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May 1, 2000

I hereby certify that Dwayne A. Day has passed the Final Examination for the degree of Doctor of Philosophy on January 18, 2000 and that this is the final and approved form of the dissertation.

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Mission Control:
Principal Agent Theory as a Model for National Security Policy Decisions

By

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To Woffie

Acknowledgements

It is usually at this point that I am supposed to thank all of the people who helped make this dissertation possible and absolve them for blame for any mistakes made herein. The problem is that I cannot remember half of the people who helped me along the way and I'd rather blame everyone but myself for the inevitable mistakes in this dissertation.

So I will simply thank everyone on the planet except for those who did not help. That should pretty much cover it. But in particular, I would like to thank the members of my committee: my exceedingly patient chair, Deborah Avant, who put up with my inanities and countless rewrites before I finally figured things out; James Goldgeier and Jim Lebovic, who read the first drafts and offered useful comments so that I did not make too big a fool of myself; and Christopher Deering, James Lindsay and, above all, John Logsdon. Of the latter, I would like to single out Logsdon, who I realize figured that it would be a mighty cold day in Hell before I ever finished this. John, it's snowing.

The mistakes, alas, are my own fault.

Abstract

This dissertation argues that the president is able to effectively control the national security bureaucracy to achieve his goals. It uses the principal agent model to demonstrate that presidents can serve as principals and assert control over bureaucratic agents. They do this by using structural control—controlling the number of missions, operating rules and communications of bureaucratic agents in order to increase their effectiveness at accomplishing the stated mission and eliminate interference from Congress.

I focus on three general case areas of weapons acquisition during the 1950s and early 1960s: ballistic missile development, aerial reconnaissance, and satellite reconnaissance. In each case the president and his executive team structured—or failed to structure—the bureaucratic agents that undertook efforts to develop weapons programs. These cases demonstrate that presidents are aware that the structure of an agent can affect its responsiveness to him and its ability to effectively achieve his goals. They also demonstrate that presidents understand that the agent's ties to Congress affect the agent's responsiveness and he therefore seeks to control these ties. Furthermore, he realizes that controlling the information that an agent transmits to Congress—either through the creation of information channels or through more extreme measures, such as security classification—can be vital to limiting congressional interference. Finally, they demonstrate that the more a president can control structure, the more likely he is to achieve his desired goals. Highly structured programs are the most successful. Programs that are relatively unstructured are more likely to fail.

The executive powers of the president are a significant counterpoint to the legislative powers of the Congress in the national security field. I argue that the president acts as the preeminent principal when it comes to establishing such policy and that the divided nature of the principal has a significant effect on both presidential strategies and outcomes. Finally, I argue that there is a range of variation in how much the president can control—in some instances he can be remarkably effective, so effective, in fact, that his opponents never even know what he has done. In other instances, practical and constitutional restraints on his actions can frustrate his ability to achieve his goals.

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Chapter 1 Introduction—Principal Agent Theory as a Model for National Security Policy Decisions

Much political theory on how American bureaucratic government works is based upon the belief that the President is weak and relatively inconsequential at actually controlling the government. There are two basic groups who share this view. One group argues that the bureaucracy is largely immune to presidential—or any other—control. Another group argues that although the bureaucracy can be controlled, it is largely controlled by Congress through legislation. The president, even according to some of the institution's advocates, is largely limited to the powers of persuasion concerning the legislation that funds and directs the bureaucracy.

What these groups either overlook or discount is that the vast majority of the federal bureaucracy, which enacts policies and legislation, "belongs" to the executive branch. The bureaucracy is part of the executive branch, under presidential command. Presidents appoint the directors of the bureaucracy and can issue orders to them. Congress has no direct day-to-day input into decisions made in the executive branch and it ultimately must rely on the president to implement its policies.

However, there is also a third group of political theorists that views the president from a different perspective. This group focuses on foreign and military affairs, proceeding from the assumption that U.S. foreign policy is made by the president according to national security interests. Presidential actions are largely strategic, with little or no domestic component. This group, rational actor theorists, treats Congress and the bureaucracy as largely invisible. The president becomes a single-point actor.

Theorists who argue that the president is weak bureaucratically and those who argue that he is strong in national security and international affairs point to mounds of

evidence to support their cases. But these theories may be too unrefined to fully explain the American system of government where both the executive and the legislative branches clearly have tools to affect policy. To understand the interactions of each, we may need to ask more nuanced questions. Yet very few scholars have focused upon this issue of how the president gets what he wants from a bureaucracy that supposedly has great power to resist him.[1]

Can the president control the bureaucracy that he supposedly heads? How successful can the president be at implementing his own policies, or at thwarting the policies that Congress wants to implement? And what does the president actually do to maximize his ability to achieve his policy outcomes, especially when they may conflict with those of the Congress? In simple terms, how does the president control the missions that the federal bureaucracy undertakes to get what he wants?

It is my argument that the ability to implement policies, both his own and those of Congress, gives the president considerable power over the bureaucracy. By carefully selecting and controlling the implementation, the president can significantly increase his ability to achieve the policy goals that he desires. He does this by structuring agencies and their approach to tasks in order to minimize congressional access to and interference in the implementation of policy. He structures agencies to increase their responsiveness to him. Thus, he not only can and does change structure, but by doing so, he affects outcomes so that they benefit him. This structuring does not guarantee better policy. But it increases the president's ability to achieve his goals at the expense of others. Thus, the executive powers

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[1] One who has is David Lake. Lake, John Ikenberry and Michael Mastanduno have pointed out the gulf in the literature by stating: "Indeed, international and domestic politics remain largely separate fields of scholarly inquiry. In the former, the dominant paradigm of structural Realism has tended to abstract from domestic politics and to explain international outcomes—such as system stability, economic openness, or regime creation—as a function of international attributes, principally the distribution of power. Much of the study of domestic politics, on the other hand, still proceeds without devoting systematic attention to international relations." Michael Mastanduno, David A. Lake, G. John Ikenberry, "Toward a Realist

of the president are a significant counterpoint to the legislative powers of the Congress. I argue that American national security policy can best be explained by using the principal agent model of government behavior and that the president acts as the preeminent principal when it comes to establishing such policy. I also argue that the divided nature of the principal—i.e. that there are two principals—has a significant effect on both presidential strategies and outcomes. Finally, I argue that there is a range of variation in how much the president can control—in some instances he can be remarkably effective, so effective, in fact, that his opponents never even know what he has done. In other instances, practical and constitutional restraints on his actions can frustrate his ability to achieve his goals.

Previously, theorists who have focused exclusively on the presidency have concentrated on the individuals who held the office and not on the powers of the institution and how they accrue to the individual occupants, no matter who they are. As a result, there is little theoretical rigor to the existing work on the presidency. However, a few scholars have noted that the president and his "foreign policy executive" occupy a unique position at the intersection of the domestic and international political spheres.[2] This gives presidents the ability to exert influence in both spheres and to redefine issues to their advantage. This is a strategically vital position that the executive occupies and the legislature does not, and it determines why presidents act in the ways that they do.

All elected officials, both congressmembers and the president, must delegate in order to implement their decisions. They have to utilize existing bureaucracies or create new ones to perform the work. But this presents problems for them. The obvious problem is that the bureaucracy does not necessarily want to implement their decisions.

Theory of State Action," in G. John Ikenberry, ed., *American Foreign Policy* (New York: Harper Collins, 1996), p. 120.

[2] David A. Lake, "The state and American trade strategy in the pre-hegemonic era," in G. John Ikenberry, David A. Lake, and Michael Mastanduno, *The State and American Foreign Economic Policy* (Ithaca, NY: Cornell University Press, 1988), p. 36; Felix Gilbert, ed., *The Historical Essays of Otto Hintz* (New York: Oxford University Press, 1975).

The bureaucracy may choose to simply do nothing, an option that involves the least amount of work (this is known as "shirking"). Furthermore, the bureaucracy may possess the means to resist. But there is an even bigger problem for elected officials in the American government: the struggle for control of a bureaucracy does not stop once legislation is passed or orders are issued. It often continues through the implementation process. Not only do opposing branches of government continue to try to affect the implementation of policies, but bureaucracies that disagree with elected officials use their connections to other branches of government as a means of resisting the implementation. Thus the fight is not between the elected officials and the bureaucrats, but between the president and the Congress, *through* the bureaucrats.

Because bureaucracies can resist control, elected officials attempt to structure bureaucracies in such a way as to maximize their own control and minimize the control of other branches of government. But they are limited in their ability to do this by constitutional restraints as well as more mundane factors, such as time and resources. Presidents in particular have what would, at first glance, appear to be severe constraints to using structure to achieve control, for most bureaucracies are created through legislation. Presidents would appear to be at a disadvantage in exercising power through the formation and molding of bureaucracies because they lack the formal power to create them.

The problem, therefore, is how does the president use the bureaucracy to achieve his goals given the fact that the bureaucracy wants to resist control *and* Congress also wants to use the bureaucracy to resist presidential goals as well? Does the president pursue strategies to maximize his effectiveness? Can these strategies work? This is a relatively unexplored subject and it is the focus of this dissertation. But before I can discuss it, it is necessary to explore the existing models of understanding government behavior and control of the bureaucracy, and the limitations of these models.

The Bureaucratic Politics Model

The bureaucratic politics model of government behavior evolved as a response to rational actor theory, which had dominated political science for years.[3] Rational actor theory was based upon the idea of a single monolithic decision maker making choices based upon substantial (and often nearly perfect) information.[4] But the rational actor model presented a number of problems. First and foremost was a fundamental dilemma: state behavior often appeared either counterproductive or even irrational. Second, in the rational actor model, information was often treated as a given, as if every leader knew everything that he needed to know to make effective and decisive decisions. But in reality, the lack of information or the presence of inaccurate information was a common trait of many government decisions.[5] Finally, rational actor theory defied common sense about human nature: human beings are fallible and emotional; even their "rational" behavior is often not predictable.

The bureaucratic politics model was an attempt to answer these problems. Bureaucratic politics, instead of a single decision maker, envisioned groups of actors—usually in the form of individuals in charge of organizations. They had different goals, values, perceptions, and levels, and they often worked from imperfect or incomplete information. According to this model, any decision is necessarily a result of bargaining between these actors; a "game," in the words of the advocates of the theory. Some kind of event is necessary to prompt the actors to participate in this game to produce an outcome.

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[3] The bureaucratic politics model emerged by the late 1960s, but was preceded by several works which emphasized the rather chaotic nature of decision making within government. For these early works, see Samuel P. Huntington, *The Common Defense* (New York: Columbia University Press, 1961) and Roger Hilsman, *To Move A Nation* (New York: Doubleday, 1967).

[4] The rational actor model is often called the classical model. It was espoused by Hans Morgenthau, Rayond Aron, Herman Kahn and others.

[5] Indeed, lack of good information would seem to be a major factor driving the government toward inaction. For instance, although the U.S. national security apparatus draws up innumerable contingency plans for various international scenarios, the lack of reliable intelligence prevents them from being enacted. James

The prompts can be anything from routine events, such as annual budget preparation, to unexpected events, such as international crises. Something happens that requires action and the game is set in motion.

The individuals acquire their position in the game by nature of the positions they hold in the government. But the individual is also defined by his or her governmental position, which determines what they both may and must do—their "parochial priorities and perceptions," in the words of the foremost advocate of the theory.[6] The model concerns how these actors behave during a decision. They plot and form coalitions. They can widen the playing field to enhance their advantage, or withhold information that might be detrimental to their interest.[7] Their success depends upon their ability to exploit advantages and the perceptions of the other actors of their skill at playing the game. They perform in defined "action-channels" which are institutionalized procedures for either facilitating or implementing government procedures.

Outcomes can be in the form of specific decisions, general policies, or delaying actions (in essence, a decision not to make a decision). One of the lessons of this model is that ideal outcomes—i.e. those that are in the best interest of the nation (which the rational actor model assumed a priori)—are nearly impossible. The end result of any decision is a compromise at best, or an ambiguous decision that is so broad and vague in order to satisfy all participants (by not forcing them to sacrifice anything) that it holds very little value to the participants other than maintaining the status quo. Despite the chaotic nature of the process, the model assumes that all decision making ultimately gravitates toward inaction.[8] In contrast to the optimistic, positivist outlook of rational actor theory, the bureaucratic

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Risen, "Pentagon Planners Give New Meaning to 'Over the Top," *The New York Times*, September 20, 1998, Section 4, p. 3.

[6] Graham Allison, *Essence of Decision* (Boston, MA: Little Brown & Co., 1971), p. 165.

[7] Francis E. Rourke, *Bureaucracy and Foreign Policy* (Baltimore: The Johns Hopkins University Press, 1972), p. 77.

[8] Morton H. Halperin, "Why Bureaucrats Play Games," *Foreign Policy*, No. 2, Spring 1971, p. 74.

politics model was a rather depressing explanation of government behavior—nothing much gets done and very little of that is done right.

Graham Allison's *Essence of Decision* has been the most influential discussion of the bureaucratic politics model. It was Allison who first described the "game" and explicitly declared that bureaucratic politics was a model, whereas previous scholars had applied aspects of bureaucratic behavior but had not attempted to carefully define a model that encompassed all or most of them.[9] Although oft-criticized by other scholars, Allison's characterization of government decision making as a bargaining process among multiple actors has endured and the book continues to sell well and to be heavily cited by others. It is a powerful influence, even though many of its theoretical foundations have been heavily (and in my view, successfully) attacked.

The popularity of Allison's work is due to several factors. First, Allison summarized the theory in a relatively coherent way. Second, his characterization proved attractive because of its wealth of detail and its descriptive approach. Finally, by choosing such a popular and descriptively rich subject as the Cuban Missile Crisis for his focus, Allison managed to appeal to a much broader audience than cloistered political theorists. Historians, journalists, politicians, as well as the general public, all found the book interesting and readable, and were affected by its theories.[10] The theory itself has broad appeal because of its plausible and logical simplicity. Since the publication of Allison's

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[9] The bureaucratic politics model was Allison's Model III. He distinguished it from Model I (unitary rational actor theory—the "classical" approach which had predominated much literature on government prior to 1970), and Model II (the organizational process model). The organizational process model was based upon organizational process and bounded rationality literature. State action in this model, according to Allison, was more a product of rigid institutional routines than of rational choice. Policies could be understood "less as deliberate choices and more as outputs of large organizations functioning according to standard patterns of behavior." Allison, *Essence of Decision*, p. 67. Critics of Allison have often been very vociferous about this model and accuse him of badly mischaracterizing the literature.

[10] Bureaucratic politics "theory" is, like all theories, subject to the eye of the beholder. Exactly what it is and who is inside or outside the theory is constantly open to question and depends upon the author's definition of what is important. Nevertheless, Graham Allison is generally credited with doing the most to

book, bureaucratic politics theory has assumed an extensive, if not rigid following. It is often invoked by journalists and historians to explain why certain events happen the way that they do. It has frequently been used to explain defense procurement and other national security issues where multiple actors have a say in the formulation of policy and where the outcome is often complicated. Using the model operationally, however, is not nearly as easy as it first appears.[11]

Despite its popular success, within the study of political science, bureaucratic politics theory fell into disrepute by the late 1970s. As the model's critics noted, the primary problem with the theory was that it was not so much a theoretical construct as it was a sophisticated political history or, even worse (to use the arguments of the harshest critics), journalism. The critics claimed that singular events are described in great detail but with few conclusions that can be generalized to other situations or rigidly tested.[12] The model was often applied, but not necessarily expanded or explicitly tested.[13] Most of those

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popularize the idea of bureaucratic politics as a separate body of theory in itself. See Morton H. Halperin, *Bureaucratic Politics and Foreign Policy* (Washington, DC: Brookings Institution, 1974).

[11] Edward Rhodes, "Do Bureaucratic Politics Matter? Some Disconfirming Findings From the Case of the U.S. Navy." *World Politics*, Vol. 47, October 1994, p. 2.

[12] See, for instance Jonathan Bendor and Thomas H. Hammond, "Rethinking Allison's Models," *American Political Science Review*, June 1992. They concluded that Allison was incorrect in assuming that executive branch policy making involved bargaining, that he failed to recognize the hierarchical structure of such policy-making, that his bureaucratic politics model was not precisely formulated, and that the model was too complex. Indeed, many of these criticisms are directly from the principal agent literature, which will be discussed below. See also any of the early critics of Allison's book cited by Bendor and Hammond, particularly Steven Krasner, "Are Bureaucracies Important? (Or Allison Wonderland)," *Foreign Policy*, 1972.

[13] Critics of bureaucratic politics have charged that the model demanded too much data and was too inclusive to be testable. One criticism of Allison's characterization of bureaucratic behavior was that he tended to overemphasize the degree to which presidential appointees tended to "go native" once they assumed their positions heading various government bureaucracies. Another criticism was that the model placed a lot of value on the skills of each individual. If individual traits are indeed so important, then it becomes difficult if not impossible to use the model to explain anything, since individuals can vary in myriad ways. One of the most effective criticisms of the theory was that the model cannot prove that one of the participants did not *intend* the outcome. If the outcome was indeed intended by one of the actors, then the model does not necessarily apply, for the result was not due to bargaining and compromise, but the victory of one individual over another. Other criticisms were that the model ignored the importance of the president in decision making and that it obscured accountability. (The president has been an integral part of the model from the beginning. The primary question has been his degree of influence. Quite often he is portrayed merely as another actor, not as the wielder of supreme authority over the other actors.) Although

who used it stopped at its basic assumption—that policy making was a chaotic process. They felt little need to go beyond that assumption to identify consistent rules or successful strategies or to predict future behavior.

The bureaucratic politics model has survived even though it has generally not been altered or expanded significantly since Allison's book. As a theoretical pursuit in its own right, it has stagnated. Many people use it, but few are attempting either to rigorously test it or to expand upon its limits. Yet the model still endures, particularly in much of the more descriptive literature. It survives because it explains how governments arrive at outcomes that seem to please no one. It endures in part because it satisfies the basic human desire to apply order to chaos, to explain how something as mind-bogglingly inexplicable as the Department of Motor Vehicles or the Post Office operates. The decision making process is at first glance chaotic and incomprehensible. The bureaucratic politics model is therefore attractive because it argues that there is an explanation for, and some underlying order to, the chaos: the order is found in the individuals and organizations involved in the game and their goals and strategies. The chaos is a natural outcome of the conflict of these differing goals and strategies.[14]

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it tended to treat the president rather poorly (or at least weakly), it also tended to focus most of its attention on executive branch decision making. Congress is often ignored by the bureaucratic politics model. The model is usually a discussion of the relationship between different parts of the executive, such as presidents and presidential appointees, who are generally depicted as rivals rather than members of the same team. Thus, while one of the criticisms is that the model lacks height (a recognition of how hierarchy can vary), another is that it lacks breadth (a recognition of Congress' role in the decision making process). Bureaucratic politics therefore might explain policy, but it cannot easily explain legislation.

