process. As Kennedy observed and proceeded with this process, his own ideology and strategy for action

would also have been affected by the use of AI. The exposure to AI probabilistic analysis would have forced him to reconsider his beliefs, thus changing, modifying or confirming them. As a result, AI might have allowed Kennedy to devise a course of action that did not include the Turkish missiles or the loss of credibility associated with their removal.

Kennedy's use of the "representiveness" heuristic influenced this decision. As described previously, Kennedy did not believe Khrushchev would budge from his position in Cuba. AI would have offered a more probabilistic analysis of Khrushchev against which Kennedy could compare his stereotype.

The use of the "availability" heuristic by Kennedy also played a part in this decision. As previously described, the events leading to this crisis, in Berlin, the Bay of Pigs and the Vienna Summit, caused Kennedy to develop certain opinions of Khrushchev. As such, Kennedy believed this latest crisis was yet another test of his will. AI would have countered this perception by offering probabilistic analyses of Soviet intentions that would have offered counter explanations to his previous experiences. By using AI, Kennedy would have had an impartial reference point for his initial feelings.

Dissonance-reduction bias or consistency seeking also influenced Kennedy. He certainly had his beliefs and perceptions about the missiles, but was willing to allow ExCom debate the issue up to the last minute. Regardless of their decision, he was going to select his own. The use of AI in this case would have been negligible. Kennedy was not willing to go to the brink of nuclear war to protect the deployment of obsolete missiles. The use of AI would have presented Kennedy with options that may have led him to an alternate choice then to give up the missiles.

Stress appears to have made Kennedy more vigilant in this decision. Although it would have been a hard decision because it threatened his prestige in NATO and at home, Kennedy was determined to do the right thing. This had already been determined, and all that was left was to decide when. His preference was to wait until the last minute just before things got out of control. AI would have helped him to monitor the situation closely in order to select the exact time to inform the Secretary of the UN of his proposal. But, more important, AI would have helped him devise earlier proactive measures before the crisis, that would have prevented this confrontation.

Finally, AI would have extended Kennedy's ability to understand the situation and his opponent better. This insight would have contributed to a better, or more informed, decision on his part. AI would have also challenged him to consider other courses of action that would have led him to revise or solidify his beliefs. Regardless of this input, Kennedy would have realized that the final decision was left to him.

Kennedy's decisions in the crisis may have been better ordered and coordinated had AI been used initially. It is possible that the Soviet motives and missiles would have been detected earlier through the analysis of intelligence collected from numerous sources. The use of simulations would have generated different Soviet courses of actions, allowing for a counter reaction by the U.S. to be developed before the crisis began. If in Kennedy's first decision - that "the missiles must go" - AI had offered options that did not further escalate the situation, then Kennedy's concerns about inadvertency would have been for naught. Both sides' forces would have remained at a lower alert level, and, in all likelihood, stayed geographically separated. Had the situation not reached crisis proportions, with a direct threat to U.S. security, Kennedy would not have felt coerced to trade away the missiles in Turkey. In fact, AI would have recommended removal of the missiles at an earlier time. Another early recommendation from AI would have been for the U.S. to send clear signals about her position in the hemisphere and her strong belief in the Monroe Doctrine. This would have left the Soviets with no doubt of the U.S. commitment. Lastly, if the U.S. could have used its cues from the AI system and exposed the Soviets "secret" missile deployment to the world, then it might have fouled their plan. The use of AI to predict would have given Kennedy the ability to prescribe a foreign policy that avoided or mitigated the effects of this confrontation, and could have proactively sought less risky solutions still benefiting the U.S.

3. Artificial Intelligence and Kissinger's Cognitive Decision-Making Process

a. Kissinger's Decision to Order a DEFCON III Alert

Kissinger directed a DEFCON III Alert during the Yom Kippur War to send a political signal to the Soviets. The Soviet response could have been escalation, making this decision highly risky. Several cognitive impediments were present and have been shown to influence this decision. One impediment was attribution theory, which influenced Kissinger to

seek control over the environment. His attempt to understand the Soviets' moves in the region by framing them in conceptual terms, led him to surmise that the Soviets still had expansionist motives. AI would have affected this perception by providing him with probabilistic analysis of the "why" of the Soviet decision. AI would have presented the Soviets regional concern to maintain a foothold in the Middle East, especially in light of the fact that they had already lost two wars here. AI would have focused Kissinger's attention on the weapons the Soviets had sent to the area and the training they had provided the Arabs. AI would have also articulated the leverage used against the U.S. with the Arab oil embargo. The use of AI by Kissinger would have assisted him to see the scope of Soviet and Arab activities in the region and their implications. Kissinger would have confirmed in his own mind that the Soviets had expansionist ideas, thus influencing the context in which he would base future decisions.

The value-complexity impediment also influenced Kissinger's decision. Kissinger knew he had to make a decision, because he knew the U.S. had to act to protect her interests in the region. He relied on past knowledge on how he approached crisis management, and decided he needed to send a clear and dramatic signal to the Soviets. Making a decision is good, but making it before all analysis has been completed can mean overlooking something important. AI would have made him aware of other options before making a rash or uncalculated decision. It would have provided him with a fast analysis of numerous options and their requisite risks. This might have led him to opt for a less provocative option than the nuclear alert, a move that can evoke a dangerous reaction toward escalation.

Because Kissinger acted under time constraints, he relied on cognitive aids to assist his decision-making. He used historic analogies, rationalized connections between concepts and behaviors, and used his ideology and general principles to guide the process. Again, the premature use of cognitive aids restricts the information flow to the decisionmaker. AI incorporates all these cognitive aids in its capabilities, but to a far greater extent. This closes the gap on making a decision without a full analysis for the decisionmaker, providing him with good information to make quality decisions in a time-sensitive environment. AI would have presented recommendations based on probabilistic analysis that would have given Kissinger quality input and thus delays or eliminates his use of cognitive aids as an assistant. As a result, Kissinger might have considered a less provocative signal.

Kissinger was also influenced by the "representiveness" heuristic, a stereotype of the Soviets that had developed over many years of dealing with them in international affairs. AI would have presented Kissinger with probabilistically grounded profiles of the Soviets that would have countered his initial perception of them. This would have challenged Kissinger's beliefs by forcing him to confirm or modify his perceptions. As a result, Kissinger, again, may have selected a course of action that was less threatening to their global status.

Kissinger was also influenced by the "availability" heuristic, giving import to a perception that had been formed from numerous experiences with the Soviets. As mentioned above, AI would have presented him with an impartial analysis that would have challenged his pre-conceptions. Again, as a result of using AI, Kissinger might have selected a less provocative option.