[14] Many "classic" studies in areas such as defense procurement have used this model as their foundation. Studies of the TFX fighter aircraft, the ICBM and IRBM, and the cruise missile have all used the bureaucratic politics framework. But they have largely taken Allison's framework and used it relatively unmodified. The result is that while their studies have contributed to a better understanding of these specific programs, they have not moved the theory beyond its basic theoretical foundations established almost three decades ago. See: Edmund Beard, *Developing the ICBM: A Study in Bureaucratic Politics* (New York: Columbia University Press, 1976); Harvey M. Sapolsky, *The Polaris System Development: Bureaucratic and Program Success in Government* (Cambridge, MA: Harvard University Press, 1972); and Michael H. Armacost, *The Politics of Weapons Innovation: The Thor-Jupiter Controversy* (New York: Columbia University Press, 1969).

Finally, this model endures in scholarly literature because it appears commonly in the popular literature—scholars are heavily exposed to the model before they begin their academic work and it certainly influences them. The model has broad popular appeal in part because it looks personally familiar. Anyone who has ever served on a committee, whether in church, their child's school, or planning for the corporate Christmas party, can understand how frustrating decision making can be when multiple actors and personalities are involved. The model appears to explain how unattractive outcomes are the only possible outcomes for such everyday activities. The bureaucratic politics model is readily available and easily applicable to everyday situations. It also, like the rational actor model before it, continues to discuss actions in terms of "interest."[15] Bureaucratic politics therefore appears as a common explanation in popular accounts of government decisions, because even though it is a theory, it can apparently explain things that happen in many human interactions. It explains not only politics but business, social events, and even religion—it *seems* right, even if it begins to fall apart as a political theory under closer scrutiny.

One of the unfortunate side-effects of the appeal of this model has been to emphasize the power of the bureaucratic actors and their interests and to devalue the hierarchy in which they operate and the rules by which they must abide. The model perpetuates the myth that bureaucratic scholar Francis Rourke has referred to: "The belief that power in the modern state has come increasingly to be centered in the corridors of bureaucracy."[16] Too often the media portrays policy disagreements as being the result of

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[15] As Edward Rhodes notes, the bureaucratic politics model is actually rather idealistic in its goals. It attempts to preserve the Enlightenment belief in rational, economic man. It tries to explain why seemingly irrational outcomes occur. They are not the result of the world (i.e. humankind) being irrational, but are the outcome of rational players participating in a complex, partially hidden intragovernmental game. In other words, the mess is not really our fault. Edward Rhodes, "Do Bureaucratic Politics Matter?", p. 2.

[16] The full quote is: "The belief that power in the modern state has come increasingly to be centered in the corridors of bureaucracy is more often assumed than examined." Francis E. Rourke, *Bureaucracy, Politics and Public Policy*, p. 1.

the intransigence of the bureaucracy, which through its possession of the implementation authority can simply refuse to cooperate with elected officials. In a decision making game where all actors operate on a relatively even plane, the bureaucracy is powerful and nearly impossible to move.[17] The nameless bureaucrat in the gray flannel suit with his miles of red tape has the power to slow the will of the electorate to a crawl. Bureaucracy, as various scholars have noted, became a synonym for red tape, even an epithet, or at least a euphemism for all that was wrong with the government.

Principal Agent Theory

But theories are never sacrosanct. Scholars reformulate them and address their failures, shortcomings, or limits. Just as rational actor theory came under attack and

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[17] As an example, one could look at the popular media's portrayal of the opposition of the military services to allowing gays to serve. Although this policy was a top priority of President Clinton upon reaching office, it fell apart rather spectacularly very early, resulting in an outcome that no side was happy with. The popular media applied a classic bureaucratic politics explanation to this disagreement. The two actors—president and military—are depicted as relatively equal. According to the popular script, this forced equality was due to a number of factors. Part of it was due to Clinton's own lack of standing with the military. In particular, his draft avoidance was said to have dramatically weakened respect for him as Commander-in-Chief. Another part of it was due to the stature of General Colin Powell, Chairman of the Joint Chiefs of Staff. Powell, as the military leader during the Gulf War, the first black Chairman of the JCS, and probably the most prominent and popular chairman since George Marshall (as well as a possible future presidential candidate) was considered by many in the press and the public to be an almost mythical figure. Powell opposed having gays serve.
The media portrayal of this event followed along the standard lines of the bureaucratic politics model: Both the president and the bureaucracy had their interests and acted upon them. The bureaucracy was large, set in its ways, and hard to move. The result of the bargaining process was an outcome that made neither side happy. The bureaucratic politics model seemed to perfectly fit the convoluted fight for interests and the muddled outcome of the "don't ask, don't tell" policy.
But the popular account (or more accurately, the multiple popular accounts) lacked a larger context. At the time there was little mention of the fact that the military was able to oppose the president because it had another source of power to appeal to—Congress—which disagreed with the president on the policy. The dispute's position within a larger hierarchical framework was largely ignored. It is not surprising that popular media accounts of current events do not apply a rigid theoretical framework. They are not intended to. But that is beside the point. The issue is that this general misunderstanding of government actions persists. Although the bureaucratic politics model has largely stagnated within the field of political science, it remains alive and well in historical and popular writings. All the critics have been unable to drive a stake through its heart. For an insider's perspective on the face off between the president and the military, see: George Stephanopoulis, *All Too Human* (New York: Little, Brown and Co., 1999), pp. 123-124. Frank Murray, in an article on the use of executive orders during the Clinton administration, noted that somewhat ironically, the executive order that Clinton was most criticized for was one that he did *not* sign—the order

spawned new theories, the core belief of bureaucratic politics theory was challenged from several directions. With the weaknesses of the model identified, scholars began to focus upon the actual responsiveness of the bureaucracy to outside control. Did it ever respond? How much? To whom did it respond and why? And what was the most effective way to make it move? Once people started to ask these questions, cracks began to appear in the bureaucratic politics armor. Given that the literature was generally discursive and not explicitly theoretical, it was not surprising that the field would increasingly find itself subsumed to a larger and more rigid body of theory.[18] This is what happened.

Some scholars noted that Congress' authority to fund the bureaucracy resulted in agencies adapting their programs to the needs of key congressmen and committees.[19] The bureaucracy responded to political direction. It also responded to political direction from outside the executive branch (the primary focus of bureaucratic politics theory).[20] Within the political science field, more and more scholars focused their attention on bureaucracies (or institutions) overall and how they acted over time, not simply their role in isolated instances or crises.[21]

The major challenge to the bureaucratic politics literature was the emergence of what was called "principal agent" theory or, more simply "agency theory."[22] Principal agent

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that would have allowed gays to serve openly in the military. Frank J. Murray, "Clinton's Executive Orders Still Are Packing a Punch," *The Washington Times*, August 23, 1999, p. A1:A10.

[18] The lack of theoretical rigor was even noted by Allison in *Essence of Decision* (p. 174), and later reiterated by Bendor and Hammond in "Rethinking Allison's Models," (pp. 313-314).

[19] R. Douglas Arnold, *Congress and the Bureaucracy: A Theory of Influence* (New Haven, CT: Yale University Press, 1979).

[20] This was not totally new. "Iron triangle" theory had existed for years. It postulated that powerful congressional committees struck bargains with industry to regulate agencies to their benefit. This theory fell apart because of emerging proof that regulation *against* business interests was just as common as regulation in favor of it. But iron triangle theory focused exclusively on regulatory agencies and the attack on the bureaucratic politics model demonstrated that even non-regulatory agencies could be responsive to congressional direction.

[21] James March and Johan Olsen, "The New Institutionalism," *American Political Science Review*, Vol. 78, No. 3, 1984.

[22] The term that is occasionally used to describe the antecedent of agency theory is Transaction Cost Economics (TCE), a model "derived from TCE is one composed of buyers and sellers: where there is little trust, much uncertainty, duplicity and opportunism, and where contracts impose on human transactions

theory owes its origins to economics and began crossing over to the study of politics by the early 1980s.[23] It married rational actor theory with bureaucratic politics theory. It examines the relationship between bureaucracies and decision-makers as a relationship of superiors and inferiors and focuses on issues of control.[24] There are "principals"—elected officials—and "agents"—bureaucracies. The principals delegate certain tasks to the agents. In the simplest of terms, the elected officials are the bosses and the bureaucracies work for them under some sort of contractual relationship.[25] They do their bidding because that is their job.

Consistent with rational actor theory, outputs from the bureaucracies were shown to vary with the preferences of the elected officials—the lumbering out-of-control behemoth was apparently on a leash after all.[26] Consistent with bureaucratic politics theory, the leash often contained slack—the ability of a bureaucracy to misbehave or wander in directions that the leash-holder did not approve. How much slack the leash contained became the key dispute.

All government actions require delegation by their very nature. Government organizations exist because elected officials do not fight wars or sign contracts on their

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discipline, order and control." Wayne Parsons, *Public Policy: An Introduction to the Theory and Practice of Policy Analysis* (Brookfield: Edward Elgar, 1995), p. 327. Parsons is critical of TCE because he believes that other ideas of human behavior and organizational theory are more comprehensive and convincing. He states "Reductionism, alas, has always had an enduring appeal and, not infrequently, unfortunate consequences." Oliver Williamson argues that TCE and agency theory have significant differences, since TCE maintains that "all complex contracts are unavoidably incomplete," whereas agency theory concentrates contracting action on "incentive alignment" before the fact. Oliver E. Williamson, "Political Institutions: The Neglected Side of the Story—Comment," *Journal of Law, Economics, and Organization*, Vol. 6, Special Issue, 1990, p. 264. The differences appear to be largely definitional, as well as particular to the field of study. "Ex ante incentive alignment," which was a common subject of TCE, did not make the crossover from economics to political science until the 1987 article by McCubbins, Noll and Weingast which will be discussed shortly.

[23] Unless otherwise noted, I will use "principal agent theory" throughout this paper to refer primarily to its adaptation to political theory, not economics.

[24] B. Dan Wood and Richard W. Waterman, *Bureaucratic Dynamics* (Boulder, CO: Westview Press, 1994), p. 25.

[25] In reality, there are multiple layers to this relationship and it quickly becomes a question of how much detail one wants to include in the model. For instance, the chief civil servant in an agency is an agent. But to his underlings he could be considered a principal.

own—they select people to do this for them. Thus, there is a hierarchical relationship by definition; it is the only way to get anything done.

But there are two primary problems with using delegation to gain rational outcomes. The first is that the principal has difficulty selecting the appropriate agent because it lacks the agent's expertise and information. It is both difficult and costly for the principal to discover which agent most closely shares the principal's goals. This is known as "adverse selection."[27] The second problem is that the agent does not necessarily want to be controlled from above, or at least is more inclined to resist control in some instances rather than others. The agent certainly has no interest in reporting its own errors, inefficiencies or noncompliance to the principal. But it also knows what factors the principal monitors and can attempt to comply with them while not complying with things that it knows the principal does not monitor. The agent therefore has both an incentive and the means to deceive the principal as to how well it is complying ("shirking"). This problem emerged as one of the dilemmas of agency theory: how does a principal control an agent when the agent pays attention to what the principal is monitoring rather than the ultimate goal? In principal agency terms, this is known as "moral hazard."[28]

Information Asymmetry

Like bureaucratic politics theory, principal agency recognized that one of the main problems with controlling the bureaucracy was the problem of information for the decision maker. The bureaucracy possesses most of the informational resources necessary to monitor its performance. The elected official does not. This problem is known as

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[26] B. Dan Wood and Richard W. Waterman, *Bureaucratic Dynamics*, p. 22.
[27] Kenneth J. Arrow, "The Economics of Agency," in J.W. Pratt and R.J. Zeckhauser, eds., *Principals and Agents: The Structure of Business* (Cambridge, MA: Harvard Business School, 1991).
[28] Both adverse selection and moral hazard are derived from their original use in insurance theory. They are also sometimes referred to as "hidden information" and "hidden action" problems. See David H. Guston,

"information asymmetry" and is common to all delegatory relationships.[29] This gives the agent power to resist control.

The principal attempts to monitor the agent through the use of hearings, annual reviews, reauthorization, required reports, and other methods. But in the end the principal is forced to rely upon the agency to provide the information on how well it is doing what the principal wants it to do. The reason is cost—monitoring is not cheap. One method of monitoring is the "police patrol" analogy. The principal actively attempts to find wrongdoing by the agent and punish it for noncompliance. Problems are not only discovered and corrected, but potential wrongdoers eventually come to realize that they will be caught and punished. Thus, there is a deterrent effect to this form of monitoring—those who feel they will be caught are less likely to break the law. Another form of monitoring is the "fire alarm" analogy. Police patrols are too costly and have too few benefits. Instead, principals respond when something goes wrong. This works to the principal's advantage because decision makers actually *gain* from being seen to put out fires. Their intervention to stamp out problems (such as "waste, fraud and abuse") helps to get them reelected.[30] The fact that the building burned in the process does not generally hurt them and it is not necessarily their primary concern. Indeed, according to the fire alarm analogy, such alarms can even help the principal perform the monitoring job better by defining problem areas. They inform the principal about what the electorate considers to be important. From Congress' point of view, fire alarms are the most efficient way of monitoring agencies.[31]

According to agency theory, the principal is concerned with two additional problems: bureaucratic drift and coalitional drift. Bureaucratic drift is the tendency of the

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"Theory-building: Principal agent theory and the structure of science policy," *Science and Public Policy*, Vol. 23, No. 4, August 1996, p. 231.

[29] Ibid., p. 230.

[30] Mathew D. McCubbins and Thomas Schwartz, "Congressional oversight overlooked: police patrols versus fire alarms," *American Journal of Political Science*, Vol. 2, No. 1, February 1984, pp. 165-179.

[31] Ibid.

bureaucracy to slowly stray from its intended purpose. It can do this for any of a number of reasons, including new direction from the political appointees who run it, or establishment of its own interests and identity. Coalitional drift is the tendency of the principal itself to change over time. Politicians do not generally change their minds over time. But they do die and they do retire and this is the biggest cause of change in voting coalitions.[32] Even the most secure elected official has a sense of his or her own political mortality, or at least the sense that their interests will not prevail indefinitely due to the political mortality of other elected officials in their coalition, or the changing nature of their interests. Because parties can lose control of Congress or undergo leadership transformations, coalitions will inevitably change. Those who enact policies are therefore concerned with ensuring that changing demographics do not lead to the dismantling of their favored programs.[33] Thus, the principal is faced not only with the dilemma of an agent wandering away from its goals, but with the additional dilemma of the principal himself (or more precisely, successive principals) *pushing* the agent away from his current goals over time. In some parliamentary democracies, the ruling parties act to permanently kill programs that they do not favor—to drive a stake through their heart so that they cannot be revived later by a different ruling coalition. The divided powers of the American government make this more difficult.[34] But the fact that it occurs is testament to the worry politicians have over what happens when they leave office.

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[32] Morris P. Fiorina, "The Case of the Vanishing Marginals: the Bureaucracy did it," *American Political Science Review*, Vol. 71, No. 2, March 1977, p. 177.

[33] Note that the goal here can make the practice of democracy seem rather slimy and subversive—what the current democratically elected officials are attempting to do is to deny power to future democratically elected officials.

[34] Examples of parliamentary democracies permanently killing programs they opposed are Canada's Avro Arrow and Great Britain's TSR fighter aircraft. In both cases, the governments that canceled the projects ordered that their machine tooling be destroyed and the prototypes crushed and melted down. In the United States, the cancellation of the B-1 bomber by President Carter and allies in Congress in 1977 did not work as well. The contractor was given money to continue research and development on the aircraft and to store the tooling. As a result, when Ronald Reagan became president only a few years later, he was able to easily revive the program. See Nick Kotz, *Wild Blue Yonder* (Princeton, NJ: Princeton University Press,

In the late 1980s, the agency literature advanced considerably, particularly with the emergence of the "McNollgast" school. Mathew McCubbins, Roger Noll and Barry Weingast proposed a new answer to the fundamental problem of how principals controlled their agents in light of the above mentioned problems.[35] The McNollgast literature made an interesting and powerful observation, which was that legislators also had powerful ex ante tools at their disposal—tools by which they could control the performance of agencies *before* the fact in order to compensate somewhat for their inability to monitor them in real-time, and continue to ensure their control into the future. Principals did this, McNollgast argued, because of the transitory nature of their own power and the tendency of the bureaucracy to develop different interests.[36] Principals wanted to ensure that policies they enacted were carried out by the agencies even if they themselves were voted out of office.[37] The McNollgast approach not only reasserted the hierarchical nature of the principal agent relationship, but it also added the idea of structure: control of the bureaucracy by politicians was possible because the bureaucracy was *designed* to facilitate control.[38]

1988), pp. 180-182. Another example is the B-70 bomber, which Congress sought to continue despite administration opposition. After a protracted testing period, the Kennedy administration was finally able to kill the program permanently.

[35] Mathew D. McCubbins, Roger G. Noll, and Barry R. Weingast, "Administrative Procedures as Instruments of Political Control," *Journal of Law, Economics, and Organization*, Vol. 3, No. 2, Fall 1987; Mathew D. McCubbins, Roger G. Noll, and Barry R. Weingast, "Structure and Process, Politics and Policy: Administrative Arrangements and the Political Control of Agencies," *Virginia Law Review*, Vol. 75, 1989.

[36] That is, the aforementioned coalition and bureaucratic drift.

[37] There has been a very large body of research, both theoretical and empirical, which sprung from the 1987 and 1989 McNollgast articles; a literature which is too large to effectively cite here. It is important to note that the majority of this work has appeared in law journals, not political science journals, despite the attention to bureaucracy. The most important works, in my view, such as that of Terry Moe and Jonathan Macey, are discussed separately, but see also: Daniel F. Spulber and David Besanko, "Delegation, Commitment, and the Regulatory Mandate," *Journal of Law, Economics, and Organization*, Vol. 8, No. 1, Spring 1992; Kenneth A. Shepsle, "Bureaucratic Drift, Coalitional Drift, and Time Consistency: A Comment on Macey," *Journal of Law, Economics, and Organization*, Vol. 8, No. 1, Spring 1992; David Epstein and Sharyn O'Halloran, "Administrative Procedures, Information, and Agency Discretion," *American Journal of Political Science*, Vol. 38, No. 3, August 1994.

[38] "Structure" is a term with many uses within the political science field and particularly within the fields under study. In some instances it is used to refer to the overall framework of American government—thus, the bicameral legislature, the separation of powers, the relationship between the Executive and Legislative branches of government as determined by the Constitution is one form of structure. But what McNollgast

The principal's concern is therefore in "locking in" the conditions that exist when it establishes the policies. The way the principal achieves this is through the structuring of the bureaucracies, particularly during the passage of major pieces of legislation. But there are certain times when the principal's ability to determine future bureaucratic performance is even greater than the passage of major legislation. As one of the foremost advocates of this school stated, "politicians who *establish* administrative agencies can manipulate the structure and design of those agencies in ways that reduce the chance that future changes in the political landscape will upset the terms of the original understanding among the relevant political actors."[39] The goal of the politician is to not only dictate how the agent enacts a *specific policy*, but to dictate how it operates *in general* so that all subsequent policies will be treated in a favorable manner. Creating a new agency allows the principal to select its mission, operating modes, and personnel. If that is done favorably, then all future policies given to the agency to enact will be implemented more in line with the principal's goals.