Kissinger was also strongly influenced by dissonance-reduction bias. His years of experience in foreign policy had nurtured some very strong beliefs about the Soviets. These beliefs were not easily changed, and had great influence on others. AI would have presented him with analysis to challenge these beliefs and to allow him to modify or confirm them. The most important thing AI could have done was to force him to contemplate and optimize his beliefs. The result of this might have been the creation of a different agenda for his meeting with WSAG, thus changing his influence over the group.

Situational stress influenced Kissinger by making him more vigilant in his decision. During this crisis there were numerous domestic and international distractions weighing on the administration. AI would have assisted Kissinger's vigilance by presenting him with numerous options that had been well analyzed and represented mainstream thought. AI can assist the decisionmaker by handling mundane tasks. It also keeps important issues in the forefront, and would have helped Kissinger stay organized and focused on the important things. As a result of using AI, Kissinger might have considered the use of other less obtrusive options against the Soviets, because he had been able to stay focused and spend his time examining the premiere issues.

In the final analysis, Kissinger was correct in the beliefs he developed from experiences in the international arena. The use of AI would have countered his initial tendencies to retreat to an old paradigm, and provided a more probabilistic analysis against which to consider a more appropriate response. AI would have also provided for quality input within the

time-constrained environment, therefore alleviating the use of aids in his decision. As a result of AI, Kissinger might have recognized the wisdom of a less confrontational response.

b. Kissinger's Decision to Delay Resupplying Israelis

Kissinger's decision to delay the Israeli resupply was based on his desire to create circumstances favorable to the U.S. in the Middle East. The influence of attribution theory is evident in Kissinger's effort to understand his environment and the consequences of the social situations among the regional players. Kissinger uniquely perceived each country as a rational actor that made adjustments for different circumstances; this served as his reference point in regional undertakings. Kissinger was frustrated with the lack of progress in the peace negotiations and decided that, because Israel would most likely emerge as the victor in the conflict, he needed to weaken their position to force them to acquiesce to U.S. objectives.

AI would have given Kissinger a more balanced analysis in perceiving each of these countries by characterizing their internal decision processes in light of the current situation. As a result, Kissinger would have been made aware that a prolonged battle would severely weaken the Arab states, thus initiating a Soviet response in their favor. The Israelis might have become desperate and thus untrusting of the U.S. without the resupply, thus taking matters into her own hands. As a result of this prediction the U.S. might have severely damaged her reputation, giving way to a new Soviet position in the region. AI might have also recommended that the severe weakening of Israel would have been detrimental to the U.S.'s regional position.

The effects of value-complexity influenced Kissinger to make a decision that satisfied all competing values. In a time-constrained environment, AI presents the decisionmaker with analysis that allows for the examination of quality information prior to the decision point. AI counters the tendency for a decisionmaker to feel obligated to satisfy all participants by receiving this quality information. AI would have given Kissinger quality analysis of prudent options that challenged competing recommendations, thereby prompting him to make a high-quality decision. As a result, AI might have ensured that Kissinger carried out Nixon's directive and not delayed the supplies.

In this decision there is evidence that Kissinger resorted to the use of cognitive aids too soon, unduly influencing his decision. Kissinger relied upon his ideology and principles, applying these beliefs to create strategy too early in the crisis. Both he and Nixon

wanted a comprehensive Middle East settlement in place in the near future. Because Kissinger also felt that Israel would achieve victory in any clash with the Arabs, he was more concerned with avoiding a catastrophic defeat of the Egyptian Army and maintaining the viability of a post-war, U.S.-led peace settlement. We know that AI incorporates these cognitive aids and is better able to provide quick quality analysis to counter this premature use. Thus, AI would have helped Kissinger by presenting him with quality options early in the crisis, countering his inclination to use the timing of the resupply to bear on the outcome of the war.

The use of the "representiveness" and the "availability" heuristic also influenced Kissinger in this decision. Kissinger based his stereotype of the Arabs and the Israelis on there past reluctance to negotiate a cease-fire. This perspective had been developing since 1970 and his experiences in trying to get them to negotiate. Kissinger felt he needed to "tip the scales" in favor of U.S. regional interests, and force a settlement. AI would have presented Kissinger with a more contextual and probabilistic profile of the two countries, countering his stereotype and beliefs in support of this course of action. AI would have influenced him to immediately commence the resupply of Israel as directed by Nixon.

Dissonance-reduction bias also influenced Kissinger in this decision. Kissinger attempted to direct foreign policy in a manner consistent with his beliefs. He wanted to ensure the U.S. primacy of position in peace negotiations and the region. He believed that delaying the supplies would further this objective. Again, AI would have provided probabilistic analysis and options that challenged his beliefs in support of this course of action. AI would have presented arguments that forced reconsideration of this option.

Kissinger was also influenced by several functions of stress in the crisis. He exhibited an impaired attention span, cognitive rigidity and a narrowed perspective in his decision to, not only, impede the resupply to the Israelis, but also to ignore the Soviet resupply to the Arabs. AI would have helped Kissinger track the situation as it unfolded. It would have handled much of the mundane details and presented him with salient options for consideration. This would have decreased his rigidity and allowed him to view quality analysis that focused on major issues. As a result of the use of AI, Kissinger might have called for the immediate resupply of Israel, and would have had less motivation to ignore intelligence reports detailing the Soviets resupply of the Arabs.

Finally, the use of AI would have helped Kissinger to understand the parties to the conflict from a more contextual perspective. Had AI predicted that the delay of the supplies was not in the U.S.'s best interest, Kissinger might have been free to select an option not based on his beliefs about the region. AI also extended Kissinger's ability to track the numerous developments of the situation, thus allowing him to focus on the most important issues.

If AI had been used at an earlier point in the crisis there may not have been a need to resupply the Israelis or go to DEFCON III. However, the U.S. was unable to arrive at a coherent understanding of the situation from reported intelligence reports. AI, in conjunction with national intelligence assets, would have identified and reported on Arab and Soviet activity early in the crisis, giving the U.S. an opportunity to expose their military preparations, and to work toward a diplomatic solution. Also with this exposure, AI would have afforded the U.S. the ability to predict possible turns of events in the region, and prescribe activities that favored her position. Had AI been used to assist in the resupply decision, the Soviets might have thought twice about supporting Egypt against this stronger Israeli position, thus acquiescing earlier to the reality of Israeli dominance in the region. This could have prevented the chain of events that led to DEFCON III.

4. Conclusions on AI and Cognitive Decision-Making

AI has shown that it can assist an individual's cognitive decisionmaking process. It increases his proficiency by providing him with both quality input and guidance to assist his execution of critical decisionmaking procedures. It also acts as a counter to cognitive impediments that influence an individual's decision process. This counter is in the form of abstract AI output based on probabilistic analysis. As this output is presented to the decisionmaker, it challenges his beliefs and allows him to reflect on whether he wants to accept or modify his decision. AI not only prompts and steers the decisionmaker, but unveils his cognitive beliefs to him, thus allowing him to solidify his position.

Herbert Simon discovered in his research, "When people must make decisions under conditions that overload human thinking capabilities, they use opportunistic strategies and tactics of 'optimal least computation search' rather than 'optimal shortest path search.'"[3] This particular

[3] Raj Reddy, "The Challenge of Artificial Intelligence," *Computer*, (October 1996), p. 93.

characteristic of AI intercepts an individual's tendency to rely on paradigms or old habits, and allows him to render a more balanced decision. AI also extends the capabilities of a human's cognition and decreases his stress by constantly tracking the situation, handling mundane tasks, and keeping important issues prioritized and visible for decisions, an especially important role during long stretches of human fatigue.

The use of AI in a time-constrained environment gives the individual an opportunity to see other courses of action before he must act. AI's use of programmed knowledge and its ability to reason and learn decrease a decisionmaker's risk by decreasing the uncertainty of the situation. This capability can only increase his chances of achieving a high-quality decision. Lastly, AI can expose a decisionmaker if he makes a less than optimal decision choice, therefore pressing him to justify any off stream decisions. Thus, AI adds legitimacy to the execution of the decisionmaker's office, and decreases the influence of politics.

C. ARTIFICIAL INTELLIGENCE AND GROUP DECISION-MAKING

1. Artificial Intelligence on Group Impediments in Decision-Making

This section will discuss the effects of AI on the impediments in the group dynamics decision-making model. It has been demonstrated that these impediments influenced ExCom in its conduct of foreign policy decision-making. If we first look at the limitations of a small group, we see that its very size restricts the range of values, beliefs and attitudes that can be present, and, thus, reduces the amount of knowledge and analytical skills that can be brought to bear on their uses. Its size also provides fewer opportunities for sub-grouping and inter-group conflict, thus limiting debate and the voice of dissent probing further scrutiny of the options. AI can remedy these small group shortfalls by presenting numerous recommendations that are based on a wide range of knowledge and perspectives. This allows the AI system both to reason and to learn, thus increasing its intellectual foundation for analysis. This gives the group access to a broad spectrum of analyzed options than they would have created. Also, AI provides simulation analysis of debates within the group, the group extended with additional personalities or virtual groups, with pre-selected characteristics. Inter-group conflict can occur at a high-rate of speed each time an issue is tabled. This does make up for the limitations caused by the size of the group.

One impediment, popularly known as "groupthink," can influence output from the group (see Figure 5.4). A high-stakes crisis exerts cohesive psychological pressures on the members of the group. This forces members to conform to group norms, thus undercutting the individual member's normal investigation and debate. AI counters the symptoms of groupthink by becoming an equalizing medium. It acts as an honest broker for ideas and presents analyzed options without the usual pressures that are exerted on an individual. AI also presents options based on probabilistic analysis, therefore keeping the group from getting too optimistic. AI also keeps important issues in the forefront, preventing members from losing track of an issue. Most importantly, AI engages the group, giving everyone equal input status and countering any attempt to restrict adverse information. Though AI cannot totally counter "groupthink," it at least diminishes the condition that propagates it.

Eight Symptoms of Groupthink

1. Illusion of invulnerability – creates excessive optimism, encourages taking risk
2. Collective rationalization – to discount warnings which might lead to reconsideration of decisions
3. Belief in inherent morality of the group – may ignore ethical or moral consequences
4. Stereotypes of out-groups – put a dangerous label on the adversary
5. Direct pressure on dissenters – question their actions as disloyal
6. Self-censorship – each person may tend to minimize his doubts and counter arguments
7. Illusion of unanimity – augmented by the false assumption that silence implies consent
8. Self-appointed mind guards – members who protect the group from adverse information

Figure 5.4. Eight Symptoms of Groupthink. Source: Janis, pp. 203-206.

Another impediment that effects members of a group is the tendency to overlook critical uncertainties pointed out by lower level experts due to oversimplified summaries of analysis. AI prevents this by incorporating the numerous details of its own analysis. It protects the user from getting sidetracked with mundane or trivial tasks, keeping him focused on the larger, more important issues. Sometimes these details are essential to the understanding of bigger issues, AI assists the user by keeping track of the details or when other distractions arise or when fatigue sets in.

The desire to mold one's views to those of their boss is another impediment that influences members of the group. AI counters this to some extent by fostering an apolitical environment. AI presents the group with impartial recommendations based on probabilistic

findings, which carry the counter or confirmation to issues or views under discussion. One may still choose to side with his boss because of his belief that AI will pick up the slack as a counter-force, perhaps causing him to seek credit for his alignment with the superior and being a team player. However, AI can also offer analyses of simulations about the personality of the group. The results of this may be that an individual is made to dissent from his boss's position – "virtually." This may undercut his political aspirations, forcing him to explain his position.

Another impediment that carries enormous weight in group interaction are the power and prestige differences between members. They influence relationships and interactions, as well as affecting the performance of tasks necessary for analysis and appraisal. This impediment also aligns group members to primary actors. AI counters such activity by engaging the group to deal with issues based on probabilistic analysis and priority, not agendas being pushed by participants. Also, any "camp" that forms would have its logic scrutinized by both AI simulations and analysis, and the other members of the group. However, AI is programmed to conduct its functions within certain parameters, the definition of which is susceptible to political bias. The issue of politics still remains an intangible human force that can convert AI based solutions to its own needs.

Group pressure can be another impediment that causes individual members to suppress their ideas, usually out of fear of recrimination, anxiety about loyalty, or fear of expulsion. AI counters this by presenting probabilistic analysis that equalizes members of the group. The group's focus would be on the AI "reality" to see and understand the situation, but also to submit ideas for test and analysis. It is essential that debate is able to occur and an element of dissent exists to flush out good recommendations. AI allows users to submit input for debate without the threat of backlash.

In this section the impediments of group dynamics and decision-making are discussed in light of the solutions offered by the AI model. Specifically, the introduction of AI capabilities into group dynamics causes a significant decrease in the effect of the impediments influencing the group. AI has the potential to lessen the impact, if not eliminate, the impediment on the decision-making process. Using AI for group decision-making therefore enhances the group dynamic, allowing the advisors to give high-quality advice to the President. To further test this hypothesis we will consider it on both ExCom and WSAG.