According to this argument, the principal uses structure in two different ways to constrain the policy decisions by administrative agencies. First, it can structure an agency in order to enfranchise constituents who will thereafter continue to exert influence upon that agency. The principal's interest here is not necessarily "good government" in some abstract sense. The principal's interest is continued reelection, which it essentially equates with "good government." Paradoxically, handing over control of the bureaucracy is a means of overcoming the principal's inability to exert long term control. In other words, somewhat like the dieter who padlocks the refrigerator, it consciously gives away the

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and others are referring to is a much more limited definition of structure—the rules governing the relationship between the principal and the agent and how they are defined by the principal to ensure compliance.

[39] Jonathan R. Macey, "Organizational Design and Political Control of Administrative Agencies," *Journal of Law, Economics, and Organization*, Vol. 8, No. 1, Spring 1992. Emphasis added.

power to control what is happening.[40] The principal is rewarded for this action with continued reelection.

Second, the principal can encourage compliance with its preferences by forcing an agency to warn it of any anticipated changes in agency actions before they happen. Policies which have become formalized are difficult to reverse and therefore the principal wants to intervene *before* they become formalized.[41] The principal wants and needs time in order to consider action. It therefore deliberately imposes delays in the approval process. It slows the bureaucracy down to its own pace. (At least this is what Congress as principal wants. As I will explain in the next few chapters, the president does not necessarily want delay.)

More recently, John Brehm and Scott Gates have argued that the ability of principals to control agents is determined less by the external structure of their relationship with the agents than with the internal organization of the agents themselves, and particularly the types of individuals who join them. Bureaucracies are made up of individuals with similar interests, goals and thinking patterns. Brehm and Gates state that at least one of the tenets of the economic approach to principal agent relationships is that agents and principals differ in preferences. But, they argue, this is not always true for political relationships. What they emphasize is that many of those within political bureaucracies actually *want to*

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[40] The nature of exactly what is democratic in the bureaucratic state is an important one. As two theorists have noted: "Save for some vehicle of democratic control over the decisions of bureaucrats, we cannot have democratic *government*, only democratic *elections*." John Brehm and Scott Gates, *Working, Shirking and Sabotage* (Ann Arbor, MI: University of Michigan Press, 1997), p. 2. But it is not difficult to see that there are profound philosophical questions about the nature of democracy even when there is some form of control. Is "democracy" best served when elected representatives attempt to exert control over a recalcitrant bureaucracy, or when certain constituent groups exert greater control directly over that bureaucracy? When politicians place bureaucracies in these structures, some constituency groups are greatly limited in their influence over the bureaucracy. The flip side is that the bureaucracy is (or at least is supposed to be) more directly responsive to the public. But when bureaucracies are not placed in these rigid structures, many more groups can access them, but their responsiveness is going to be diluted (indeed, the bureaucracy can use the lack of consensus as an excuse for ignoring *all* outside views).

[41] Mathew D. McCubbins, Roger G. Noll, and Barry R. Weingast, "Structure and Process, Politics and Policy: Administrative Arrangements and the Political Control of Agencies," p. 441. As Macey has noted, these two goals—making the agent warn the principal of changes to the agent—are contradictory. The first is an attempt to make the bureaucracy responsive to change, the second is an attempt to make the agency resistant to change by increasing the time it takes to change.

work, not shirk. Not all, nor necessarily even a majority of bureaucrats are attempting to subvert the purpose of the bureaucracy and the goals of the principal. They have gravitated to specific agencies because they want to perform the missions of these agencies.[42] They do not necessarily have to be controlled, because they already want to comply.[43] A question that Brehm and Gates do not address is the ability of the principal to *shape* bureaucracies so that they attract people who will work, not shirk. The internal organization of a bureaucracy is not accidental, but deliberate. Principals inherently know that recruiting an agency of shirkers is not the way to achieve their goals. One of the basic lessons of effective management is to "recruit good people," which is translated into recruiting people who share the principal's goals.

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[42] Humorist P.J. O'Rourke noted this with surprise when he visited the National Highway Transportation Safety Administration. He expected that bureaucrats working in a highway safety organization would be anti-car fanatics. "I didn't expect ordinary, friendly men about my own age. And they were car buffs. Almost everyone who works for NHTSA owns a sports car or a motorcycle or a hot rod or a dragster. They spend their spare time rebuilding and tuning and fiddling with them and riding around in and on them." P.J. O'Rourke, *Parliament of Whores* (New York: Atlantic Monthly Press, 1991), p. 91.

[43] Brehm and Gates still reflect one of the weaknesses of the principal agency literature: its assumption that there is really only one agent involved when there may be two or more. But although they do not explore the possibilities of principals fighting each other *through* agents, they do acknowledge that it is at least possible for a principal to prefer that an agent not do work. Thus, this is a possible mechanism by which one principal can attempt to thwart the interests of another, by encouraging an agent to shirk its responsibilities.

Another oversight is their lack of attention to the issue of who creates the bureaucracies that individuals identify with and join. Certainly, most of the people who work in bureaucracies have joined them long after they were created. But the agent itself did not suddenly appear out of nowhere, completely staffed. It had to be created and when it was created, a principal or principals molded its goals and missions, thereby ensuring that it would attract certain kinds of people. It is this ability to establish the agent that some (such as Macey) have argued is key to understanding how it can later be controlled.

The Brehm and Gates thesis is in some ways an amalgamation of the existing theories. Although they downplay the idea of control being imposed deliberately from the outside, they are essentially proposing another ex ante form of compliance (if not necessarily control). Agents are predisposed to act in ways that can be useful to principals. One aspect that Brehm and Gates largely neglect is that the principal still maintains the ability to create the agent that these individuals gravitate to, or to chose among agents based upon these concerns. And while they are correct to note that internal organization of an agent is important for control, they do not explore how conscious the principal is of this internal makeup and how the principal both assesses and manipulates it to advantage. John Brehm and Scott Gates, *Working, Shirking and Sabotage*, pp. 20-22, and chapters 2-5. On the establishment of agents and the power this gives the principal, see Macey, "Organizational Design and Political Control of Administrative Agencies."

Limitations of Principal Agency

There are limitations to the principal agent model. But its most vociferous critics do not necessarily reject the tenets of the model, but rather its scope and the limited way it has been applied. In particular, too often it focuses on the agent's relationship with a single principal—Congress—rather than the multiple principals who constitute the federal government. The theory has only recently begun to address multiple principals, and work on this subject is still relatively rare.[44]

The United States has multiple branches of government and thus multiple principals; more than simply congressional action is needed to create an agency or to pass legislation affecting an agency, and things other than legislation can be used to exert influence on an agency. Further, the very existence of congressional oversight is based on the belief that the executive branch, which owns the bureaucracy, may choose to thwart Congress' will. Congressional oversight inherently recognizes that the president's powers to implement policy are important—that presidents have power beyond simply serving as possessors of the legislative veto. One of the major shortcomings of principal agent theory is its lack of attention to the president. How the president interacts with bureaucracies has largely been left to the bureaucratic politics theorists, who return the favor by tending to ignore Congress.

The president has natural advantages in foreign and national security policy that Congress does not possess. Among his advantages are superior information concerning foreign events (due to his command of the intelligence agencies) and his constitutional role

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[44] Deborah Avant, *Political Institutions and Military Change: Lessons From Peripheral Wars* (Ithaca, NY: Cornell University Press, 1994). Kenneth Mayer has also written several articles on this subject. See: Kenneth R. Mayer, "Closing Military Bases (Finally): Solving Collective Dilemmas Through Delegation," *Legislative Studies Quarterly*, August 1995, pp. 393-413; Kenneth R. Mayer, "Policy Disputes as a Source of Administrative Controls: Congressional Micromanagement of the Department of Defense," *Public Administration Review*, July-Aug 1993, pp. 293-302.

as Commander-in-Chief. It is important to study how he uses his power in this area, but principal agency has not looked at these issues in an extensive manner.

So far, the principal agency literature has implied that only Congress uses structure. This is partly due to the biases of the field (i.e. its general lack of focus on the president). But it is also due to the admittedly understandable belief that the president cannot affect structure because the president does not create agencies of the federal government through legislation. I argue that the president can affect structure and that legislation is not necessary to do so. The president can initiate the creation of an agency by Congress. He can shape an agency during its formation. And he can, in rare instances, create an agency entirely without congressional approval. Perhaps most importantly (and most subtly), presidents can alter structure through changes in the operating rules of agencies. He can therefore affect agency structure, just as Congress can. The question of the president's use of structure during agency formations and reformations is therefore of great interest for explaining how agencies later carry out the tasks that are given to them.[45]

Further, the president possesses the implementation (or execution) power for many government actions that result from congressional action. He ultimately picks the people within the agency who will implement the policies, contributing to what Brehm and Gates have noted is the important issue of the goals of the agents themselves. This gives him

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[45] Terry Moe and Scott Wilson claim that while bureaucratic institutions have transformed from a system of congressional government to a presidentially-led bureaucratic state, modern political theory has failed to explain these developments. In earlier works Moe heavily criticized positive theorists for neglecting the president (due, he claimed, to their foundation in social choice theory and the emphasis on voting behavior). In 1994 Moe and Wilson spread the blame around a little more liberally. According to them, the Presidency has been resistant to theories of any kind largely due to the tendency of presidential scholars to focus on individual presidents as opposed to the institution of the Presidency. Rather than focusing on what characteristics different presidents *shared* in their political office, they often chose to focus on personalities and differences. Thus, there was not much of a foundation upon which a theory could be built. Terry M. Moe and Scott A. Wilson, "Presidents and the Politics of Structure," *Law and Contemporary Problems*, Vol. 57, No. 2, Spring 1994. At least part of the problem with studying the president as principal is determining what exactly is "the presidential interest." Congress' interests can be determined by voting behavior. The president's cannot be so easily discerned. Nevertheless, the fact that the model has largely ignored the president as principal has less to do with problems of applying it than the social makeup of the political science field.

great power. It also gives him great information. But too often principal agent theorists have treated this power as simply the power of the *agent* vs. Congress, rather than the power of the President as *refracted* through the agent vs. Congress. What has been neglected in these discussions is the obvious implication that what has been called "bureaucratic drift" can actually be *caused* by the president by design.

But while there are problems with the principal agency literature, unlike the bureaucratic politics or rational actor models, the limitations of the principal agent model are not fundamental flaws with the model itself. These limitations simply reflect inadequate application of the model. It has not been applied to the presidency. It has not been widely applied to non-regulatory issues. It has not been extensively examined in a multiple principal context. It should be expanded in these directions to see if its central assumptions remain intact. The principal agent literature is rich and empirically proven in certain areas, but requires further expansion to new cases.

Bureaucratic Politics Model vs. Principal Agent Model

As noted earlier, one of the subjects to which the bureaucratic politics model is most often applied is national security policy, where it has been described "as perhaps the most useful construct available for understanding U.S. national security policy making."[46] This is in part because of the demonstrated limitations of the rational actor model at explaining how countries (and particularly democratic leadership) behave during crises. Although the bureaucratic politics model was really first applied to crisis management, it has been most commonly used to explain behavior in other, non-crisis, areas of national security decision making, such as policy formulation and weapons procurement. Many of the most notable

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[46] James Keagle, "Introduction and Framework, " in David C. Kozak and James M. Keagle, *Bureaucratic Politics and National Security* (Boulder, CO: Lynne Rienner Publishers, 1988), p. 17.

descriptions of defense procurement and weapons acquisition decisions have used this model.

The bureaucratic politics model's failure to fully recognize the hierarchical nature of the relationship between decision maker and bureaucracy, and the way that this hierarchy can be changed, is one of its basic flaws, particularly since national security policy making can at times be intensely hierarchical and the nature of this hierarchy varies widely and is controllable. Given the model's limitations, it is therefore necessary to ask if bureaucratic politics remains the "most useful" means of understanding U.S. national security policy making, or if a more useful model is available. It is my argument that in many cases the principal agent model is better than the bureaucratic politics model at explaining decision making in the national security field. Unlike the bureaucratic politics model, it can be used to predict behavior in national security decisions. And it explains things that the bureaucratic politics model cannot explain. For instance, it explains how come some defense procurement decisions, which should be highly contentious among bureaucracies, are not. And it explains how come ideal outcomes are indeed possible.

Unfortunately, as previously noted, national security policy is one area where principal agent theory has been relatively, although not completely, silent.[47] Some work has been done on this subject, although it tends to ignore the president as principal, or reinforce the view that presidents are essentially not powerful principals. In some cases it

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[47] There has been some work in this field. See, for instance, Deborah Avant, *Political Institutions and Military Change: Lessons From Peripheral Wars*; Christopher P. Gibson & Dr. Don M. Snider, "Explaining Post-Cold War Civil-Military Relations: A New Institutionalist Approach," Harvard Project on U.S. Post-Cold-War Civil-Military Relations, Working Paper No. 8, January 1997; Peter Feaver, "Delegation, Monitoring, and Civilian Control of the Military: Agency Theory and American Civil-Military Relations," Harvard Project on U.S. Post-Cold-War Civil-Military Relations, Working Paper No. 4, May 1996. It is also worth noting that principal agent theory has also not been expanded very far into other fields of government decision making besides regulatory agencies. For an engaging discussion of the applicability of principal agent theory to science policy, see David H. Guston, "Theory-building: Principal agent theory and the structure of science policy," *Science and Public Policy*, Vol. 23, No. 4, August 1996. There is still little work on its applicability to things like health care and social welfare.

even implies that presidents are *agents* of Congress.[48] Despite this, the majority of work on principal agency concerns congressional relationships with regulatory agencies. The president and vast other areas of the bureaucracy are virtually ignored. This is a loss both for these subject areas and for the theory itself.

Many of the lessons of the theory concerning Congress and regulatory agencies are provocative and have been proven by statistical means—something that cannot be claimed for the bureaucratic politics model. Furthermore, the principal agent model is constantly advancing and has a rich body of literature in the economics field from which to borrow. Unlike the bureaucratic politics (and, for that matter, rational actor) model, it is not stagnating. Finally, as others have noted, the problems of delegation are common not only to many areas of politics, but also to the analysis of business and economics. By using a theory with broader appeal, we can not only borrow from a rich theoretical foundation, but communicate across disciplines and build bridges to other communities.[49]

Principal agency also recognizes the immense power of governmental structure. Structure, according to principal agency theory, is the number of parts, elements, or constituents in a principal agent relationship, and their arrangement.[50] Structure, by definition, is something that once in place, endures regardless of the decisions made and the people making the decisions. It endures until it is deliberately changed. By changing structure, a principal hopes to establish certain operating rules that apply no matter what issues are being debated, out of the belief that these changes will benefit the principal that makes them.

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[48] Christopher J. Deering, "Congress, the President, and Automatic Government: The Case of Military Base Closures," in James A. Thurber, ed., *Rivals for Power* (Washington, DC: Congressional Quarterly, 1996), p. 154; Kenneth R. Meyer, "Closing Military Bases (Finally): Solving Collective Dilemmas Through Delegation," *Legislative Studies Quarterly* 20 (August 1995), pp. 393-414.
[49] Guston, "Theory-building: Principal-agent theory and the structure of science policy," p. 232.
[50] Jonathan R. Macey, "Organizational Design and Political Control of Administrative Agencies," *Journal of Law, Economics, and Organization*, Vol. 8, No. 1, Spring 1992, p. 93.

Principal agency recognizes two primary types of structure. One is the *number* of issues that an institution will address—will it be single-mission or multi-mission? The second is the *operating rules* under which the agency works. An agent can focus upon one issue or many. Its operating rules can affect the speed at which it acts—forcing it to act quickly, or delaying actions at multiple stages and requiring it to constantly seek input and approval from a principal.

But as I will demonstrate, structure is also *how and to whom an agent communicates*. Information asymmetry is so important to how bureaucracies are controlled that it deserves to be recognized as not simply another operating rule, but a primary concern of the principal in some instances.

These three structural attributes—number and arrangement of internal parts, operating rules, and information transmittal to the principals—are all closely related. After all, how an agent reports information to a principal is dictated by operating rules. And operating rules both control and can dictate the number of issues that a bureaucracy addresses. What a principal wants to do is change as many of these attributes as possible in order to maximize his ability to get what he wants out of the bureaucracy.

Structure is important to principal agency theory, but bureaucratic politics theory generally does not pay much attention to it. Bureaucracies are assumed to be self-interested, but descriptions of their interests do not often take into account the range of their responsibilities and how this affects their influence, their interests, and external influence upon them. Bureaucratic politics theory rarely compares bureaucracies to each other. It may note that they act differently, but does not attempt to explain why they do this beyond a vague reference to their evolved cultures. In addition, while bureaucratic politics theory notes that bureaucracies have a tendency to become entrenched in traditional ways of doing things and tend to stagnate over time, it does not pursue this observation to some obvious

conclusions.[51] For instance, if bureaucracies stagnate over time, then creating new bureaucracies would appear to be a solution for officials who feel that bureaucratic stagnation may be affecting the implementation of their policies. Creating new bureaucracies is not always an option, but it does exist. Bureaucratic politics theory tends to ignore it. Given the fact that most theories of government inherently recognize that the overall structure of government—separate branches, bicameral legislature, etc.—influences what outcomes are produced, it would be a mistake to overlook the structure of the individual parts of the government and the bureaucracies that implement policies.

The bureaucratic politics and principal agent models are relatively distinct. Bureaucratic politics (and rational actor theory) have focused on the executive. Principal agency has focused on the Congress. Bureaucratic politics sees a complex, often disorganized, and often indeterminate relationship between actors. Outcomes are rarely ideal and usually the result of compromise. Principal agency sees a hierarchical relationship between decision makers and the bureaucracy charged with implementing the decisions (essentially building upon the simplified hierarchical relationship of rational actor theory). Principal agency also acknowledges a hierarchical relationship that is not always static and can be changed. It does recognize that intended outcomes can be achieved and compromise between actors is not always necessary. Bureaucratic politics focuses more heavily on national security issues, whereas principal agency has more often addressed regulatory issues.

Research Questions and Hypotheses

I will demonstrate that the principal agent model provides a more accurate, and fuller explanation of how governments allocate resources and missions than bureaucratic

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[51] Anthony Downs, *Inside Bureaucracy* (New York: Harper-Collins, 1967).

politics. It explains things that the bureaucratic politics model cannot—for instance, it explains how come bureaucracies can be highly responsive to direction even in cases when they should resist such direction. It explains how ideal outcomes—as opposed to suboptimal outcomes—are possible. It explains how principals can achieve their intended goals, without having to compromise. Principal agency also explains much of the growth of the national security state. Secrecy, for instance, is more than simply an attempt to keep America's enemies in the dark. It is also a tool used by presidents to be more effective in their governing. In the national security state, secrecy is simply a more blatant expression of how principals use information as a means of structural control of agents. And the number of national security bureaucracies has increased because it serves the interests of the president to have more agents under his control.

Assuming that the principal agent model is valid for explaining national security decision making, I have several hypotheses centered upon the use of structural control. These hypotheses are: that structure is important; that presidents can control structure just as Congress can (albeit in different ways and for different reasons); and that structure can and does determine outcomes.

My first hypothesis is that the president is most able to get what he wants when he can maximize structural control. If he can maximize structural control, then he is most likely to be successful. There are three aspects of structure—the number of missions that an agency undertakes, the way it operates (i.e. its hierarchy) and its ability to communicate with principals. The president seeks to maximize as many of these as he can as much as practicable.

If the president is able to make single-mission agents, then he will be able to increase structural control of that agent. If he is able to streamline the hierarchy and responsiveness of the agent, then he will increase structural control of that agent. And if he is able to limit its ability to communicate with other principals, then he will increase

structural control of the agent. Not all of these aspects of structure are equal. For instance, the ability to classify an activity is a very powerful means of maximizing structural control of an agent and can have a major effect on the success or failure of that agent. But not all of these aspects of structure are easy to obtain.

The president's ability to control these factors will be limited by external constraints. For instance, in some cases he can classify an activity, but this is not an option in many situations. Also, the more complex and specialized (for instance, high-technology) the endeavor, the more he may be able to control the transmission of information, because the knowledge is narrowly specialized and the president has direct access to experts that the Congress does not.

Structure is used by principals to exclude other principals, thus improving their own control of agents. Structure is not merely imposed; it is an inherent part of the relationship between principals and agents—the question is not simply if a principal *wants* to control structure, but *how* he is going to control structure. Is it worth it? How does he do it? What is the effect of any changes? Both principals and agents are aware of this, but principals are aware of it most of all, for they can change the structure.

The relevant research question is: can structure make it more difficult for one principal to affect outcomes (in effect, changing those outcomes)? If so, is it more likely that the other principal will get its way? If the answer to both of these questions is yes, then the principal agent model is supported. If structure does not affect the ability of the principal to control outcomes, or if it does not have any bearing on whether or not the other principal gets its way, then the bureaucratic politics model is supported.

An appropriate research question which follows from the primary question is: do principals use structure to limit agency access to alternative principals? A conditional hypothesis is that new bureaucratic agents are created or existing ones are modified in order to limit the control that an alternative principal can exert over these agents. If agents are

created by principals when existing agents possessing the capabilities to accomplish the mission already exist, then the hypothesis is supported. This would also help explain why bureaucratic agents tend to proliferate—it happens because the principals desire it to happen in order to achieve their goals.

The first question asks whether structure is important, the second question asks whether it can be controlled. It is one thing for principals to *recognize* that the structure of their relationship with an agency affects their ability to achieve success, it is another thing for them to try (and succeed) to *alter* this structure in their favor. As one principal agent theorist has noted, principals do not merely try to win at the game of politics, but change the rules so that their chances of winning are increased.[52] They change structure because they believe that it will increase their chances of winning.

The distribution of resources and missions is in essence, the central focus of politics. It is also the focus of much of the bureaucratic politics literature and is the focus of this study.[53] Rational actor theory in these cases implies that missions and resources are assigned to the bureaucracy rationally, with little deliberation or dispute, and "in the best interests of the nation." Bureaucratic politics theory implies that missions and resources are assigned to bureaucracies with great dispute and that the "best interests of the nation" would be less important than the parochial interests of the actors. The model also implies that the outcome will usually be a compromise that satisfies few of the participants, although some more recent research implies that compromise is effective at creating better policy by preventing bad ideas from reaching fruition and enlarging the options and the

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[52] Terry M. Moe and Scott A. Wilson, "Presidents and the Politics of Structure."

[53] As some critics have noted, the bureaucratic politics literature has frequently focused upon crises, despite the fact that these are instances where bureaucratic interests are least likely to be manifested. This study will argue, however, that the allocation of resources can also occupy a broad spectrum from urgency to routine.

consensus needed to implement the decision.[54] But at its most basic, the bureaucratic politics model implies that the bureaucracy resists control and does so for its own purposes, not the purposes of elected officials.

Principal agent theory in some ways merges both the rational actor and bureaucratic politics models. According to this model, principals will act rationally—albeit according to their own interests: They will act in their own sense of "the best interests of the nation," but they also have to face a less consensual decision making process and have to concern themselves with the interests of other actors (or, more precisely, other principals and multiple agents). They assign missions to the bureaucracy to minimize the influence of other principals. What drives this process at its most basic level is electoral politics. The president serves a national constituency. Members of Congress serve regional constituencies. This determines their policy preferences and affects how they view and interact with both each other and their agents.

A second dependent research question is: do principals exploit information asymmetry to their advantage over other principals? A conditional hypothesis is that principals not only recognize their own information asymmetry problems in their relationship with agents, but also recognize that other principals have these same problems as well—and that this is a potential *structural* tool to be used against them (i.e. it is something that affects all decisions and policies enacted by the bureaucracy). By limiting the information that the agents provide to other principals, they can also restrict the other principals' ability to exert influence over the agents. This is different from bureaucratic politics because in that model information denial is primarily a weapon among equal players. But in principal agency, a hierarchical relationship exists and principals use information as a weapon and a defense against each other. If principals not only remain

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[54] James M. Goldgeier, *Not Whether but When: The U.S. Decision to Enlarge NATO* (Washington, DC:

wary of agent's reporting of information, but attempt to control how the agents report to other principals, then the hypothesis is supported.

To date, principal agent theory has recognized information asymmetry as a problem only between principals and agents. The theory has not acknowledged that information asymmetry can be a means by which a principal exerts structural control over an agent, or that it can be used by one principal against another. This situation might best be described as unequal asymmetric information—that is, one principal receives better information from the agent than the other principal receives from the same agent. This shifts the emphasis on information asymmetry from its use by the agent to its use by the principal.

The ability of principals to exploit this facet of their relationship with the agent may vary widely depending upon the situation. As this study will show, in some cases the executive branch has a natural advantage over the legislative branch at using information denial as a weapon because the executive in essence "owns" the bureaucracy. It has its own reporters and spies within the agency in the form of political appointees which it uses to bypass the long-established chain of information and chain of command and to prevent information from reaching the Congress.[55] A political appointee can report to the president promptly; a bureaucracy takes longer to report to Congress on its activities and health. The legislative branch is usually left to more blunt and less efficient methods of obtaining

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Brookings Institution, 1999).

[55] Moe and Wilson stress that the president is not simply an equal player with the same interests as Congress, but a *more powerful and fundamentally different player* than Congress. Presidents *want* a fundamentally different kind of bureaucracy than Congress. Whereas members of Congress often look to bureaucracy to remove authority and responsibility from their hands, or at least to make it easier to pursue unclear and often conflicting interests, presidents are motivated to seek a "unified, coordinated, centrally directed bureaucratic system. They want a bureaucracy they can control from the top." As Moe and Wilson say, "The president's most fundamental job in politics is to take charge of the game: to structure it, not simply to play it." In effect, he can change the rules under which he operates and move issues and policies into areas over which he has greater control. See Moe and Wilson, "Presidents and the Politics of Structure."

Moe and Wilson's 1994 article appears to have served more as a basis of commentary than further scholarship. But even their critics acknowledged that this recent work has made an important contribution to the field by treating the Presidency as an institution instead of a series of individuals. Jonathan R.

information from the bureaucracy—hearings, reports, leaks, etc. Further, the executive branch has been able to exploit certain constitutional and statutory measures to its advantage to restrict informational flow to the legislature (such as the claim of "executive privilege") which Congress does not possess. Finally, the president possesses some absolute powers over the bureaucracy. For instance, he can classify activities and keep them from Congress. He has done this on numerous occasions. In contrast, there are no examples where Congress has been able to classify national security actions and keep them from the president. The relationship between the two principals and the agents in national security policy is therefore explicitly lopsided, with the president possessing more informational ammunition than the Congress. Decision makers treat information as a commodity and attempt to both gather information and to *deny it to others*. What is important about this research is that it changes the focus of the study of information asymmetry. These aspects of the relationship will be explored in early chapters.

Thus, these hypotheses and research questions allow us to establish independent and dependent variables for application to various cases. The independent variables all refer to structure. They are: number of tasks an agent conducts, arrangement (or hierarchy) of parts, and asymmetry of information. Overall control (the ability to make the agency carry out the principal's goals) is dependent upon these factors. Control is measured by how close the implementing agent actually came to achieving the president's goals.

Macey, "Comment: Confrontation or Cooperation for Mutual Gain," *Law and Contemporary Problems*, Vol. 57, No. 2, Spring 1994, p. 45.

Independent Variables (Structural Variables)

- •number of tasks the agent performs (few vs. many)
- •hierarchy (highly vertical or horizontal)
- •asymmetry of information (very asymmetrical or less asymmetrical)

Dependent Variable

- •closeness to achieving the president's goals

The president, as principal, tries to change the independent variables—the aspects of structure—in order to achieve his goals. First, he will seek or create an agent that has few missions *other* than the ones he is most interested in. Second, he will also seek or create an agent that has a streamlined, highly vertical hierarchy that passes orders down the chain—a command structure that has as few levels of authority as possible between him and the actual implementers of the policy. This also ensures that the agent moves quickly, so that Congress has trouble keeping up with it. And finally, he will seek or create an agent that smoothly and reliably passes information up to him—and which does *not* smoothly or reliably pass the same information to Congress. If the president can maximize all of these variables, then he increases the likelihood of achieving his policy goals.

Principal agency is based upon the assumption of hierarchy. Hierarchy is both an internal and external aspect of agencies. Principals attempt to change the internal hierarchical relationships inside agents and also the relationship between these agents and themselves. Manipulation of structure usually involves attempts to change this hierarchy. And control of information is often achieved through manipulation of hierarchy.

But what is a "more hierarchical" relationship? Hierarchy is simply the number of people who have authority over any actor and the degree of authority exercised by each. The more people involved in decision-making and the more levels through which decisions

must pass before implementation, the less hierarchical the system. Similarly, if levels are composed of committees (which diffuse authority) rather than single actors (which concentrate it), then the system is less hierarchical. Thus, a dictator issuing orders to an army is more hierarchical than a parliament issuing the orders. And a management system whereby a program manager reports and responds to a single government official is more hierarchical than one where that manager must report through committees, commanding officers, and advisory groups.

Hierarchy is an aspect of any principal agent relationship, for it defines the amount of control that a principal has. The most hierarchical system is a master-slave relationship, where the master has total control of the slave. The more people who have authority over an actor, the less hierarchical the relationship is. Some degree of hierarchy exists in all human relationships. Even committees which make their decisions by majority vote require a chairperson who can direct the debate and therefore possesses some authority over the other members of the committee. The committee itself may serve as a controller over some other body. Thus, hierarchy can also be important for understanding the nature of principals and agents themselves, for principals are rarely single-point entities. A principal can be diffuse (i.e. relatively non-hierarchical) and this then affects its relationship with the agent. Indeed, this is one difference in the way presidents and Congress operate—the Congress is a more diffuse principal than the president and as a result operates slower and less decisively toward agents.

What principal agency inherently recognizes is that hierarchy can be controlled. One of the primary attributes of principals is that they decide whether or not they are in the relationship and they can (with limitations) decide which agents will be in any specific relationship. They can select agents over which they have the most control and they can

write the rules so as to increase their control of an agent. By eliminating levels of authority between them and the agent, they can increase hierarchy.[56]

Although this study will attempt to demonstrate the importance of the presence of more than one principal in decision making, it will do so from the point of view of the presidency, and the only other principal which will be taken into consideration at this time is the Congress. This approach has been chosen for several reasons. First, although many different scholars have attempted to apply principal agent theory to politics, as previously noted, the vast majority of this work has focused solely upon Congress as the principal. They have rarely even considered the existence of other principals and how this affects the environment in which they work. Therefore, there is a need for both greater attention to the president's role as principal and to the subject of multiple principals. Some would argue that in many areas of government action only one principal—Congress—really matters.[57] This may be true in some instances, but certainly not all, and probably not in as many areas of government as the proponents of the theory state. Is the president exerting influence in many of these areas in ways that are not immediately visible? For instance, is he directing changes in the implementation of legislation that lead the bureaucracy in new directions? While principal agency argues that the agent can and does disobey the principal, a more sophisticated explanation may be that what is apparently the agent's resistance *is actually the influence of the second principal.* Those who argue that only Congress matters may be misdiagnosing the symptoms that they observe.

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[56] The degree of hierarchy is often determined simply by issue area. For instance, the command and control of nuclear weapons is a very hierarchical system, with the president assuming near absolute authority in certain situations. Policy formulation for specific issues can be very hierarchical or relatively non-hierarchical, depending upon the interest the president actively takes in the issue. Hierarchy can, in some instances, be asserted simply by the involvement of an actor. For instance, if the president shows little interest in the internal deliberations concerning a specific issue in the White House, many voices will prevail. But if the president does show active interest, he can assert a hierarchical relationship where his interests, ideas, and definition of the problem take precedence and shape the debate, at least in a relative sense compared to areas where he shows no interest.

Furthermore, by focusing only on Congress, the advocates of principal agency are limiting the utility of their theory. Narrowly focused theories have little utility in answering the big questions about politics. Failure to move the theory into these other areas leaves it confined to a niche and also leaves it unchallenged beyond this niche. Since all theories should at least *aspire* to broad application, they are ill-served by such isolation. After all, many cracks in the armor of bureaucratic politics theory appeared only after it was applied to realms other than crisis-management. Can principal agency survive exposure to questions other than the relationship between Congress and small regulatory agencies? Furthermore, one of the aspirations of social science is not to develop ultimate theories (which may not exist), but to define the bounds of existing theories. Nobody is served if we simply leave national security defined by a badly flawed bureaucratic politics model and at the same time leave narrow areas of regulatory policy defined by a strong principal agency model. As several theorists have noted, "The question is less whether, in some general sense, a theory is false or not... than *how much of the world the theory can help us explain.*"[58] It is my intention to explore the boundaries of principal agency theory and see if they can be expanded beyond their currently restricted scope.

Second, this work focuses on the president as principal because the realm of national security affairs is an area in which the president is generally considered to have greater authority than the Congress and where hierarchy is sometimes blatantly apparent. It thus offers some unique opportunities to explore principal agent relationships that have not been explored before, such as control of hierarchy and one principal's denial of information to another. In addition, while some of the basic concepts of principal agency apply to the presidency, they may apply in different ways. Does the president face the moral hazard

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[57] This is commonly the reply to Moe's criticism that the president is ignored—who cares? But this is a very inward-looking approach for a theorist and results in academic isolationism.

[58] Italics in original. Gary King, Robert Keohane, and Sidney Verba, *Designing Social Inquiry: Scientific Inference in Qualitative Research* (Princeton, NJ: Princeton University Press, 1994), p. 101.

and adverse selection problems? Does he use structure in the same way as Congress to achieve his goals? Does he use police patrols or fire alarms or some other means of monitoring agency performance? And does he have additional powers that Congress does not possess?

Third, although there has been some discussion of addressing the role of the judiciary as a principal, there is no denying that the primary struggle in American politics is between the executive and legislative branches.[59] The judiciary serves primarily as an ex post check upon both their actions; it rarely establishes policy on its own.[60] Its role as principal is therefore not as important as the role of Congress and the president, and can be left for later research, after the role of the president as principal, and the basic complexities of multiple principal systems, have been more fully explored.

My research goals here are modest: to demonstrate the superiority of the principal agent model over the bureaucratic politics model, and to extend principal agent theory further in a few new directions, such as the relationship between multiple principals, and the relationship between the president and the bureaucracy. My goal is also to add information control to the concept of structure, and demonstrate how structure is taken into account by principals. My goal is not to attempt to establish a comprehensive model of multiple principal agent relationships in American politics, but to raise the subject as worthy of further exploration—to begin to ask if such a comprehensive model is viable.

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[59] For a discussion of the judiciary as principal, see Roberta Romano, "Comment On 'Presidents and the Politics of Structure,'" *Law and Contemporary Problems*, Vol. 57, No. 2, 1994, pp. 59-61.

[60] An editor at *The Washington Post* has noted that the Supreme Court tends to be most "activist" when Congress fails to be specific with its laws. If Congress does not "say what it means in the laws it writes," the Supreme Court has a larger hand to interpret laws in ways that Congress may not like. Fred Barbash, "Congress Didn't, So the Court Did," *The Washington Post*, July 5, 1998, p. C1.

Methodology

This dissertation will rely upon structured, focused case studies to answer these questions. Although case studies have somewhat of a negative reputation within the political science field, they can be extremely valuable for theory construction. They can also expand our understanding of phenomena that either cannot be, or are not currently, addressed by more quantitative research. They can also reveal insights about subjects not yet explored that can become the basis for future quantitative research. Finally, it is worth noting that even quantitative studies have not proven their value to the point where they represent the ultimate in political theory. Extensive debate still rages on in many areas in which quantitative methods have been applied for decades.[61]

A controlled comparison is made when one or more of the variables of interest differ.[62] Structured comparison is achieved by asking a set of standardized, general questions of each case study.[63] The questions asked of each case should be of a general nature and should not be couched in terms that are overly specific and relevant to one case only. "They should be applicable to all cases within the class of events of which the study is concerned."[64]

The questions that I will be asking of all the cases I am looking at are based upon the research questions listed above. They include the following: Which model, bureaucratic politics or principal agent, better accounts for the decision making in each

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[61] Amy E. Smithson, *Growth Industry: The U.S. Arms Control Bureaucracy in the Late 1980s*, Ph.D. Dissertation (Washington, DC: George Washington University, 1996).
[62] Alexander L. George, "Case Studies and Theory Development: The Method of Structured, Focused Comparison," in Paul Gordon Lauren, ed., *Diplomacy: New Approaches in History, Theory, and Policy* (New York: The Free Press, 1979), p. 59.
[63] Alexander L. George and Richard Smoke, *Deterrence in American Foreign Policy: Theory and Practice* (New York: Columbia University Press, 1974), pp. 97-103. See also Richard Smoke, *War: Controlling Escalation* (Cambridge, MA: Harvard University Press, 1977), pp. 37-39; and Alexander L. George and Timothy J. McKeown, "Case Studies and Theories of Organizational Decision Making," in Lee S. Sproull and Patrick D. Larkey, eds., *Advances in Information Processing in Organizations, Research on Public Organizations, Vol. 2* (Greenwich, CT: Jai Press, Inc., 1985), pp. 41-43
[64] George and McKeown, "Case Studies and Theories of Organizational Decision Making," p. 43.

case? Was structure used to exclude the agent's access to another principal? If structure was used, how was it used? How many missions was the bureaucracy designed to undertake? How was it designed to operate, fast or slow? Was information asymmetry used to limit the control that another principal could exert over the agent? What was the relative degree of each of these variables in the individual cases?

If bureaucratic politics best explains the cases, then I would expect to find that multiple actors played a part in the decision making, that the decisions were the result of compromise, and that ideal outcomes were rare. I would find that outputs generally did not vary with the preferences of the decision maker.