2. Artificial Intelligence on ExCom's Decision-Making Process

a. ExCom's Decision on a Timeline for Action

One of ExCom's first major decisions during the crisis was to establish a timeline in which to recommend a course of action to Kennedy. Two predominant group impediments influenced ExCom to establish an unrealistic timeline. The first was that, it was a small group thrust into a high-pressure high-stakes situation, causing a psychological bond on the group, or "groupthink," to develop. This resulted in little debate over the factors contributing to the establishment of a realistic timeline. This indicates that the group was focused on other events and was willing to accept greater risk in this area. Even after intelligence proved that the 2-week timeline was too long, group members refused to alter this decision. The use of AI would have prevented the omission of this major factor from discussion. Whenever a plan is developed the time issues are usually considered first. AI would have maintained updated information so as to prevent early decisions from becoming stale. When the intelligence changed, it would have alerted the group to revisit the issues. During the initial surprise of the crisis, AI would have quickly brought the group "up to speed" on the status of the situation. This would have mitigated feelings of victimization in a crisis that demanded they render immediate recommendations. AI would have maintained the focus of the group, keeping the important issues visible. This fundamental process would impose organization on chaos, thus decreasing the tendency toward groupthink. AI would have also engaged the group with a variety of options for consideration. This interaction thus engendered would have kept the group from reverting to rash action, and initiated a process of thinking through the options. AI would also offer the capability to see any plan worked out in simulation. Lastly, AI has the ability to profile members in the group and predict their position on any issue being discussed. This feedback delineates each individual's position, which would decrease the tendency to politicize an outcome. As a result, AI would have engaged the group for a decision on a timeline in light of the importance of the situation, and kept it visible as events changed.

The second impediment that affected this group was its size. Though members glossed over the need for a timeline, if more members were utilized in the group then maybe it would have been identified. AI counters small group limitations by applying programmed knowledge to reason and learn from the current situation and provides the group with a wider

range of values, beliefs and attitudes. This enhances the group's abilities despite its size and profile, thus allowing it to achieve the results of a larger group with a wider range of characteristics to apply to analysis. AI would have increased the "intellectual signature" of ExCom, providing greater diversity of input to the debate. The use of AI would have thus assisted ExCom in identifying the need to establish a credible timeline. If in this situation AI was used, then it is possible that the timeline would have been shorter due to the discovery of the warheads on the island. This would have increased the pressure on ExCom to act, and could have catapulted them to favor a surgical strike. On the other hand, AI would have helped them make a faster decision on a different option that would have been less confrontational.

b. ExCom's Decision to Pursue the C^2 of the Soviet Missiles

ExCom failed to pursue the issue of who was controlling of the nuclear warheads in Cuba, let alone whether they were even on the island. ExCom assumed the missiles had not yet arrived based on information from the CIA that the bunkers in which they would be stored were not yet completed. Here uncertainties, and thus risk, existed; however the group chose to ignore it. This was due to several impediments that existed within ExCom. They exhibited cohesive psychological pressure or groupthink, also members missed critical uncertainties because of oversimplification of lower level summaries, and members conveniently aligned themselves with the President. AI would have countered groupthink in the same manner as discussed above. AI would have prevented the issue of command and control from being overlooked or put aside, because members did not comprehend its significance. As a result, AI would have presented options to not pursue a surgical strike due to the potential for field commanders to launch the missiles. Clearly, AI would have emerged and engaged the group to contemplate more seriously the issues of command and control of the warheads.

ExCom members also suffered from an oversimplified CIA analysis of the situation transmitted by subordinates. This pegged the incomplete bunkers as the indicator for no warheads on the island. AI would have developed options based on scenarios that took into account unbuilt bunkers to house the missiles, especially the possibility that they might be stored in another location. The results of this would have prompted different considerations by ExCom, thus possibly throwing out the surgical strike option.

After Kennedy prudently assumed the warheads had arrived in Cuba, ExCom seemingly dropped the issue. The members gave the issue the same priority Kennedy had, and then assumed it away. In contrast, AI would have presented information to the group based on probabilistic analysis and appraisal. This would have presented them with a more balanced look at the significance of the issue, and prompted them to take further action. The use of AI in this decision by ExCom would have reduced the effects of groupthink and engaged its participants to address the important issue of C^2 of the missiles.

c. ExCom's Decision to Overlook Contingency Plans

ExCom failed to develop contingency plans in case of a nuclear exchange. This resulted from the group's complacence about going to nuclear war. Senior advisors who had the power and prestige to lead and set the agenda of the group were driven by this attitude. If AI had been used, need for contingency plans would have been apparent as a predictive need and a routine activity for conflict. AI would have engaged the group by suggesting several plans, possibly starting with the invasion of Cuba. With the complexity of the situation increasing, and the large organizations of both countries possibly moving toward inadvertent incidents, the danger level was on the rise. AI would have tracked this and updated the system to focus the group on the growing danger and the necessity of contingency plans. The use of AI would not have allowed contingency planning to have been cast aside.

Finally, the use of AI by ExCom would have prevented these three decisions from being subverted by personalities or agendas. In a crisis, many complex activities are taking place, and the stress from mental overload begins to wear on the members of the group. The cohesive pressures and the level of risk they are willing to accept both increase. AI would have assisted ExCom by keeping much of the mundane activity out of their focus and by steering it toward work on key issues. While the impediments would have been predominantly countered by the capabilities of AI, political influences would have continued to work issues after the AI recommendation, the very nature of our political system. What influence would AI have if it had been used prior to or during the early stages of the crisis? AI would have tracked the developing situation and presented options as changes evolved. This would have given ExCom advance warning to take action and prepare options before the situation reached crisis level. AI would have been able to develop and simulate options to counter the missile movement or the Soviet

perception that they could deploy these missiles in secret. The U.S. could have also issued a more specific policy regarding her position on the Monroe Doctrine and our hemisphere. If, after the start of the crisis AI had been used to develop a timeline for action, then it is possible that the there would have been shorter deadlines for a decision to prevent the Soviets from establishing missile sites. The recommended action that kept coming to the forefront was a surgical strike. It was not known until later that not all the missiles could have been destroyed, thereby risking a chance for a retaliatory strike. AI would have presented the probability information at an earlier time, and would have offered other options backed by simulated results, which might have guided ExCom away from the surgical air strike option. The issue of C^2 over the warheads would have also been addressed earlier, and separate pieces of intelligence would have been consolidated and analyzed for a prediction about whether the warheads had arrived in Cuba. By melding intelligence from numerous sources, AI might have confirmed or predicted that the missiles had arrived and that command and control was delegated to field commanders. At a minimum, AI would have presented this recommendation as a possible situation that the U.S. might encounter. This would have caused the U.S. to again consider different options and timelines. This would have also highlighted the likelihood of inadvertency, and established the need to begin developing contingency plans. The use of AI not only would have enhanced ExCom's ability to track the crisis and watch it unfold, but it would have allowed them to act before the situation escalated. As the crisis developed, AI would have created a better environment in which to make decisions. In conclusion, AI certainly would have enhanced ExCom to advise the President.