If principal agency best explains the cases, then I would expect to find different results. I would expect to find that relatively few actors played a part in the decision making, that the decisions were rarely the result of compromise and more often the result of direction, and that the decisions and the outcomes were satisfactory to at least one of the principals. I would find that outputs did vary with the preferences of the principal. And I would also expect to find that ideal outcomes, as defined by one of the principals, were indeed possible.

The Case Studies

This study will address several cases concerning the allocation of resources and missions for national security during the period 1946-1961, a period during which the president had strong authority over national security affairs. The programs under scrutiny were all enacted during the Eisenhower administration, during the early phase of the Cold War. As such, they represent a snapshot in time and focus on a time period when presidential power was expanding. They also represent a particular presidential style of the exercise of power. Although I believe that these cases illustrate that principal agency can be used to explain presidential control of national security missions, it will require additional

case studies of later periods and other presidents to extend the application of the theory to later periods. Some of the tools that Eisenhower used to implement these programs are no longer available today, or are restricted in their use.

The case studies fall into three general subject areas: the ballistic missile, aerial reconnaissance, and satellite reconnaissance.[65] In all of these cases, a relatively new mission was given to a bureaucracy that was not highly interested in acquiring that mission. Because of this, one would naturally expect bureaucratic politics to reign supreme—bureaucrats would resist the implementation of the mission until it clearly became in their best interests to cooperate, at which point they would fight each other over control of the mission. The critical test of the principal agency model in these cases occurs in the ICBM program. In this case, the stakes, in terms of money, influence and prestige for the bureaucracies, were immense. Bureaucratic politics *should* have reigned supreme in this case. If it did not—if principal agency is a better explainer of the events—then the principal agency model should be most strongly supported in this case.

But what happened was the opposite of bureaucratic politics—the president got what he wanted in the ICBM program. He got what he wanted because he was able to carefully structure the bureaucracy that implemented it. He was able to create a single-mission bureaucracy. He was able to change its operating rules. He was able to isolate it from outside influence and control the information flow from the bureaucracy to his rival principal, Congress.

Each of these cases represents a different point along a continuum of success—in other words, there is clear variation among the cases. For instance, the most successful cases were the CORONA satellite program and the U-2 aerial reconnaissance program. Of slightly lower success was the ICBM program from 1954 until 1960. Of lesser success

was the IRBM program. Least successful of all was the SAMOS reconnaissance satellite program and the ICBM development effort from 1946 to 1954.

What I will demonstrate is that in the most successful cases, the president was able to maximize all three factors of structural control: He was able to create single-mission agents; he was able to strictly control their internal operating rules; and he was able to exert considerable control over their information transmittal to Congress. This is clearly the case with the U-2 and CORONA.

In the lesser successful cases, he was able to control these structural factors to a lower extent. For instance, in the ICBM program from 1954-1960 he was not able to make the entire program secret from Congress and did not try. But he was able to control the number of issues that the ICBM development organization addressed, he was able to control the operating rules and hierarchy of that organization, and he was able to skillfully manipulate its transmittal of information to Congress. The IRBM was less successful. It achieved its technical goals, but cost the president political capital. The reason is that he controlled fewer structural attributes of the organizations that developed the IRBM. The very fact that he employed two organizations to build the IRBM, instead of one, increased his problems and limited his ability to control information flow to Congress. Principal agency does not state that bureaucrats will not squabble, only that it generally will not matter.

The ICBM program before 1954 and the SAMOS reconnaissance satellite program were the least successful of all. The reasons for this have largely to do with the fact that little overt attempt was made to control structure. Thus, the programs continued with their default structures—the traditional Air Force bureaucracy that was just as responsive to Congress as it was to the president, and lacked clear direction.

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[65] As used here, the term reconnaissance refers to peacetime strategic reconnaissance, as opposed to

Bureaucratic politics is unable to explain the variation in the cases. It is too unwieldy to generate specific hypotheses. Although it implies that all decision making will be generally awkward and messy and will not make anybody happy, it cannot explain why differences occur. How come the CORONA reconnaissance satellite program was successful and SAMOS was not? They were similar activities and do not exhibit traditional bureaucratic politics attributes of bargaining, compromise and dispute. The success and failure of the programs must therefore be explained by something other than bureaucratic politics.

Similarly, President Eisenhower considered the ICBM a very successful program and the IRBM less successful. What differed between these two programs? If bureaucratic politics affected the IRBM (as argued by Armacost in his classic study of that weapon), why did it not affect the ICBM? The bureaucratic politics explanation for the success of the ICBM, according to another classic study by Beard, is that the ICBM "skirted the bureaucracy," which is essentially an argument that bureaucratic politics applies except when it does not apply. But this begs the question, for it fails to answer how it can be made not to apply. If bureaucratic politics reigns supreme, why did it not result in the bureaucracies fighting over control of the ICBM program? In addition, bureaucratic politics cannot explain the relative success of the IRBM. Yes, the process was messy and political, but the weapon was still completed on time. So bureaucratic politics, if it existed, could explain only the chaos, but not the outcome.

Principal agency, in contrast, can explain the variation among these cases. It does not imply that the process of achieving a principal's goals will be simple and easy and unmessy. It can be all of these things. But the mess is not inherent to the process, it is

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battlefield reconnaissance which was traditionally a military mission. The idea of conducting strategic peacetime reconnaissance was a new one that developed only after World War II.

usually the result of the conflicting goals and powers of the principals. And often the mess can be controlled and made irrelevant to the outcome.

What these cases will demonstrate is that "success" is defined by the president in different ways and can sometimes change over time, albeit according to perenial interests. The president is not simply concerned with achieving the mission goals—developing an ICBM in six years, getting reconnaissance photos from the Soviet Union in under two years, developing an IRBM before an ICBM, etc.—he is also interested in preserving his power to act relatively independently from Congress. Thus, even though he may have achieved the technical goals for the program, he may be unhappy with the outcome because he also suffered political damage in the process.

Several of these cases (the ICBM and IRBM) have been selected because they have traditionally been explained as examples of bureaucratic politics. I will demonstrate that they are better explained by principal agency. These comparisons will be used to demonstrate how the president manipulates structure to affect outcomes. They have also been selected because they illustrate direct manipulation of hierarchies. And they have been selected in part because they highlight the information asymmetry problem in the allocation of missions and resources and how information asymmetry can be exploited by the president against the Congress. Secrecy is as close to a pure example of controlled information asymmetry as we can find in American government.

In high-technology endeavors, information asymmetry is more acute than in other areas. This is because the level of knowledge required to implement these programs (i.e. the level of knowledge required by the agent to do its work) is extremely high, and because the principal is less likely to be familiar with the subject compared to other areas of government.[66] Every congressman knows something about health care because they all

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[66] Guston, "Theory-building: Principal-agent theory and the structure of science policy," pp. 229-230.

visit the doctor. Most know something about banking and trade for similar reasons. General knowledge of these subjects is relatively easy to come by. But designing an airplane is different. Technical knowledge can only be acquired after years of work. It stands to reason that in areas where information asymmetry is likely to be more acute, principals are going to be more aware of its ability to be used to their detriment *and its ability to be used to the detriment of others*. These examples are therefore more suitable to expanding the theoretical boundaries of principal agency into new areas, because they focus attention on the fundamental problems of delegation. One criticism of this approach will be that in the cited examples, congressional involvement was limited. But I will show that this involvement was limited *by presidential design*. There is a reason why these programs were undertaken the way they were, and that is because of the divided principal aspect of American government. Not all struggles between the two principals are public slug fests. Indeed, those are precisely the kinds of struggles that the president seeks to avoid.

I will not argue that this extensive use of structural control of bureaucracies that the president employs produces "better policy" from a strictly objective point of view. But from the president's point of view it does produce better policy, because his goals are relatively undiluted by interference from the other principal, Congress. Presidents are most effective when they act like kings and feel most effective when they are not required to compromise or coordinate with Congress. This does not mean that kings are what American government needs in order to work properly, or that kings are consistent with the American ideal of democracy, only that allowing the president to operate like a king changes the nature of political relationships in American government.

Chapter Overview

Chapter 2 will focus upon the behavior and powers of the principals, their electoral incentives, and the tools that the president has developed over time to enhance his power.

Chapter 3 will explain how the president can select—or even create—agents to enact his policies. It will demonstrate that the president's role as administrator of the bureaucratic state—a power inherent to the executive—gives him the ability to select or reject agents for their structure. This chapter will also outline some of the rules of the multiple-principal, multiple-agent "game." The next several chapters will consist of the case studies, demonstrating how structure has been used in the past to achieve presidential goals. Finally, the conclusion will recount the lessons of this model and address both its weaknesses and strengths. It will attempt to identify certain underlying trends in American politics that the model can illuminate, and demonstrate the ways in which the model can be used to predict certain behaviors. It will demonstrate that the presidential role as principal is still strong in the post-Cold War world and that there are other areas of national security and domestic policy where the president's powers are substantial and yet overlooked. It will also propose possible other areas of study—areas where the model should be applied to determine if it offers explanatory power.

Conclusion

This dissertation will seek to expand the purview of the principal agent model. First of all, as already noted, the principal agent model has dealt almost exclusively with one branch of the government (Congress) and one area of the bureaucracy (regulatory agencies). This dissertation will apply many of the lessons of the model to the executive branch, and to the national security bureaucracy. It will demonstrate that many of the assumptions of the model hold true for other areas of government beyond those already well-covered. It will also demonstrate that the executive branch's relationship to the bureaucracy is a subject in need of further study with this model. Thus, the two principals have the same ends—control—and use the same means—structure—but use it in different ways to achieve different intermediate goals.

If my theory is correct, this study will not simply copy the established lessons of the legislative-regulatory examples of the principal agent model and apply them to a different arena. It will demonstrate that an important factor is the presence of *multiple principals* dealing with *multiple agents.* It will also demonstrate that the existence of multiple principals (or, more to the point, the existence of one other important principal: Congress) is a major reason why presidents employ structure to their advantage, and will explain in part why the national security state grew the way that it did.

What this emphasis on multiple principals will also illustrate is that there are aspects of the rational actor and bureaucratic politics theories that are both correct simultaneously. As the bureaucratic politics model argues, decision making is indeed a game. But reflecting the rational actor model, this *is a game primarily between principals, not "actors" representing the bureaucracy.* It is a game of principals using the agents to some extent as playing pieces, conscious of their bureaucratic attributes, such as their operating modes, interests, biases, and past performance. The selection of the proper agent is a vital component in this game. An agent that has only limited connections with one principal can be of great value to the other principal. It is the means by which one principal prevails over the other.

Chapter 2
The President, Congress, and the National Security Bureaucracy

Many political scholars treat national security policy as the near exclusive domain of the executive, an area where the president enjoys unrivaled powers to command troops and organize the bureaucracy as he sees fit. Those who argue that Congress is predominant in directing national security are less prevalent, although they assert that after the Vietnam War Congress has increased its power at directing national security issues.[1] Much of their focus is on the one area in which it is clear that Congress has a major interest, the creation and protection of domestic military facilities.

Congress, at a basic level, shares many of the same interests in national security as the president does. Congress and the president both want to protect the nation from harm and therefore have an interest in maintaining military effectiveness. But Congress' very nature—a large body of individuals representing diverse constituencies—causes it to have other goals that affect how it conducts national security policy.

Beyond the basic concern with protecting the nation from harm, Congress' interest in national security policy is primarily dictated by electoral considerations. Congress members want to get reelected. In order to do this, they need to demonstrate their value to constituents. They do this by providing material benefits—jobs—to their home states and districts. This requirement determines how they perceive national security issues. But while Congress wants to distribute rewards, it also wants to avoid blame for bad decisions and for things like the loss of jobs due to defense reductions. Thus, even in the area in

[1] For instance, Samuel Huntington wrote in 1957 that Congress had greater powers and interest in national security than the president and that this was largely a post-World War II development. But other scholars, such as Roger Hilsman, beginning in the late 1970s, argued that presidential supremacy in national security affairs lasted until the 1970s, when Congress, responding to Vietnam and Cambodia, became more intensely involved in national security issues. Roger Hilsman, *The Politics of Policy Making in Defense and Foreign Affairs* (New York: Harper & Row, 1971).

which it is most involved—the protection of domestic military facilities—Congress has on occasion delegated authority in order to reduce the blame that can be placed upon it for unpopular decisions.[2]

The president's goals in national security are also dictated by electoral concerns, but in a different way than Congress. The president answers to a national constituency, and sometimes regional ones. But he does not often answer to individual local constituencies, certainly not in the same way that Congress does. The president's electoral considerations are much more heavily weighted toward the defense of the nation and the preservation of its military might, as opposed to the sponsorship of defense facilities. He is the Commander-in-Chief and is rewarded for acting like one.

Different Institutions, Different Powers

What is apparent from a study of the powers of the Congress and the president concerning national security is that they are not equal in scope or in type.[3] Congress is often restricted to blocking actions, not initiating them—serving a "limit-setting" function as opposed to an initiator function.[4] Congress can authorize money to buy weapons for an

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[2] Christopher J. Deering, "Congress, the President, and Automatic Government: The Case of Military Base Closures," in James A. Thurber, ed., *Rivals for Power* (Washington, DC: Congressional Quarterly, 1996), p. 154; Kenneth R. Meyer, "Closing Military Bases (Finally); Solving Collective Dilemmas Through Delegation," *Legislative Studies Quarterly* 20 (August 1995), pp. 393-414.

[3] Unfortunately, the institution of the Presidency has gone largely ignored within the study of American politics. The study of the presidency has been reduced to a study of individual presidents, and once they are reduced to the status of individuals, they drop out of any model of decision making. One of the benefits of a focus on Congress is that it suits the theorist's need for reduction. Individuals can be abstracted out of the picture and the theorist can focus on things like voting coalitions. As long as the president can only be addressed as an individual and not part of an institution, he *has* to be ignored, because all theoretical prediction rests upon an imponderable variable—the communications skills of the individual occupying the office. One of the few people to look at the role of the president in affecting areas that have previously been considered largely the realm of Congress and domestic interest group politics is David Lake. Lake noted that although there is a popular conception that trade policy is a product of domestic interest group politics, in reality, trade policy has had both a strong strategic component and has been affected by executive branch leaders. See: David A. Lake, "The state and American trade strategy in the pre-hegemonic era," in G. John Ikenberry, David A. Lake, and Michael Mastanduno, *The State and American Foreign Economic Policy* (Ithaca, NY: Cornell University Press, 1988), pp. 33-58.

[4] And, as noted in chapter 2, Congress almost never allocates more money to defense than the president, despite the fact that it is entirely within its power to do so. The best explanation for this is that Congress

army, but cannot dictate how the weapons are used or even order that they be used at all.[5] Warfighting strategy remains under presidential authority and although Congress has in the past attempted to restrict certain actions for arms control purposes (for instance, preventing the testing of certain weapons), it rarely attempts to directly control strategic decisions.[6] The Senate must ratify treaties, but it cannot initiate or negotiate them and rarely chooses to abrogate them. Thus, the president retains the power to initiate action in many cases, even if he can ultimately be thwarted. This power to initiate is an advantage that the president holds in many areas and is something he uses to stay ahead in the game. He can initiate faster and more often than Congress can respond.

In addition, much of Congress' power can only be applied to specific cases, and not general policy. As Roger Hilsman has noted, "some of the most important aspects of foreign affairs do not require specific and direct appropriations." "Programs," Hilsman says, "but not necessarily policies, require appropriations."[7] Congress might decide which weapons that the DoD will buy, but it cannot determine how they will be used, or even that they be deployed. A president can simply order forces to stay in barracks or suddenly decide upon their removal to another location.[8] For instance, President Kennedy secretly

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accedes to the presidential sphere of influence in the national security field, recognizing that the president is better equipped to direct the defense of the nation than Congress is.

[5] Hilsman, *The Politics of Policy Making in Defense and Foreign Affairs*, p. 78.

[6] An excellent example of the differences of these powers is the struggle between the two branches over the subject of ballistic missile defense. During the Reagan and Bush presidencies, a Democratic Congress blocked presidential attempts to develop a national missile defense system. It played the role of the limit-setter. But during the Clinton administration, a Republican Congress which supported national missile defense was for years incapable of initiating such a program. It could conceivably order the weapons developed, but the president did not have to deploy them. It was only when the administration reversed itself in 1999 that a national missile defense system moved toward deployment.

[7] Ibid., p. 73.

[8] Pork is certainly a major aspect of defense spending and congressional leaders wish to assure that money is spent in their districts. Nevertheless, they rarely get involved in deployment decisions—except in one instance, the National Guard and Reserves. In this case it is not unusual (although not necessarily common), for congressional leaders to dictate that certain weapons are based in their states. Note, however, that these are domestic deployment decisions, not international ones. The most recent notable example is Senate Majority Leader Trent Lott's apparent involvement in determining where several new Air National Guard transport aircraft will be based. See Walter Pincus, "Cargo Plane With Strings Attached," *The Washington Post*, July 23, 1998, A17.

decided to remove Jupiter and Thor missiles from Turkey and Italy after the Cuban Missile Crisis (thus essentially removing them from service). It was his decision alone and Congress neither tried nor would have been able to keep the missiles there—it was a presidential prerogative.[9] Strategic policies, defense postures, and general assurances of military support to foreign governments, are areas where Congress has frequently chosen to not get involved, in large part because for practical purposes it cannot get involved, and because it has had no incentive to really try.

There are various reasons for this beyond Congress' previously stated electoral interests. For one, it is the president who controls the flow of information on American actions overseas. For another, the president has the "instrumental initiative" in foreign affairs. He carries out a policy and in so doing makes secondary decisions that establish new lines of policy. Thus, the president, as head of state, can make many commitments to foreign powers that Congress is essentially (although not always) forced to honor. In contrast, Congress cannot commit the United States to foreign endeavors that the president opposes.

The president's constitutional authority for national security stems from his office, not specific lines of text in the Constitution. The Constitution makes him Commander-in-Chief without defining that role. It has therefore been in the president's interest to define what he wants to do in these terms—to invoke the title of Commander-in-Chief as much as possible and as broadly as possible and to define it in the ways that expand his authority. The lack of clarity actually works to the president's advantage. During the Cold War, American society in peacetime began to experience wartime regulation.[10] This was aided

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[9] Kennedy's concern was that this was a NATO decision and therefore not his alone to make, which he emphasized to the Soviets. This was a rather dubious assertion, since if the United States wanted the missiles removed, NATO could not prevent it. Nevertheless, it was clear that the only American official with the power to make the decision was the president. Raymond L. Garthoff, *Reflections on the Cuban Missile Crisis* (Washington, DC: Brookings, 1987), p. 54, and Robert Kennedy, *Thirteen Days: A Memoir of the Cuban Missile Crisis* (New York: W.W. Norton, 1969), pp. 108-109.