3. Artificial Intelligence on WSAG's Decision to go to DEFCON III

WSAG was influenced by several group impediments in making the decision to go to DEFCON III. These impediments surfaced because the group thrust into the crisis was small. This was also a unique situation in that time was so limited – 1 hour. This led to very little time being spent on group analysis, with only a quick exchange of ideas before the decision was made. WSAG, in a sense, did not have time to achieve any group interaction. They essentially arrived with their individual expertise and engaged in a decision-making session with limited options.

The impediments that influenced this group besides its small size were the cohesive pressures put on the group by the situation, the lack of access to, or oversimplification of analysis from subordinates, and the alignment of one's views with those of their boss. The size restricted the range of views, beliefs and attitudes available to the group. The cohesive pressures on the group caused members to accept more risk than necessary in their analyses. The lack of time also restricted the flow of information needed to comprehend the problem, therefore limiting the members to the expertise they brought to the table. The members also aligned themselves, to some extent, with Kissinger's position. This limited amount of time caused them to work from his dominating course of action.

The use of AI could have "virtually" expanded the group's knowledge, reasoning and analytical skills to introduce options other than the predominant one of DEFCON III. The outcome of the use of AI would have been to expose the group to additional options in the short time they had, versus the limited debate of Kissinger's course of action. The disadvantage of the time constraint also limited the time to analyze alternative options. AI would have provided these options and an opportunity for a more balanced debate prior to any decision. Other plans might have included an alert of only a selected number of forces instead of a worldwide alert of all U.S. forces. This choice would have prevented or delayed public disclosure of the alert and thus the scrutiny that came with it.

4. Conclusions on AI and Group Decision-Making

AI demonstrated that it could improve group dynamics in the conduct of foreign policy decision-making during a crisis. Its ability to counter group-influencing impediments allowed the group to effectively extend its size and receive uncensored information to conduct a balanced analysis of options. AI also assisted members to engage in the process on their own, with their own ideas, reducing any fear of the risks of participation. Throughout the crisis, AI can be seen to base its recommendations on probabilistic analysis, therefore reducing the tendency for individuals to fall back on their biases and "agendas." The use of AI would have consistently and constantly engaged the group not only to think critically about their decisions, but to justify them as well. The play of politics is still one issue that AI can only partially address. By using it, it will seek to expose the logic of one's decisions in comparison with AI reality.

D. ARTIFICIAL INTELLIGENCE AND ORGANIZATIONAL DECISION-MAKING

1. Artificial Intelligence on Organizational Impediments in Decision-Making

This section will analyze the impediments of the organizational decision-making model in light of the capabilities of AI. As a result of the structure and culture of these organizations, impediments have evolved in their behavior influencing their decision-making process. As these organizations function by routine, the stress of a crisis on their system can further intensify these impediments.

The first impediment is when the institution focuses on its own values, interests and goals above those of the policymaker. This creates a motive to control vital information to preserve them, which may conflict with the policymaker's objectives. The use of AI can keep the organization's output focused on the objectives established by the policymaker. It maintains visibility of each member's recommendations, highlighting those inputs out of line with the supported objectives. This decreases bureaucratic politics, but all politics entwined in an individual's final recommendation will always be difficult to understand.

Another impediment is the motivation to advance parochial interests in policy options at the expense of other organizations. The use of AI counters this by comparing each organization's goals to the policymaker's objectives. The inputs of each organization is analyzed and plotted to ensure that the correct input is being received. AI assists organizations by showing those areas where they can assist one another. By keeping organizations accountable for their actions and exposing their activity, AI can mitigate some of the political drivers in organizational crisis handling.

A third impediment, which closely aligns with the second, is when an organization sells their recommendations with oversimplification and rhetorical exaggerations. The use of AI would attempt to make "honest brokers" out of them. Any submitted recommendations would be analyzed using probabilistic data, thus rendering a more balanced analysis to the decisionmaker. By knowing that their output will be further scrutinized, the incentive for the organizations is to submit more impartial and realistic recommendations.

A fourth impediment is that some bureaucratic actors carry more power and control than others. This gives them undue influence over the process, and allows him to steer issues in his favor. The use of AI, as stated above, provides a variety of recommendations for further

scrutiny. AI's capability to analyze organizational output forces users to conduct a more rigorous selection process. The senior actor would also champion this scrutiny, because his reputation would be on the line.

A fifth impediment is the "logrolling" that takes place between organizations to protect their various interests. Again, AI scrutinizes the input of all participants. Their own interests would be made more transparent and the incentive would be greater to support the policymaker's objectives.

A sixth impediment is the control exerted by the bureaucratic actor over the priorities of the organization. He guides the intensity with which the organization participates in supporting the policymaker's objectives. As above, AI scrutinizes the organization's recommendations. AI acts as the honest broker, applying its critical eye to the organization's initiatives and resources. It assists the senior actor to assign priorities within the organization in order to execute the tasks assigned to them. AI is able to compare organizational goals with the policymaker's objectives and establish directives to mediate conflicts of interest. The need to prioritize is based on the scarcity of resources. AI makes them more useful by virtue of its high-speed and extensive capabilities.

A seventh impediment is the nature of an organization to foreshorten their search requirement in providing information for the tasks they are assigned. This is based on the organization's cultural imperative to work within a routine, stopping at the first apparently acceptable solution. AI makes it easy and fast, and, to a great extent, transparent, to pursue numerous advanced searches, analyses and recommendations. AI increases the quality of the data to be used to formulate the organization's output. This capability allows the organization greater flexibility to work with innovative options to support AI in the above counter impediment activity.

Organizations rely on SOPs and policy routines to formulate their input to the policymaker. This controlled input is usually a poor attempt to address novel issues; as the crisis moves forward, the input becomes inappropriate and threatens to undercut the thinking on the issue. An organization relies on SOPs and routines because it needs to coordinate and synchronize a complex network of efforts delegated to sub-units. AI assists all members of the organization to function at a faster pace, doing more with higher quality information. This

extends to all the work they conduct, allowing for input with greater complexity, sophistication and innovation for the policymaker.

Lastly, the objective of bureaucratic politics, to win a particular course of action, becomes an end unto itself among senior actors. They become so consumed in the give and take of politics that they often lose sight of the original issue. AI can track and update all situational circumstances, evaluating changes and alerting members to new suggested courses of action. AI keeps the policymakers engaged in the process. Following previous discussions, AI increases their comfort level by keeping them focused on the big issues. AI assists the coordination between organizations at lower levels, so as issues routinely cycle up from within the organization they represent a higher quality product with less ambiguity.

In this section I established how AI capabilities can influence organizational impediments. This use of AI counters internal restriction and political forces in an organization's decision-making process. In comparison with this abstract model, AI quantifies and qualifies output to a degree that is useful for the senior actors. Due to its capabilities, AI keeps policymakers focused on the essential issues. To further test the effects of AI we will consider it in the context of the two case studies.

2. Artificial Intelligence on Navy Decision-Making During the Cuban Missile Crisis

a. The Decision to use ASW Forces During the Crisis

At the time of the crisis, the Navy was lobbying to develop further its ASW capabilities. As naval operations became more predominant in the crisis, and in the conduct of the blockade, the Navy opted to use ASW to increase its search capability. The procedures to conduct ASW operations were quite aggressive and were not modified to address the sensitivity of the situation. When Kennedy and McNamara established parameters to prevent inadvertent confrontation with the Soviets, they were unaware that ASW forces interpreted their mission and conducted operation at a more serious level than expected with the parameters in place. ASW activity led to several incidents that could have led to premature conflict. One organizational impediment that explains why these operations were dangerous to the sensitivity of the situation was their use of procedures and SOPs. When the ASW forces received the order to conduct the

operations they did so according to SOP with little consideration of the context of the crisis. This was not a routine situation and they were unable to adapt to it.

The use of AI would have assisted the leaders of the ASW forces to have an effective overview of the "big picture" from the strategic-level, to sensitize them as to importance of preventing inadvertency. Their SOPs and procedures would have been analyzed, and adaptations would have been recommended which were in-line with the intent of the policymakers. Once these changes had been approved they could then be transmitted to the fleet for immediate execution. AI also would have given ASW force leaders the opportunity to simulate changes to the SOP to help them predict how the Soviet subs would react. The use of AI would have changed their SOP so as to forgo having Soviet subs surface in the face of U.S. ships, preventing their humiliation and the resulting reluctance to surface. Further, AI would have recommended that non-lethal depth charges not be used on the subs to signal them. Also, AI would have most likely recommended that, once the subs turned and were headed away from the blockade line, they not be aggressively pursued. The use of AI may have also recommended that ASW aircraft not carry live torpedoes, to protect against the chance of a mishap. AI would have also made the procedures of the ASW forces known at the policymaker level, resulting in more specified directives. The use of AI in this situation would have decreased the chance for the ASW forces to have inadvertently started a nuclear confrontation.

Another impediment in effect during this situation was the ability of a senior bureaucratic actor to control information and the process to steer issues in his favor. Admiral Anderson manipulated the amount and detail of information provided to Kennedy and McNamara to further his agenda, the use of ASW forces in the crisis. The use of AI would have prevented this manipulation by providing the policymakers with analyses of the procedures of the ASW forces. Admiral Anderson, knowing that AI would have put his information and recommendations under close scrutiny, would have been more forthcoming about his recommendations and may have presented a plan to show how he intended the ASW forces to modify their SOPs and align themselves to Kennedy's objectives.

A last impediment that is drawn from this situation is the Navy's preoccupation with the minutiae of the ASW operation, which distracted them from the strategic picture. Their drive to use ASW caused them to ignore the facts of the crisis; had they been aware of the gravity of the situation they would not have delegated confrontation authority to lower-level

commanders. AI would have kept Admiral Anderson engaged with the process, and alerted him to the important issues. If the President wanted to avoid inadvertency, then AI would have alerted Anderson to this potential threat and offered recommendations. AI would, at all times, have kept Anderson and his activities focused on the policymakers objectives, giving him feedback to show how his decisions aligned with these.

The use of AI in this situation would have allowed the organization to follow the objectives of the policymakers. AI could have arrayed the strategic picture for them so as to allow them to work with less ambiguity. It also would have allowed them to couple these strategic objectives to their SOPs and procedures. The scrutiny of recommendations that AI would have afforded policymakers can cause organizational recommendations and their representatives to be less political. This would have provided the policymaker with more balanced analyses and alignment of their requirements to the actions on the lower end of the organizational spectrum.

b. The Decision to Establish a Blockade Line

Kennedy's decision to establish a blockade line closer to Cuba was designed to give both countries more time[4] to work through their decision-making processes. Organizational resistance from the Navy, who, in their interpretation, did not want to be put at a disadvantage to protect their ships, delayed the decision to move the line closer to Cuba, thus threatening Kennedy's strategic intent. Several impediments led to this reluctance, one of which was the conduct of the operation according to SOPs and procedures. The Navy executed the blockade according to SOP. When Kennedy's intent changed, and he wanted the blockade moved to prevent premature contact with Soviet ships, the Navy leadership did not alter their directives to their ships. These SOP's were highly aggressive in searching out, approaching and boarding foreign ships. The Navy leadership manipulated the reason to stay at the 500 mi. range and allowed their ships to continue following SOPs, both of which threatened the President's intent. As addressed in the previous decision, if AI had been used and Kennedy and McNamara had been made aware of the threat the Navy's SOPs posed to their objectives, then they would have directed the Navy to make the appropriate changes. AI would have made the military chain of command aware that their procedures ran counter to the strategic intent, and needed to be

[4] The closer to Cuba, the longer it would take the Soviet ships to encounter the quarantine line.

changed. Again, AI would have recommended changes and simulated more passive procedures that were less at risk to initiate a confrontation and were more in line with the President's objectives.

Another impediment to organizational decision-making is the pervasive influence of parochialism. Admiral Anderson and Admiral Dennison appear to have been under its influence when they countered White House attempts to micro-manage the blockade. They managed to skirt the parameters of the blockade to protect their own interests, which they thought were the interests of the Navy. Anderson misled McNamara when he told him that it was not yet safe to move the blockade back to the 180 mi. line. This was done so that the Navy could intercept and board a Soviet sub, and capture a nuclear warhead to gain recognition for themselves and their organization. The Admiral's thus directed the Navy, in the "deception" of bureaucratic politics, to conduct aggressive operations outside the 500 mi. line, regardless of the President's wishes. The use of AI would have made the Admirals aware that their operations were contradictory to the President's objectives. The President would have also been alerted to the aggressive intercept procedures. AI would have also submitted the Admiral's recommendations to further scrutiny, thus making the President aware of the capabilities of the Navy and their assessment to move closer to Cuba. The ego of Admiral Anderson was the engine behind many of his actions. AI would have countered his decisions by further scrutinizing them against logical probabilistic analysis, making him justify his defiance of common sense. In this situation, AI would have made Kennedy and McNamara aware of the actions by the two Admirals, comparing them to their strategic objectives. Also, if the Admirals had known their decisions were going to be closely scrutinized and visible to the policymakers, then they may have altered both their intentions and directives to the ships.

One last impediment that effected this situation was that Admiral Anderson's involvement in bureaucratic politics caused him to lose site of the bigger international situation. By putting his priorities ahead of the President's, he failed to understand the need to give Khrushchev more time. The use of AI would have kept the Admiral's decisions in line with the President's objectives. Also, AI would have kept him engaged in the process and the changing international situation, forcing him to focus on the most important issues.