[10] Daniel Patrick Moynihan, *Secrecy* (New Haven, CN: Yale University Press, 1998), p. 154.

by an increasingly elusive distinction between foreign and domestic issues. After all, international communism was a global *and* a domestic threat.[11] Presidents have defined many other issues in similar terms, such as the war on drugs and terrorism. They do this because it enhances their power.[12]

Presidents have also often asserted that many *administrative* actions stem from their role as Commander-in-Chief. Sometimes they lose this argument (for instance, Truman's attempt to seize the steel mills during the Korean War), but when they win, they then interpret their authority in even broader terms. "War" has therefore been expanded rhetorically and operationally to include many actions involving no declaration of war, and has also been deliberately obscured to enhance presidential power. Presidents who can successfully claim that a state of war exists can enhance their power and justify many actions that they could not otherwise justify.[13]

The president's powers also come from the long tradition of the Presidency—the powers that the institution of the Presidency has accrued over time. While these may have started out as limited constitutional powers, they have often expanded. Left unchallenged by the legislature, their expanded definitions become just as unassailable as if they were written in the Constitution itself. In the words of one theorist: "To define and measure presidential power in terms of (the president's) ability to make choices and decisions, initiate proposals and veto legislation is to ignore the organization of authority in political and economic institutions... In addition, it ignores the exercise of influence and power of

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[11] Ibid., pp. 157-158.

[12] David Lake notes that presidents have the ability to turn domestic issues into international issues where presidents exert more authority because of their strategic location at the juncture of domestic and international affairs. Thus, even domestic farm issues can become international issues if the president defines them carefully. David A. Lake, "The state and American trade strategy in the pre-hegemonic era," p. 36.

[13] A recent example of this is discussed in the concluding chapter. In 1999 President Clinton stated that the "war on drugs" was one reason that he was unilaterally extending the zone of control along the American coast. This effectively constituted American ratification of a key portion of an international treaty that the U.S. Senate had not signed.

other policy elites in and out of government in limiting the scope of initiation, defining the issues, controlling the agenda, implementing and administrating policy programs, or, in other words, in determining policy results."[14] These powers are not always codified in law, but are nevertheless vitally important. They can determine outcomes just as much as the more visible constitutionally-delegated powers. They are also more readily available to the president than to Congress simply by the nature of the two institutions.

For instance, one of the major differences between the executive and legislative branches of government is that the executive does not suffer from collective action problems. While Congress requires hearings, debate, coercion, compromise, coalitions and voting to pass a piece of legislation, the president can issue orders at the stroke of a pen or making of a telephone call. Congress is not of a single mind on any subject whereas the president is (or so one would hope). Although congressional committees can exert influence on agents without actually legislating, they still are more cumbersome and less direct than the president. Relative to Congress, he makes decisions essentially as a unitary actor.

The president also speaks with one voice. Congress, which does not have a single mind on any subject, certainly does not speak with a single voice. Essentially, it suffers not simply from a collective action problem, but from a collective identity problem. A president can more easily persuade a Congress, or at least divide it, than a Congress can persuade a president. Although the Constitution may refer to the Congress and the Presidency as if they are two unitary actors, in reality the Congress is a collection of individuals who do not always agree with each other on any given subject—a factor that the president can exploit. Decision making is thus inherently easier for the president. Admittedly, Congress is controlled by leaders, who attempt to operate it as a more unified

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[14] Myron Q. Hale, "Presidential Influence, Authority, and Power and Economic Policy," in Dalmas H. Nelson and Richard L. Sklar, eds., *Towards a Humanistic Science of Politics* (New York: Latham, 1983), p. 408.

body. It is not a babylon of voices and opinions. But it is certainly not a unitary actor and it operates differently.

Another important fundamental difference in these two institutions is the speed and dexterity with which a president can act to exploit new extra-constitutional sources of power. This is not simply the *ease* of a presidential signature giving an order, but the *speed in which it can be made*. While much has been written of the tendency for the federal government to gradually move into the "twilight area" that is constitutionally reserved for the states but unexploited by them, considerably less has been written of the president's comparative advantage at exploiting this twilight area relative to Congress.[15] He can move more quickly than the cumbersome legislature can to exploit opportunities or to recover from defeat. He also has the incentive to do so, since this constantly places him in the role of initiator, not reactor. Thus, while principal agent theorists have noted numerous instances where the legislature deliberately chooses to slow the policy implementation process down, the fact that the president chooses to speed things up has gone virtually ignored.[16] But speeding things up is a means the president uses to gain an advantage.

But perhaps the most overlooked power of the Presidency in national security affairs is the president's role as implementer of policy decisions. The president controls the executive branch and it is the executive branch that houses the government. Some have chosen to interpret this to mean that the president is therefore an agent of Congress. They state that Congress "delegates" authority for decisions to the president or executive agencies.[17] But as noted above, there are plenty of areas of national security policy where

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[15] As the reader will note, "twilight areas" abound within American politics, existing between the states and the federal government, the powers of the Congress and the President concerning foreign affairs, and many other areas. The possible analogies are endless...

[16] For the classic discussion of Congress' attempt to slow down the implementation of new laws and policies, see Mathew D. McCubbins, Roger G. Noll, and Barry R. Weingast, "Structure and Process, Politics and Policy: Administrative Arrangements and the Political Control of Agencies," *Virginia Law Review*, Vol. 75, 1989, p. 441.

[17] Deering, "Congress, the President, and Automatic Government: The Case of Military Base Closures," p. 154.

the president has long acted independently and there are relatively few areas where Congress has chosen to assert its interests. Furthermore, within the overall field of national security policy, it is fairer to say that Congress has not simply delegated its power, but *abrogated* it. Congress has failed to assert its authority while the president has acted decisively. Over the years, the president, possessing implementation authority and acting decisively, has developed highly specialized tools to increase his effectiveness at achieving his goals.

Accumulated Powers of the Presidency

While the president certainly thinks and acts strategically, he also has a definite interest in preserving the powers of his office. Doing so on individual matters translates into power on future issues. Thus, the president is wary of taking any actions that might undermine his own authority in future cases. And he tends to plot not only to achieve individual goals, but to preserve his powers for future use.

The president uses a number of specific power tools to exert control over the defense bureaucracy and the establishment and implementation of national security policy. Because these powers are unique to the Presidency, they deserve separate discussion here.

Broad Powers: Establishing the Agenda

John Kingdon, when discussing the American political system, stated about the Presidency: "No other single actor in the political system has quite the capability of the president to set agendas in given policy areas for all who deal with those policies."[18] It is the president who can determine what subjects are discussed in the political sphere and how they are discussed. Furthermore, his legislative proposals set the standard by which the

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[18] John W. Kingdon, *Agendas, Alternatives, and Public Policies* (New York: Harper Collins, 1984), p. 25.

subject is addressed. As one lobbyist quoted by Kingdon stated: "Obviously, when a president sends up a bill, it takes first place in the queue. All other bills take second place."[19]

While he can do much to establish it, the president does not *control* the policy agenda. There are too many events that impinge upon this agenda as well as the agendas of others. While a president may wish to focus on social welfare issues, a foreign war or personal scandal may demand his attention. In addition, while a president can dominate the agenda, he cannot dominate the alternatives which are considered. His proposal may become first among many, but it is never the sole option. Furthermore, he cannot determine the final outcome. Although he maintains significant power to determine what is discussed and how it is discussed, the American system is nevertheless a democratic system.[20]

This ability to establish the agenda is buttressed by other presidential resources. These include the traditional powers such as the veto and the prerogative to hire and fire the bureaucratic leadership. They also include the organizational power of the Presidency—the fact that the Presidency is a unitary decision-making entity.

Finally, the president has a far greater ability to command public attention than the Congress. He speaks with a single, clear voice, and uses the "bully pulpit" to rally the public to his cause. Not only is he a singular figure, but the president possesses far more interesting symbols and tools of his office—the plane, the guards, the cars, the White House—as well as tremendous informational resources. These can be used to attract attention to the causes he wants to highlight. As various people have pointed out, many of the same issues exist over time regardless of the office-holder, but it is the power of the

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[19] Ibid.

[20] There are few examples better than the 1993 push by the Clinton administration for national health care. The agenda was established by Clinton. The alternatives were defined by Clinton. But Clinton was not able to turn the agenda into actual legislation.

president to elevate certain issues to the national stage.[21] Congress, with its cacophony of voices, has a much harder time elevating single issues to national prominence.

The president, however, is also the center of a team of actors. He commands both a White House staff and the political appointees in the bureaucracy. These too can be used to establish the agenda and, more importantly, the alternatives available. It is the political appointees that other actors in the political system turn to for direction and guidance. Although they can disagree with the president, political appointees tend to be highly responsive to presidential direction.[22] Arguments that they have a tendency to "go native" and become absorbed by the agencies they oversee appear to be greatly exaggerated.[23]

One of the problems with the focus on establishing the agenda is that it is still a focus on *legislation*. Even more recent and ambitious explorations of presidential power have maintained this heavy focus on the passing of laws and the power that the president has within that realm, an area of governance where many argue that the president comes up short compared to Congress.[24]

But unlike Congress, not all presidential power ultimately requires legislation or the threat of legislation. And unlike the power to establish the agenda, the president has powers that do not automatically require the cooperation or acquiescence of the legislature. They are narrower in scope, but deeper in impact; they are faster, easier to implement within their limited sphere, do not require the expenditure of political capital, and do not

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[21] This applies to the political appointees as well. As one person stated: "People at the secretary's level do not really discover issues. They elevate issues. The issues are all there. There is nothing that is new in what is available. The question is, what will you elevate? The question is, what do you have significant interest in to spend your time on?" Ibid., p. 31.

[22] There are other issues, to be sure. One argument is that the political appointees, due to their transitory nature, do not represent the institutional memory of the agencies they command and that the civil servants possess the informational resources necessary to run the organization. They can be sources of opposition to the direction established by the appointees. But as Kingdon's research demonstrates, this is not the way that the civil servants themselves view it. Generally, when they choose to oppose the direction from the appointees, they end up feeling miserable rather than victorious. The citizenry also benefits because the very fact that there are two competing power centers in the United States tends to depoliticize the senior civil service.

[23] Ibid., pp. 30-32.

[24] Kerbel, *Beyond Persuasion: Organizational Efficiency and Presidential Power.*

require nearly as much effort. The President's possession of implementation authority does *not* require that legislation be passed so that he can act. He can implement his own policies without legislation.

Deeper Powers: Executive Orders, Presidential Directives, and Stealth

There are two additional aspects of presidential power. These are the executive powers which a president inherits as part of his office, and powers which, for lack of a better term, are best referred to as "stealth powers." The president has what could be considered the ultimate power of government—the ability to take action, establish policy, or expend funds entirely in secret, without notifying Congress or the public. He can succeed or fail at his endeavors, without anyone even knowing it. Thus, one of the benefits of such powers is that their failure does not automatically result in a perceived reduction in the power of the president to accomplish his objectives.

These executive and stealth powers will be discussed shortly, but first it is necessary to explore the context in which they have been exercised. Both of these types of powers are more easily, but not exclusively, exercised under the broad umbrella known as "national security policy." They have often originated in the national security field, but they stem largely from the 20th century transformation of the definition of "government" to include an immense bureaucracy. Powers acquired in the control of one part of this bureaucracy have been exercised in the control of others. Power therefore does not simply accrue to the institution of the Presidency, it accretes within the government that the president oversees. A relevant example is the Administrative Procedures Act of 1946. Although it was intended to produce accountability and openness within government and has largely done so, it allowed for classification for "any function of the United States government requiring secrecy in the public interest." Over the years, this exemption has expanded to include a broad array of government agencies that one would not normally

think even have secrets to keep, such as the Department of Transportation and the Weather Bureau.[25]

Executive Power

The President's authority to act concerning foreign affairs stems, first and foremost, from Article II of the Constitution, which states that "the executive Power shall be vested in a President of the United States of America." There are two aspects to this: the power to execute laws and the power to represent the United States abroad. But there were no specific instructions within the clause. It was therefore left to the officeholder to define his authority. His powers were limited by the Constitution, and by statutory limitations imposed by Congress exercising one of its enumerated powers. These executive powers also derived their authority from constitutional obligations, such as Article II, Section 3 of the Constitution which states that the president "take Care That the Laws be faithfully executed."

The president commonly exerts executive power through the executive order. Because the power of the executive order is essentially derived and evolved power, the limits of its reach have never been fully explored. Certainly there are boundaries pertaining to legality—all executive orders have to be based, at least loosely, on existing statute—as well as practicality (such as the necessity of seeking funding for a policy enacted through an executive order).[26]

Executive power was first asserted by George Washington and since then has been used by succeeding presidents and recognized by both Congress and the Judiciary. Presidential proclamations and executive orders have been issued by presidents since the creation of the United States. They derived partly from monarchical authority whereby the

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[25] Moynihan, *Secrecy*, pp. 157-158.
[26] Harold C. Relyea, "The Coming of Secret Law," *Government Information Quarterly*, Vol. 5, No. 2, 1988, p. 105.

king declared his will. Executive orders were orders to the parts of the government that the president oversaw, and as that government expanded in both size and purview, executive orders gained more power. Although they did not carry the force of law outside of the government, they quickly obtained its force within it. But one of the problems presidents encountered was that, in order for an executive pronouncement to be followed, it had to be known. Indeed, as the federal government expanded, this was a matter that the Congress itself had to address to ensure that its own legislation was followed.[27] The problem was exacerbated for both branches because for a long time there was no formal provision to ensure that laws were publicized.[28] This became both a management problem within the government itself, and a governance problem for the United States as a whole. Increasingly, not only was the populace ignorant of the law, but the government was ignorant of the law as well, a factor that made governing difficult.[29]

The congressional response to this was the creation in 1935 of the *Federal Register*, a formal publication which contained legislation, changes in regulations, and executive orders.[30] Although it was necessary to ensure that commands were known and could

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[27] The origins of the publication of laws and regulations in the United States lies with the well-known statement by English jurist John Selden that "Ignorance of the Law excuses no man; not that all Men know the Law, but because 'tis an excuse every man will plead, and no Man can tell how to confute him." S.W. Singer, *The Table-Talk of John Selden* (London: John Russell Smith, 1860), p. 180.

[28] Knowledge of the law presumes that the law has been made public and available so that any responsible citizen can gain access to it. From this philosophy emerged a haphazard and constantly evolving federal policy to publish laws and regulations so that they could be made accessible. Both congressional statutes and executive orders and proclamations were published by the government and distributed to libraries and also published in newspapers during much of the 19th century. Relyea, "The Coming of Secret Law," pp. 97-104.

[29] The system began to break down following the First World War, however, particularly with the rise of the "Administrative State." The amount of government regulations vastly increased and there was no official forum for their publication. This resulted in what one historian has called "fugitive law"—rules and regulations that were ostensibly in effect, but could not be found in government publications. The situation had become quite extreme by the time of the New Deal. For instance, the government had brought an indictment and made an appeal before the Supreme Court before discovering that the regulation on which the proceeding was based did not exist. In another instance, federal attorneys pursued a case before the Supreme Court before discovering that they were doing so under a revoked executive order.

[30] The Federal Register was established by the Federal Register Act of 1935. The Federal Register was required to publish: "1) all Presidential proclamations and Executive orders, except such as have no general applicability and legal effect or are effective only against Federal agencies or persons in their capacity as officers, agents, or employees thereof, 2) such documents or classes of documents as the President shall

therefore be implemented, this was at the time an unrecognized (and unintentional) restriction on executive power, for it required that presidential communications of a broad-reaching nature be published openly instead of in secret. Once public, they could be vigorously debated or opposed, and Congress maintained the authority to counter them through statute, or at least to deter them by threatening statutory action. However, to do so still required collective action and the marshaling of extensive resources (such as the requirement for super-majorities to override vetoes), whereas the executive order only required the stroke of a pen. The president thus maintained a significant degree of initiative inherent in the power of the executive order despite the fact that he now had to act in public. Other than the requirement to make the orders public, no other congressional limitations were placed on the orders at the time and Congress has since chosen not to challenge the executive's prerogative to issue orders in such a manner. Congress has from time to time recommended that the president make executive orders available for discussion before implementation, but it has not attempted to legislate this requirement and presidents have clearly not complied. Doing so could be ruled unconstitutional due largely to the long-established precedent. Congress has therefore acceded this power to the president without contest.

Despite its limited nature compared to statute, the executive order still wields considerable power, especially when it is employed repeatedly over a period of time as part of a larger strategy. Whereas macro-program change in a bureaucracy usually requires legislation and is difficult and rare, micro-program change is easier and more common. Executive orders or administrative regulation can change administrative interpretations of existing programs. The president has wide latitude to issue executive orders on specific

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determine from time to time have general applicability and legal effect; and 3) such documents or classes of documents as may be required so to be published by Act of the Congress: Provided, That for the purpose of this Act every document or order which shall prescribe a penalty shall be deemed to have general applicability and legal effect." 49 Stat. 501.

subjects provided that they are not inconsistent with the underlying statutes.[31] What this does, essentially, is place the initiative firmly in the president's court. He can make executive decisions that move the bureaucracy in the directions he wants and do this continually—a succession of minor steps ultimately leading to a major change in the interpretation of the law. Congress' only recourse is to amend the relevant statute in order to overturn the new executive reinterpretation. But this requires collective action (which is slow and difficult), and the president still maintains a veto power. As one presidential scholar noted: "In essence, unless super-majorities in both chambers of Congress vote otherwise, the executive interpretation has the force of law."[32]

Executive orders can have broad reach. President Lincoln freed the slaves by proclamation, and Franklin Roosevelt created new agencies and detained Japanese-Americans in camps by executive order. There are many other examples of presidents using their executive power to undertake substantial policies: President Carter chose to return seized Iranian assets as part of the hostage-release deal in 1981. In 1985 the NAACP was excluded from federal United Way drives. In the early nineties President Bush commanded that Haitian refugees be returned to Haiti. And during his first term President Nixon ordered that classified nuclear secrets could not be released to Congress under a Freedom of Information Act request (i.e. a federal statute). All of these actions were upheld by

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[31] Bert A. Rockman, "The Federal Executive: Equilibrium and Change," in Bryan D. Jones, *The New American Politics* (Boulder, CO: Westview Press, 1995), p. 152. This power was substantially reaffirmed by the Supreme Court in 1984 in U.S. v. Chevron.

[32] This is an aspect of presidential power that has been largely ignored until recently. It was a specific strategy for the Nixon administration, but did not progress very far before Nixon was distracted by Watergate. It was also a strategy for the Bush administration and achieved greater success. But it only achieved notice in Congress when it became an overall strategy employed systematically to a broad range of issues—in other words, it was only noticed when it became blatant. The fact that presidents have used executive orders to redefine bureaucratic policy for a long time has achieved far less notice. The fact that they have used even more clandestine means to make policy has gone largely unnoticed even within Congress. Ibid., p. 152.

federal courts.[33] Although used for broad areas of domestic policy, these executive powers have had their greatest applicability to foreign affairs.