The use of AI in this situation would have shown that the Navy's use of their ASW SOPs ran counter to the President's intent. Also, AI would have scrutinized the Admirals'

decisions, thus playing the "honest broker" for the President and in the decision-making process. AI would have kept the hierarchy informed as to the changes in the strategic situation and assured that decisions made were keeping with the policymaker's objectives. Again, AI would have coupled the policymaker's objectives to that of the organization's and her bureaucratic actors.

3. Artificial Intelligence on CIA Decision-Making during the Yom Kippur Crisis

The CIA was unable to detect the attack on Israel in a timely fashion due to its organizational impediments. Most of these impediments were rooted in the poor guidance they received from Kissinger, the pseudo-senior bureaucratic actor for the intelligence organization. One impediment that influenced their ability to predict the invasion was the control exerted by Kissinger over the priorities the organization was to function under. These priorities guided the intensity with which the organization supported the policymaker. Kissinger failed to stay on top of the organization's need for hypotheses under which to function. He did not effectively direct their efforts in support his diplomatic intentions, causing them, therefore, to misread the intentions of Egypt and Syria. Because of his preconceived ideas as to their intentions, he was unable to give the broad guidance necessary to enable the organization to support him. The use of AI would have helped Kissinger to see other perspectives. By presenting him with probabilistic analyses, AI would have made Kissinger more aware of the situation. He would have seen the consolidation of the hundreds of pieces of information that separately meant little, but in aggregate were of great consequence. Based on these analyses, AI would have then recommended several options that furthered his policy objectives. This may have prevented the war from starting or at least alerted the important players to the need for dialogue. Thus, Kissinger would have been able to forestall an Egyptian sacrifice to regain her pride.

Another impediment that corresponds to this one above deals with the exceptional power and control Kissinger had over the decision-making process. His abundance of influence over the process allowed him to steer issues in his favor. In this case, near-omnipotence seems to have failed him. The control he had over the organization allowed him to feed them directives to function under, and that which supported only his foreign policy decision-making objectives. What he received from them was less then accurate information, that it was unlikely Egypt would attack, the result of the guidance he gave them. The use of AI would have submitted the

hypotheses under which the CIA was to function to greater scrutiny. His input would have been analyzed in light of the US foreign policy objectives that he himself had developed. This could have allowed him to see them in a different perspective based on probabilistic data. The use of AI by Kissinger would have at least presented him a probabilistic reality from which to make decisions. This would have prompted the organization to consider contingency plans in support of the reasoned results. To this extent, AI would have alerted Kissinger and the CIA to the strong possibility of an imminent attack.

Another impediment shown in this failure was that the analyst conducted a limited search to satisfy the requirement. They conducted searches relying on historical lessons and information from their Israeli counterparts. These problem-directed searches were flawed because the conditions they were extrapolating from no longer existed. The use of AI makes it easy and fast to conduct in-depth searches and analyses. The analyst no longer has to stop at the first piece of satisfying information. AI adds quality to their searches and allows results to be analyzed in the context of the ongoing situation. These searches also provide options that can be simulated for varying courses of action, enhancing the analysts' output. In fact, AI threatens the need to maintain analyst in the organization. The use of AI increases the quality of the searches and analyses to refine the options used for decisions. To this extent Kissinger would have seen the inevitable indicators pointing to an Arab attack.

Another impediment was the CIA's application of standard procedures and policy to intelligence operations. The CIA formed a close relationship with the Israelis that provided the U.S. with intelligence. This respect for the *Aman* was the result of there past performances, and led to the CIA's complete dependence on them as a source. This action thus dampened initiatives to find other sources of intelligence. So, any gathering of information about the region sent the US to the *Aman* for assistance. The use of AI would have given the CIA its own capability to search out and meld numerous sources to receive analyses based on probabilistic data. The CIA would have received raw data from the Israelis and conducted their own analysis, thus determining for themselves whether an attack was imminent. AI gives the user a highly rapid, complex and sophisticated capability to assist him in taking the guesswork out of analysis. AI would have decreased the uncertainty, and thus the risk, for the decisionmaker in this crisis.

A last impediment that afflicted this intelligence failure was the consuming nature of bureaucratic politics that distracted Kissinger from the larger international situation. Kissinger

ran a centralized foreign policy apparatus that was overburdened with insignificant activity. Watergate distracted Nixon, so Kissinger became the pseudo-President. The effort Kissinger extended to direct national security, foreign policy, and the presidency consumed him to the point that he could not, in the necessary detail, make quality decisions. The use of AI would have increased Kissinger's ability to stay focused on the important issues, and it would have helped him see them in a reality based on probabilistic analysis. If this had been the case, he would have had better defined directives for the CIA, providing him therefore, with useful intelligence. The use of AI in this situation would have given Kissinger the quality analyses and feedback he needed to either pre-empt any forthcoming attack, or warn the necessary parties to prepare forces and diplomatic dialogues.

In this section, the use of AI was shown to offer counters to the organizational impediments. Its use allows the senior actor of the organization to be kept engaged and focused on the important events of the crisis, without having to worry about mundane tasks. AI assists him by presenting a probabilistic reality of a particular issue as a reference point for him to reflect on his own objectives. AI also acts as an "honest broker," assuring that any decision or option that is outside the mainstream receives attention. This visibility obliges the actor to offer justifications, thus depoliticizing the process. Finally, the capabilities of AI offer an incredibly powerful tool to the intelligence community. Because, this organization's focus is on data collection and analysis, it is a crucial support for the policymaker's objectives. The quality increase that can be achieved with AI improves the decisionmakers ability to make high-quality decisions. If AI had been used in this situation, there might have been no element of surprise and the indicators of the Arabs would have been identified and interpreted in time to have sought a diplomatic solution.

4. Conclusions on AI and Organizational Behavior

In this section, AI has been demonstrated to enhance the quality of crisis decision-making. AI's ability to upgrade organizational capabilities increases this quality of input to the decision-making process. Organizations can, with AI, overcome their past weaknesses in supporting crisis decision-making because they are less hampered by bureaucratic routine and can keep their leaders focused on important issues and aligned to national objectives. The use of

AI allows the organization to adapt quickly to a crisis situation and contribute quality input to effectively support the foreign policy decision-making process.

VI. CONCLUSION

This thesis has dealt with the potential for a deeper relationship between man and machine in the realm of decision-making. This relationship need not be posed as one in which decision authority is entrusted to a machine. Instead we can recognize AI as an assistant, extending our own human capabilities. Thus, we will be able to create dynamic synergies between man and intelligent machine. AI is not the "Holy Grail," but rather an assistant to our judgement.