The federal judiciary has generally supported these powers of the executive. In United States v. Curtiss-Wright, the Supreme Court declared that the president possessed broad discretionary powers to act in managing the external relations of the country, stating that "the President [is] the sole organ of the federal government in the field of international relations—a power which does not require as a basis for its exercise an act of Congress."[34] Curtiss-Wright has since been cited in a wide variety of cases where the president has asserted his authority concerning international relations and national security issues. Even in cases where the Court clearly rejected a president's sweeping claim of executive privilege as it applied to communications concerning domestic affairs (as in United States v. Nixon), the Supreme Court repeatedly stressed that military or diplomatic secrets are in an entirely different category and are inextricably linked to the President's Article II duties.[35]

Presidential Directives

The growth of the national security state and, presumably, dislike of the public nature of the executive order, led presidents to create a new policy tool, the presidential directive. Presidential directives were an attempt to essentially regain the clandestine nature of the executive order because they did not need to be published in the Federal Record. Indeed, they did not need to be published even in a classified forum, or revealed to the Congress. The president could keep them confined to the executive branch and could classify them with his own authority.[36]

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[33] Frank J. Murray, "Federal Courts View Orders Favorably," *The Washington Times*, August 23, 1999, p. A10; Robert Pear, "The Presidential Pen is Still Mighty," *The New York Times*, June 28, 1998, Section 4, p. 3.

[34] Rockman, "The Federal Executive: Equilibrium and Change," p. 92.

[35] Ibid., pp. 92-93.

[36] The presidential directive is a powerful executive tool. A 1988 Government Accounting Office report found that "a significant number of the unclassified presidential directives available for our review

Presidents began enacting many policies through classified directives, and Congress' ability to learn of these directives was limited. Nevertheless it continued to try. Because of their secretive nature compared to the executive order, one might assume that presidential directives deal exclusively with subjects pertaining to the president's role as Commander-in-Chief of the armed forces. That is not the case. President Truman's directives concerned such topics as the construction of airfields in Turkey, economic relations between the U.S. and Yugoslavia, and attempts to trace persons responsible for security leaks.[37] Those during the Eisenhower, Kennedy and Johnson administrations concerned police assistance for less developed countries, the dispatch of fighter aircraft to the Congo, U.S. monetary contributions to the Laotian government, an increase in U.S. military support forces in Vietnam, and the initiation of a Central American Export Development Program.

The history of the presidential directive indicates a broad degree of largely unrecognized power within the executive branch. The president has frequently authorized

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established policy, directed the implementation of policy, or authorized the commitment of federal government resources." Perhaps equally significant is the fact that this GAO study was able to look at less than one fourth of the approximately 1,042 presidential directives issued between 1961 and 1988. In essence, the congressional agency was only able to look at those presidential directives that the executive had made publicly available, declassified, or classified at a low level and declassified after the previous executive had left office. Thus, the executive was able to shield the vast majority of its directives from congressional scrutiny even years after they had been replaced. In fact, many of the *unclassified* presidential directives were never reported to Congress. "National Security: The Use of Presidential Directives to Make and Implement U.S. Policy," GAO/NSIAD-89-31, December 1988, p. 1.

[37] The Nixon, Ford and Carter administrations issued directives to end the production of biological weapons, implement a research program in the Antarctic, combat population growth, establish telecommunications security, and guide the conduct of civil space programs. President Reagan issued directives that authorized the Defense Department to reprogram funds to absorb cost overruns, established a policy to help famine victims in Third World areas, and established a policy for commercializing expendable space launch vehicles. What this broad range of subjects also demonstrates is the growth of the national security umbrella to cover such things as foreign economic and police assistance—virtually anything that the president wants.

Of the 247 directives that the GAO analyzed, only 26 involved domestic issues. But the report noted that the majority of these were in recent years, indicating that domestic policy issues were increasingly being addressed by presidential directives. Whether domestic policy issues could be mandated in a classified directive is unknown, although there is certainly no constitutional or legislative rule which prevents this from occurring. Although the Administrative Procedures Act restricts it to some measure, this does not appear to have been tested by Congress or the courts. "National Security: The Use of Presidential Directives to Make and Implement U.S. Policy," p. 3.

foreign aid programs, covered up Defense cost overruns, authorized military facilities, and created domestic policy programs with the stroke of a pen and *entirely beyond the purview of the Congress*. Some of these actions run directly counter to the powers of the Congress. For instance, Congress holds the power to appropriate funds for the military, but this is undercut if the president can secretly shift these funds once they are appropriated. By doing so, he can hide problems, thereby restricting Congress' ability to monitor agency performance.

Ultimately, in some of these instances, congressional notification or authorization may become necessary, particularly when additional money is required. But the fact that the policy can be initiated quickly and without public or congressional debate bespeaks the significant power that resides in the presidential directive. The power to issue presidential directives is nowhere stated in the Constitution or any other area of statutory law—the president simply does it because presidents have been doing it for years.[38] Clearly, the creation and expanding scope of the presidential directive is a prime example of presidents redefining their duties and enlarging the powers of their office. These expanded powers then accrue to the institution and are transferred to the persons who command it.

Stealth Powers

As noted in the introduction, the president's goal in the game of politics is not simply to play by the rules and win, but to rewrite the rules in order to make winning easier. One of the most effective ways he has of achieving this is to conduct his affairs in secret, to effectively exclude the other players from participating in the game. As noted above, he can issue presidential directives in secret. The directives themselves are tools of

[38] Congressional attempts to limit this power have not been serious nor have they achieved much. In 1988, H.R. 5092, a bill to establish the Presidential Directives and Accountability Act, was introduced. It would have required the registration of presidential directives, including national security directives, with the Office of the Federal Register. It also would have required their disclosure to the Speaker of the House of Representatives and the President Pro Tempore of the Senate. "National Security: The Use of Presidential Directives to Make and Implement U.S. Policy," p. 3.

presidential power. But they can also be wielded to enact yet another tool of presidential power—his "stealth power," or the power of classification. This differs from the other executive powers discussed earlier. Stealth powers are what allow the president to shield an agency or an activity from congressional scrutiny, or to limit the type and amount of information that it provides to the Congress. The difference between secret presidential directives and stealth powers is that presidential directives primarily consist of a single order. Stealth powers involve entire bureaucracies and their actions. They refer to the ability to classify not only orders, but activities, thereby shielding them from both public and congressional knowledge.

These powers are ostensibly used for strategic considerations—to ensure that the nation's enemies are unaware of its capabilities. However, it is clear that they are often used for other reasons as well. Stealth powers have been wielded quite often without the input or even knowledge of other players until after their results have become fait accompli. These powers may often be narrow, but they are deep, for the president can enact policies without the traditional encumbrances he encounters in the normal political process, with an efficiency that most politicians could only dream of. This is important, for as previous scholars have noted, it is more difficult to reverse policies that have become formalized than to stop them before they start. If the president can formalize them in secret, they are harder for Congress to reverse even when it ultimately learns of them.[39] The ramifications of

[39] There are a number of examples of this, some of which are the focus of the later case studies. One that will be mentioned later, but is not the focus of a case study, is the example of the military weather satellite program, which was classified in large part because of a view that the Congress would not support both military and civilian weather satellite programs simultaneously. Once its existence became known, Congress did nothing to merge the programs and they were not merged until 35 years later, at the initiative of the executive. For a theoretical discussion of how Congress as principal attempts to prevent policies from becoming formalized without its extensive involvement, see Jonathan R. Macey, "Organizational Design and Political Control of Administrative Agencies," *Journal of Law, Economics, and Organization*, Vol. 8, No. 1, Spring 1992; Mathew D. McCubbins, Roger G. Noll, and Barry R. Weingast, "Structure and Process, Politics and Policy: Administrative Arrangements and the Political Control of Agencies," *Virginia Law Review*, Vol. 75, 1989.

these powers are rather extreme for democracy, but they have generated nary a whisper among political scientists.

There are essentially two major aspects to the use of security classification as an instrument of power. The first is the way in which it is applied within the government by the executive branch—what things are classified and why? The second is the role of congressional oversight—what does the president have to tell Congress and how is Congress limited in its response? These two aspects of classification can at times be distinct and at other times be virtually indistinguishable. The former frequently refers to documents, whereas the latter is more amorphous and refers to actions.

The ability to classify documents is theoretically a limited authority reserved to only a small percentage of people in the federal government.[40] At the top of this list, of course, sits the president. He can declare anything he wants to be classified. He can also, through this power, restrict who sees it, both within his own branch and in respect to Congress. Thus, if the president were to establish a program or a policy group and restrict access to it to only a few people, then not even other people with the right to impose classification could gain access to that information. This is a sweeping power—the power to exclude.

This is not a power that is diminishing now that the Cold War is over. Indeed, it is actually increasing, with more and more documents being classified each year, despite reductions in the defense budget and reductions in the number of people with original classification authority.[41] Since America's enemies have not grown stronger, it is worthwhile to ask if secrecy serves other purposes beyond simply national security. Surely it is an important means of denying information to various actors, including Congress. It is also useful for keeping information from the press. This too can ultimately

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[40] As of 1996, there were 4420 persons who could classify information (about 1000 lower from Cold War levels). Moynihan, *Secrecy*, p. 74. In actuality, far many more people hold derivative authority as opposed to original authority—i.e. they can classify things because they deal with subjects or programs that others, with greater authority than they, have deemed worthy of protection.

[41] Moynihan, *Secrecy*, pp. 74, 217-218.

be aimed at Congress, for it negates the fire alarm monitoring that is Congress' most efficient means of monitoring the bureaucracy. A silent alarm bell will not alert Congress of problems in secret programs.

Like presidential directives, the power of classification is a power that was never specifically granted to any agency or branch of the government, but which essentially evolved over time. It is not based upon statute. During the latter part of the Civil War, certain national security documents were stamped with a "Secret," "Confidential" or similar designation. There was never any specific authorization for these designations, nor a description of exactly what they meant (for instance, "secret" usually meant that the document was to be seen only by the intended recipient, not by a class of people who had been pre-approved for such documents as in the modern definition).[42] Over the years these designations were refined and expanded, sometimes by presidential directive, and other times through at least oblique mention in military authorization bills. The Espionage Act of 1917 provided a vague statutory basis for secrecy, at least a congressional imprimatur to later presidential actions.[43] By the beginning of the Cold War, the power to classify had become substantial. Throughout the history of classification of government activities, the president has operated from the position that it is his prerogative to establish standards for classification and Congress has not essentially challenged that position. Indeed, only in 1998 did Congress propose providing a statutory basis for the secrecy and classification system, but this attempt failed and follow-on attempts will be similarly unsuccessful.[44] Through its actions Congress has acknowledged that classification is a presidential power.

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[42] Harold C. Relyea, "Government Information Security Classification Policy," U.S. Congress, Senate Select Committee to Study Governmental Operations with Respect to Intelligence Activities, Final Report: Supplementary Reports on Intelligence Activities, Book VI, S. Rept. 94-755, 94th Congress, 2d session, Washington, DC, U.S. Government Printing Office, 1976, pp. 313-352.
[43] Moynihan, *Secrecy*, pp. 91-92.
[44] "Secrecy Bill Elicits Opposition—From its Supporters," *Secrecy & Government Bulletin*, Issue No. 73, March 1998.

In addition to the use of clandestine executive powers, presidents have also asserted that certain information was shielded from congressional inquiry by "executive privilege."[45] Further, even outside of the strictly-defined security in the intelligence field, presidents have argued (with varying degrees of success) that certain information beyond that which is covered by the umbrella of "executive privilege" is also beyond congressional scrutiny. There have been numerous situations when a President has refused to provide Congress with information that he deemed confidential.[46] Congress itself has admitted that its power to get information from the executive branch is not absolute.[47] Information control is a tool that is more available to the president than to the Congress by the nature of the two institutions. Congress' control of government agencies comes primarily through legislation or the threat of legislation, and bills by their very nature must be made public.

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[45] Executive privilege stems from the legal practice whereby the "working papers" of the prosecution or the defense are considered sacrosanct. Neither side is allowed to know the strategy, thinking, or deliberations of its opponent. Presidents enjoy the same right. They can declare that their working documents and internal policies are immune from the inquiries of Congress. This, they argue, is essential for the operation of the executive. Lacking such protection, individuals involved in the production of executive policies would be unwilling to speak freely in otherwise closed forums. The courts have generally upheld this privilege and Congress frequently chooses to avoid challenging it.
As a result, presidents have found it convenient to move policy formulation into government spheres where it is immune to congressional inquiry. For instance, during the Reagan administration, the formulation of civilian space policy was moved from the Office of Science and Technology Policy (where it had been during the Carter administration) to the National Security Council. Reagan established a series of Senior Interagency Groups (SIGs) for various subjects within the NSC. This had two effects which benefited Reagan's interests. First, it moved the discussion of the subject into a realm that benefited national security organizations (DoD, DoE, CIA and the State Department) at the expense of civilian organizations (NASA, Commerce). Secondly, it moved the deliberations to a realm that Congress did not oversee. Although congressional committees could question NASA officials as part of their oversight duties, all policy discussions within the Senior Interagency Group were considered covered by executive privilege and NASA officials were not allowed to discuss them publicly even if they wanted to. This was an aspect of policy formulation during the Reagan years which was particularly irksome to the relevant congressional oversight committees, which fought it continuously to no avail.

[46] Examples include President Hoover's refusal to provide the Senate Foreign Relations Committee with letters concerning negotiation of the London Treaty and President Eisenhower's refusal to turn over personnel information during Congressional investigations into the loyalty-security program.

[47] James Madison, then a member of the House of Representatives, defended the president's right to withhold information pertaining to the Jay Treaty. Madison stated that "the Executive had a right... to withhold information, when... [he] conceived that, in relation to his own department, papers could not be safely communicated." Prepared Statement of Charles J. Cooper, Assistant Attorney General, Office of Legal Counsel, U.S. Department of Justice, Oversight Legislation, Hearings Before the Select Committee on Intelligence of the United States Senate, 100th Congress, 2d session, S. Hrg. 100-623, pp. 91-92.

Presidential actions do not have to be made public and do not even have to be told to members of Congress.

The most basic advantage the president holds is that he possesses implementation authority. He can select the institution to enact presidential policies. Although there are limits upon this power and Congress can proscribe certain institutions to be used for certain policies, in actual practice, the president has greater latitude in selecting an institution for a task than Congress does on national security issues.

Only when these powers are insufficient to achieve his goals must the president resort to legislation. He must propose a bill and get it passed by Congress. But here his powers stemming from initiative and agenda setting come into play. For instance, the substantial reforms undertaken within the Defense Department under Secretary of Defense Robert McNamara were both an example of administrative power (no act of Congress was required to implement new cost accounting methods within the Department of Defense; McNamara simply did it) and the president's agenda setting powers (for instance, the reorganization of Defense R&D efforts in 1961, which required congressional approval).

But ultimately *information is power*—who has it, how they acquire it, trade it, distort and deny it to others. Clearly, the president has the means and the motive to deny information to Congress, whereas it cannot do the same to him.

Information Asymmetry and Structural Control of the Defense Bureaucracy

While presidents can use their power to limit the information that flows to the Congress, they too have to be worried about the information that they receive from the bureaucracy. They have to monitor the bureaucracy to ensure that it does what they want.

But here there is another fundamental difference between Congress and the president. Congressional scholars have focused much attention on the issue of congressional oversight of the bureaucracy. Congress must oversee the bureaucracy in

order to ensure that it does what Congress wants, rather than what the president wants. This is an inherent recognition of the fact that the president can oppose Congress not merely during the passing of legislation, but through implementation after legislation has already been passed. But many scholars, while concerned with issues of oversight, quickly lost sight of the president's role in pushing the bureaucracy in different directions than those intended by the Congress—in creating bureaucratic drift. The president essentially became synonymous with the agent, not a separate decision maker. While flawed, this view does recognize that the president to some extent *is the bureaucracy*. Whereas the president can attempt to push his agent in different directions in secret, and keep this from Congress through the manipulation of information asymmetry, Congress's efforts to move the bureaucracy toward certain policy goals are not shrouded in secrecy. They are public and visible to all. As a result, it is significantly easier for the president to monitor agency performance than it is for Congress, because the president does not have to worry about the hidden agendas of the opposing principal—Congress' hidden agendas cannot remain hidden, for they must become public in order to work. In essence, Congress experiences the moral hazard problem—the agent reporting only on things it knows are being monitored and keeping others secret—*because the president creates the moral hazard problem.*

When it comes to actual monitoring, Congress has to hold hearings or mandate reports and finds its preferred monitoring strategy—fire alarms—to be of limited use (both because the president may be silencing the alarms and because in national security policy, fires are dangerous things that can threaten the nation). Presidents take a more direct route toward gathering information, through the hierarchy of the executive branch. Information is reported up the hierarchy by their appointed officials. Presidents also frequently employ advisors, special committees and "blue ribbon panels" to gather information and present it to them. Because they run the bureaucracy directly and have their own officials controlling

it at various levels, presidents are likely to have fewer problems with information asymmetry than Congress does. The president can call a political appointee into his office and instantly obtain a report, although he is not always guaranteed of a truthful or useful one. Even when it is moving at its fastest, Congress cannot obtain the same kind of access to a political appointee and has even less assurance of the truthfulness of his reporting. Presidents essentially conduct police patrol monitoring, actively checking on the agents. But the costs of this monitoring are significantly less for the president because in essence, he is patrolling the police—his selected people who run the bureaucracy. The costs of such monitoring are primarily internal, not external.

Presidents can also use structure to improve their access to information. Presidents have the ability to define the chain of command within military institutions. They can direct that certain officers, agencies or departments report directly to them, bypassing other layers of the bureaucracy. By doing so, they can improve the quality and quantity of information that reaches them. They can also in essence create *virtual agents* that outwardly do not appear to be agents in the traditional sense, but for all intents and purposes achieve the same thing. A virtual agent is one that exists within an agent and is essentially its own individual agent by nature of the rules that govern it. It has been isolated and separated from the pre-existing agent and has a relationship with the principal that is separate from the pre-existing agent. Presidents cannot easily legislate structure, but they can *implement* structure. And they can *choose* structure. They do this constantly.

Conclusion

Congress does not attempt to constantly thwart presidential implementation of policies and laws on a case by case basis. What Congress does do is increase regulation of the bureaucracy gradually, over a long period of time, in order to slow it down to its own pace to improve monitoring. The existence of multiple layers of authority in an

organization—the need for many people to sign off on a decision as opposed to only a few—is a congressional means of checking presidential power. Thus, what is often referred to as "red tape" is best understood as the inevitable result of Congress attempting to assert its authority over the implementation of policy by regulating it incrementally. It seeks to assure that it has time and knowledge to monitor the defense bureaucracy.

The problems Congress has with controlling and obtaining information from the bureaucracy are *not* simply the result of Congress being an organization composed of multiple individuals ("a diffuse principal"). Admittedly, the nature of Congress is certainly an important factor in determining how it operates and gathers information. As a legislative body, it is at a relative disadvantage to other legislative bodies in other countries. Parliamentary governments ("a united principal") are very common throughout the world and although they are composed of multiple individuals, they are theoretically better equipped than the U.S. Congress to monitor agency performance. But there is a much more important factor affecting how Congress gathers information and controls the defense bureaucracy.