As a result of this thesis, we have increased our understanding and knowledge of the decision-making process on three specific levels. Within these levels we focused our attention on the informational needs and impediments that influence the process. This enabled the identification of decision-making nodes upon which to apply artificial intelligence.

As a result of the counterfactual analysis of two important crises, the case has been made for the utility of AI as an adjunct to our foreign policy decision-making. As foreign policy decision-making has been analyzed on these three levels, the application and influence of AI has been shown to increase the integrity of the decision-making process. AI has shown that it can effectively assist in the conduct of the critical procedural tasks necessary for the conduct of quality decision-making, and also that it can counter the impediments at each level to foster high-quality decision-making. But most importantly, AI has demonstrated how its capabilities can improve the competence of the decision-maker by both increasing his capabilities and that of his supporting structures.

In this study, the results of AI on the decision-making process have shown that it can, potentially, revolutionize it. It can work within a fast tempo to predict the activities of targeted adversaries, increasing our flexibility for action. AI keeps the user focused and engaged with the process and the important issues, ensuring that correct procedures are followed and options stay aligned with national objectives. Its ability to use multiple resources in the conduct of complex and sophisticated analyses allows AI to provide quality input and balanced analysis from probabilistic data.

Using AI means using software that thinks. This is the ability to use stored knowledge that reasons and, therefore, learns. A decisionmaker is always wrestling to reduce the risk in making a decision, AI can assist by reducing uncertainty, thus increasing its knowledge and

lowering the risk to the decisionmaker. This capability, combined with those mentioned above, will improve the decisionmaker's chances for making quality decisions.

The use of AI can potentially change the course of events through its prediction capabilities. By giving the policymaking system the foresight to anticipate the activities of interested parties, the U.S. can take actions to alter their perceptions, and thus manipulate their reactions. The power to do this can create circumstances that lead away from conflict. But, we can also create conditions that benefit American prestige and influence in any region in the world. This capability can ultimately lead to a plethora of options in support of U.S. foreign policy.

One of the most important findings of this study was of the impact that AI could have on reducing the effects of bureaucratic politics. AI presents the user with a probabilistic analysis of his recommendations in light of national objectives. This puts him on the spot to articulate and justify his decision if it is out of the mainstream. AI affords the user the ability to learn from its predictions while being exposed to the output of the system. This reduces the motives of organizations and political actors to act on their own agenda, and forces them to stay aligned to the national objectives.

I propose that, as one implication of the findings of this thesis, AI be considered in assisting the transition from one presidential administration to another. The assumptions under which AI works will help guide the policymaker by maintaining institutional knowledge and decision procedures that could assist the new administration. This will decrease the susceptibility of new presidents and their staffs to missteps in an early foreign policy crisis. For example, AI might have helped President Clinton, early in his first term, to avoid the problem of "mission creep" in Somalia, an intervention he inherited from President Bush.

Another finding resulting from this thesis is the need to reorganize and streamline our organizations and advisory groups in the decision-making process. It would be inefficient not to take full advantage of this technology. Our current mode of conducting decision-making can be improved by retooling our decision-making infrastructure with AI.

Through the use of AI, we have demonstrated the capability to increase the human threshold for using large quantities of information to make quality decisions. This example can be carried over and adapted to any organization's decision-making processes, both in government and the private sector. This effort would keep the U.S. on the leading edge of

technological advances by, enhance our societal well-being, position us to examine leaders in global markets, and perpetuate and extend democracy. These are appropriate reasons to encourage further allocation of U.S. Government resources to the study and development of artificial intelligence.

The methodology of this thesis is also an example to encourage others to conduct future studies that save man hours and resources by connecting the efforts of software engineers with those in decision-making roles. As a result of this thesis, I have presented critical analysis to narrow the research gap of software engineers, and to focus them on producing AI systems that support the specific needs of our policymakers.

A. FUTURE DIRECTIONS

The purpose of this closing section is to suggest applicable directions or ideas to pursue in the future. As a result of one's research and mental framing of a thesis, one comes across numerous theories and concepts that may not apply directly, but deserve recognition. These ideas are subject to or are part of the total reasoning and analytical process that creates the thesis, but do not contribute directly to the argument. So, I share these broad ideas.

It is necessary for AI to work from preprogrammed knowledge and assumptions. I see these assumptions as being developed by a specially selected committee representing numerous disciplines that can craft a consensus and produce a functioning data set from which to work. These assumptions are kept in a storage area covered by a "glass door" which allows them to be seen and reviewed, and also allows for modification as circumstances change. These assumptions would support a decision-making AI system developed as an adaptive-behavior system.* This is a situation in which the AI system adapts to the information environment. This system would be based on assumptions or rules that allow it (the system) to go forth in this environment to perform required functions. As the environment changes, based on these assumptions, the AI system can adapt to the changes. The current and future information environment is and will stay beyond the grasp or threshold of any human or machine's capabilities. This would necessitate the use of AI within an adaptive-behavioral system.

* These ideas about assumptions and adaptive-behavior were generated from a conversation with the CEO of Thinking Tools, Inc., John Hiles, in Monterey, California on August 12, 1997.

In an effort to program AI for the future it is essential it be given both assumptions and rules or parameters for reference points. It is therefore essential that national objectives, interests, grand strategies and other (possibly humanitarian or human rights) definitions be detailed clearly for AI activity. The importance is to give guidance to the development of all AI efforts, and that the product be based on objectives and definitions that are sanctioned. These must also be given careful consideration in their development.

The use of simulations to assist an AI system to predict can be a powerful tool, allowing us to observe the influence of our actions on an adversary and his population. As the U.S. conducts activities that manipulate the opponent's perceptions in order to stimulate a desired behavior, this information is fed into the AI system. As AI continues to update the current situation, it will run forecasting simulations that look inside a target country's society. As external pressures are put against this country and its leaders, internal reactions can be tracked and simulated. This feedback can inform us, before a target leader knows, about what is going on in his country, allowing us to adjust our stimuli continuously to achieve our objectives. This capability keeps us moving inside the decision-loop of our adversary.

Finally, it is necessary to address the importance of unintended consequences and this new technology. The change from old ways to new ones (i.e., new technology and organizations in a "new" information world) will ignite numerous phenomena that will react to and counter the intended purposes of these changes. It is important that we remain alert to these changes, and not grow complacent about AI's abilities. AI will not render a perfect solution, and will always need a human to take its recommendations to the next level of reasoning for decision-making. The benefits of AI, to interact with the user and prompt him to achieve high-quality decision-making, must remain the focus of its capability. Of course humans will need to adopt a new paradigm to work with a virtual instrument that puts them in touch with a process that is both fast and progressive. Yet this is a paradigm well worth creating as AI has the ability to push one to think beyond what we have ever achieved. This will truly be the "thinking tool" of our future.

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