The problems Congress has with controlling and obtaining information from the bureaucracy are due primarily to the presence of a *second* principal. As one author noted: "If there is only one institution responsible for controlling and monitoring the military, agreement among civilian leaders is more likely, and it is easier to set up and monitor military institutions."[48] The obvious conclusion is that if there are two institutions with responsibility for controlling and monitoring the military, there will be less agreement among civilian leaders, and it will be *more* difficult to establish and monitor military institutions. This will be true even if those separate institutions are in relative agreement on goals and means. In addition to having less agreement and possibly differing goals, the

[48] Avant, *Political Institutions and Military Change*, p. 10.

two principals will work to make controlling and monitoring the agent difficult for their counterparts.

But the issue is not merely the case of the agent having more leeway because there are two principals and they fight. Rather, Congress is at a fundamental disadvantage compared to the president when it comes to controlling and monitoring national security bureaucracies. The Presidency has a number of tools that the institution has developed and preserved over time that give it an advantage at controlling and monitoring the defense bureaucracy.[49]

The national security bureaucracy was substantially reorganized after the Second World War. Starting in 1947, various acts were passed which created new institutions (such as the CIA and Air Force), redefined existing institutions (such as the War Department), and clarified lines of authority (for instance, placing the Secretary of Defense in the chain of command and removing the service secretaries from the chain of command). Although these changes in structure required legislative action, they were frequently initiated by the president and benefited him by increasing his authority.

Presidents have also dramatically changed the chain of command secretly, or with little interference from Congress, in order to improve their ability to direct military forces in time of war.[50] What is now apparent is that he has changed the chain of command for bureaucratic reasons as well—to improve his ability to direct the agent without interference. There is little doubt that the president possesses the ability to favor certain institutions over

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[49] This divided principal problem will be discussed in future chapters. One consequence of the divided principal is that it gives the agent a greater amount of freedom to resist control. But others have noted that the situation also offers some practical protections against possible mistakes by the principal. In a parliamentary system, decisions are made faster and carried out faster, thereby making it possible to cause greater damage if a decision is the wrong one. This too will be addressed in future chapters, in particular because of my argument that the president as principal strives to act quickly, thus possibly increasing the damage that can be done by wrong decisions.

[50] Walter Pincus and George Lardner, Jr., "Eisenhower Issued Limited Nuclear Authority Absent Presidential Order," *The Washington Post*, September 2, 1998, p. A18. Sometimes this has manifested itself in rather bizarre ways, such as Lyndon Johnson personally selecting bombing targets in Vietnam.

others and thereby alter their operating characteristics. He can also create organizations with new lines of authority, a subject that will be discussed in much more detail in the following chapters.

Chapter 3
Institutional Choice and the Presidency

The tools like presidential directives, executive orders, and agenda control that the president uses to exert power are not ends in themselves, only intermediate tools in the political process. They require other tools to actually do what the president wants. Power is exercised over, and through, institutions—the vast government bureaucracy. Employing the right institution for a task is an important decision, for the wrong institution can lead to failure to achieve the president's goals, the right institution can lead to success.

As various experts on bureaucracy have noted, "organization matters," and certainly the popular media's obsession with bureaucratic "waste, fraud and abuse" reflects an assumption that inefficient bureaucracies can and should be better.[1] Politicians recognize this inherently. They generally have some idea of the capabilities and problems with the bureaucracies they oversee and base their judgments upon these assessments. When they want to do something, like assign a new task to the bureaucracy, they evaluate many factors of bureaucratic organization and performance before acting. They evaluate these factors within a larger political environment.

Elected officials are not powerless when giving tasks to their bureaucratic agents to carry out. Which agent accomplishes a mission is not a preordained decision. The principal can choose which agent to use and direct how that agent will accomplish the mission. Their ability to do this is restricted by many factors, but ultimately it is elected officials, not bureaucracies, that assign tasks to bureaucracies. And it is elected officials that can change the way that bureaucracies operate in order to increase the likelihood that the bureaucracy will accomplish their goals. Presidents select bureaucracies and alter them based upon their structure, which includes three factors: the number of missions that the

[1] See James Q. Wilson, *Bureaucracy* (New York: Basic Books, 1989).

bureaucracy undertakes, its internal operating rules, and the communications ties it has to the other principal.

Principals and Agents

Principal agent theory postulates two primary types of actors: elected officials and those who work for elected officials in government agencies. The elected officials are the principals and the government agencies are their agents.

At its most basic level, the entire government can be considered an agent for the citizenry, which also has other agents at its disposal.[2] But within the political field, the model can also be viewed as a succession of principal agent relationships where agents can themselves also become principals for other agents. The first principal is the American public, and the elected officials in different government branches are their agents.[3] These agents serve as principals for other agents, such as appointed officials, who in turn serve as principals over civil servants, who serve as their agents. In addition, government bureaucracies also hire contractors to supply or produce equipment, services, and even advice. These private contractors are agents, and they too can subcontract, thus becoming principals. For the sake of clarity, at each step of the process the level of measurement is usually an organization, not an individual.

This multi-layered relationship demonstrates the richness of the theory for those willing to exploit it. The theorist can add or subtract detail by deciding how many levels of

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[2] In this view, economists have treated the government as a rival agent to the private sector. They are not concerned with the political model of principal agent relationships (e.g. the relationship of Congress to the bureaucracy), but merely with government as an agent which either competes with the private sector, or steps in to compensate for market failure. John W. Pratt and Richard J. Zeckhauser, "Principals and Agents: An Overview," in John W. Pratt and Richard J. Zeckhauser, eds., *Principals and Agents: The Structure of Business* (Boston: Harvard Business School Press, 1985), pp. 22-23.

[3] David H. Guston, "Theory-building: Principal-agent theory and the structure of science policy," *Science and Public Policy*, Vol. 23, No. 4, August 1996, p. 230. Guston also cites E.E. Schattschneider who recognized that one of the problems of democracy was similar to that of a rich man who needs "to learn how to compel his agents to define his options." E.E. Schattschneider, *The Semi-Sovereign People* (New York: Holt, Rinehart and Winston, 1960), p. 139.

the relationship to include and can still retain the fundamental rules of the relationships. He or she can also evaluate different types of relationships, such as political relationships within governments and economic relationships within markets that service governments.[4] This example also demonstrates that principal agency theory is about delegation of power. It has to be delegated at multiple levels in order for anything to get accomplished. But each delegation of power has its costs, at least in terms of control. Furthermore, not all delegations are equal.

At the same time, this complex, vertically oriented web of delegations also conveys a certain amount of power in its own right, for it allows principals near the top of the hierarchy to select their agents based upon multiple and variable options. They look down upon a large number of implementation paths. They can mix and match their choices to achieve a solution that is most suited to what they want to accomplish, to select an agency that reflects whatever goals, capabilities and other attributes that they desire. Agencies also realize that in some instances they must compete for tasks that might be given to other agencies, and so they may respond in order to attract attention.[5] Unlike market environments, however, government agencies' incentives for competing with other government agencies are not nearly as powerful. Their relationships with each other are different than market organizations.[6]

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[4] This is also another reason why principal agent theory may be so valuable for studying national security policy—the same theory that is applied to how the government procures weapons can also be applied from an economics standpoint within the defense industry itself.

[5] There is some evidence that principals in relationships with scientific institutions are path-dependent and lack some of this freedom of movement. Such limitations may apply for some high technology endeavors as well. However, this research is still preliminary and has also primarily been focused on non-American relationships, where the available options are constrained. The size of the United States government, with multiple actors in many spheres of government activity, gives principals greater freedom than in other governments. See Barend Van der Meulen, "Science Policies as Principal-Agent Games, Institutionalization and Path Dependency in the Relation Between Government and Science," *Research Policy*, Vol. 27, 1998, pp. 397-414.

[6] This is at least in part because of the existence of another principal to which poorly performing agencies can appeal to. The choice of agency is not always based upon efficiency or performance calculations, something which will be discussed in a moment.

In the American system of government there are two main principals: Congress and the president. There are multiple agents, consisting of government organizations that constitute the vast federal bureaucracy.[7] The framers of the Constitution did not envision the development of such a large bureaucracy and therefore the Constitution itself does not address the bureaucracy directly. Most of the procedures and rules for directing the federal bureaucracy have evolved, created as each new part of the bureaucracy itself was created. Congress and the president negotiate what these rules will be and they attempt to mold the agencies to benefit their interests. They seek to affect the structure of the agents—the number of missions that they will address, the way they operate internally (i.e. are they very hierarchical?), and how they communicate with the principals. They do this so that the agents will perform tasks over time in a manner consistent with the principal's wishes.

Structure is always present. An agent is always governed by rules and composed of internal departments and sections. What differs from agent to agent is the type of rules and arrangement of internal departments and their degree. Thus, any agent used by a principal will have its own structure. The relevant question is what kind of structure that is and how those structural attributes affect its performance.

A primary means of implementing structural control is institutional choice—the principal chooses an institution that has the structure that it desires. In addition to *designing* an institution with a structure that suits its needs, a principal also has the option of *selecting* the institution that already possesses the structural attributes that it desires. This does not mean that the principal will be able to find an ideal agent to carry out a task, but the principal at least has a range of options and the flexibility to select from these options.

Selecting an institution or creating an institution still present the principal with the same problem of adverse selection: the principal may find it costly and time-consuming to

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[7] This is the same in the private sector, where "A single principal may have many agents." Kenneth J. Arrow, "The Economics of Agency," in John W. Pratt and Richard J. Zeckhauser, eds., *Principals and Agents*, p. 37.

determine which agent has the capabilities necessary for the task and goals similar to its own. One way to address this problem is to seek out agents that have established performance records. Another way is to create an agent with attributes that have worked in the past. A principal does not need to worry if the agent already possesses the required attributes; it can force those attributes upon the agent. Thus he can select a less than ideal agent and shape it into a more ideal one.

But this argument presupposes that principals actually do have a choice in selecting agents, that the choice is not simply automatically predetermined by the agent's inherent characteristics, such as its specialization. It is to this issue that I now turn.

Institutional Choice

At first glance, the choice of an institution to accomplish a task established by a principal would not appear to be much of a choice at all. The bureaucracy has evolved to produce great specialization and capabilities in certain tasks.[8] Choices therefore appear to be predetermined, based simply upon the capabilities and specialization of an institution. For instance, suppose the executive wants to build a new armored vehicle for the armed forces. The Army has a large number of personnel familiar with the problems of developing armored vehicles. Other military services and government agencies do not. So one would assume that the president will give the task to the Army without much deliberation. Or suppose the president wants to build a ballistic missile. Missiles are aerodynamic vehicles. The Air Force has specialized people and organizations to develop aerodynamic vehicles. So one would automatically assume that the president will give the task to the Air Force.

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[8] This is to be expected. As one sociologist has said of principal agent theory: "All agency can be seen as specialization of some sense." Harrison C. White, "Agency as Control," in John W. Pratt and Richard J. Zeckhauser, eds., *Principals and Agents*, p. 208.

Presumably many initial proposals for these new tasks also originate within a specific institution, thus making the question moot. However, new tasks that a principal becomes aware of can originate in several institutions at once and thus the principal is not simply limited to giving the task to the institution that first proposed it. In addition, many times a new task will come to the principal's attention because its existing "owner" is not giving it the attention that the principal's staff determine that it deserves. Giving the task to a rival agency—or merely the threat of doing so—may be a means of ensuring that it is treated better by the agency that currently possesses it.[9]

Even if we were to accept the view that the selection of an institution to accomplish a task is entirely based upon specialization and capabilities, it quickly becomes obvious that such a choice is not always a simple one. First, although there is a fair amount of specialization within the bureaucracy, there are still large overlaps of capabilities and interests between different organizations with ostensibly different missions. Second, many new tasks may cut across multiple jurisdictions. There may *not* be an obvious institutional choice in the case of new innovative tasks. This is in part the result of bureaucracies searching for new goals to make their existence relevant, something that has been discussed by Downs, James Q. Wilson, and others.[10]

While bureaucratic institutions may be well-defined, their purviews are not. As the scope of human interaction and the complexity of the economy have grown, the bureaucracy has grown as well. The overlapping of missions and interests of various bureaucracies is not all due to nefarious purposes. The popular perception of bureaucrats is that they are constantly attempting to acquire more power and more jurisdiction and to take

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[9] Note that a large number of government decisions include little or no presidential involvement. However, this is where the "president as team leader" factor comes into play. The president does not need to be involved in every decision, so long as it is clear that members of his "team," such as Cabinet secretaries, are acting under his authority.

[10] This idea originated with Downs. See: Anthony Downs, *Inside Bureaucracy* (Boston: Little, Brown, 1967), p. 19.

it from rivals. However, in reality, bureaucratic overlap is often the result of the world failing to order itself in a coherent and understandable way for the sake of governmental control. Institutions have had to adapt to a complex, constantly evolving, and not very accommodating world. Even when bureaucrats do the best they can to evolve with the changing environment, this may not always be sufficient. It is never easy.

These facts are important because they demonstrate that the exercise of government through bureaucracy is *always* a matter of choices. No decision is pre-ordained or obvious to the decision maker. The ability of the principal to make choices as to which institution to use also emphasizes the hierarchical nature of decisions: it is the *principal* which can and does assign tasks to the bureaucracy. The changing environment in which the government operates drives decisions.

There are two other factors that affect a principal's decision making when choosing an institution based primarily upon specialization and capabilities. First, even if the choice seems to be predetermined because of the specialization of a particular institution, not all specialized institutions possess sufficient capabilities necessary to accomplish the task without significant intervention. This can happen particularly if the task is large or new and strains the resources or thinking of the institution. Sometimes institutions that would normally be ideal are broken—filled with inept personnel or ridden by scandal. Finally, any choice of a bureaucracy is inherently a political choice with political consequences.

Although a specialized institution might appear at first glance to be the right choice for the task that the principal wants to give it, there are many internal factors that the principal must consider. Primary among these is the question of the exact nature of the agent's capabilities compared to the task at hand: does the institution have sufficient material resources that might be needed for the task? It may be highly specialized, but too small. Beyond this, there may be other mitigating factors. Even an institution that might otherwise be considered ideal may be inappropriate for certain missions at certain times.

For instance, the organization might be poorly-managed and in need of new leadership and a major overhaul. Sometimes this is not discovered until after the task has already been assigned and the institution has shown itself woefully incapable of accomplishing what it needs to do. Other times the institution's poor performance is well known ahead of time and the principal wishes to avoid it.[11]

The choice of an institution is made more complicated by another factor beyond what an agency can or cannot do at the moment. Any choice of a bureaucracy is inherently a political choice with political consequences for the principal that can often extend beyond the limited subject that is under consideration. Bureaucratic institutions are the instruments that politicians use to achieve their *political* goals. As such, they are inevitably a source of struggle between the different political actors. Furthermore, the results of their actions can ultimately reflect upon the decision maker himself. These are two different but related issues—the politics of the actions and the consequences of the actions. The goal of any politician is to control the bureaucracy, to make it responsive to his or her interests. One of the ways to achieve this is to limit the access to the bureaucracy that his adversaries have by restricting their authority over it and the information they obtain from it. Another goal is to achieve results that will reflect favorably (or at least not reflect unfavorably) on the

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[11] In the early 1990s, the United States was finally able to achieve a policy goal that had been sought by American presidents for years: the on-site verification of Russian compliance with arms control treaties. This goal had been sought by presidents Eisenhower through Reagan, and arms control experts for much of the Cold War considered its achievement to be an impossibility. Nevertheless, by 1992 it became a reality and the U.S. government had to select an institution to conduct it. The institution within the government that had long been responsible for monitoring arms control agreements was the Arms Control and Disarmament Agency (ACDA). ACDA appeared to be the logical choice for the new task. It had monitored arms control agreements in the past and had developed specialized expertise in the area. Yet ACDA was ultimately rejected and the responsibility for on-site monitoring was given to the Department of Defense, where a new institution known as the On Site Inspection Agency (OSIA) was created within the Defense Nuclear Agency. Although it had none of the pedigree or expertise of ACDA, OSIA possessed the material resources required to conduct the mission, primarily the people to actually make the inspections. ACDA had specialized personnel, but not enough specialized personnel for the mission. What was more important—the specialization of the institution or the capabilities? The very nature of the question demonstrates the range of options. See: Amy E. Smithson, *Growth Industry: The U.S. Arms Control Bureaucracy in the Late 1980s*, Ph.D. Dissertation (Washington, DC: George Washington University, 1996).

principal. Certain bureaucratic options may be less than ideal from a political standpoint, forcing the decision-maker to select a different bureaucracy—one that may not have the attributes that he desires, but is easier to control, or one that may not be ideal, but is more likely to reflect favorably on the principal.[12]

Factors other than a bureaucracy's capabilities may drive a decision maker to assign a task to a specific bureaucracy. These can include things like domestic political reaction. All decisions inherently have political consequences, but some have greater consequences than others.

The Power to Choose and the Power to Create

The fact that principals evaluate a large number of criteria when selecting agents has been acknowledged in fields other than defense, such as science policy. Principals are concerned with both the alignment of goals with the agent, and the available instruments of control over the performers.[13] The problems listed above illustrate why the principal's choice of a bureaucracy to accomplish a task based upon that bureaucracy's specialization and capabilities is not as straightforward as one would initially assume.

It is not always obvious either to a principal or to an outside observer which agent should be responsible for a task even when the capabilities of several agents to conduct that task are extensive. There are two consequences of this. First, previously unasked questions will arise with many new tasks that a principal wants to assign to agents. The principal will be forced at some point to evaluate more than simply the capabilities of an

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[12] An example of this is the war that the United States waged in Laos during the 1960s. While massive amounts of ground troops had been committed to the war in Vietnam, expanding the war to Laos was an option that was risky from a domestic political standpoint. Using the U.S. Army to conduct the Laotian war was thus a less than ideal bureaucratic option, despite the resources and specialization available within the Army. The Marine Corps was similarly not acceptable from a political standpoint. As a result, the Nixon administration chose to conduct a war in Laos using the Central Intelligence Agency, which could keep its activities classified and shielded from public scrutiny, a choice dictated primarily by political considerations.

[13] David H. Guston, "Theory-building: Principal-agent theory and the structure of science policy," p. 230.

institution when making a decision. The principal will be forced to compare institutions using criteria *other* than capabilities or specialization. Second, the principal's options are not automatically limited. There is usually enough overlap in capabilities of institutions to provide a freedom of movement. Thus, although a principal will be forced to decide from time to time, it also has the *freedom* to decide. It has options and these options can give the principal power.

But this only illustrates part of the true picture. In politics, the principal is not simply reduced to *choosing* a series of predetermined options based upon its preferences and the capabilities of pre-existing institutions. It is not like reviewing a list of consumer options and then making a choice.

The principal not only has multiple agents to choose, but power to *change* the agents it chooses. It has power to reorganize them, to select parts of them, and above all else, to structure the agent to best fulfill the task at hand. Power is not simply the power to choose, but the power to change the rules. The principal is not merely a sophisticated consumer of bureaucratic options. It is a producer as well. Furthermore, the principal's involvement does not simply end at the point that the choice is made. It maintains a degree of control over whatever option it selects and this too enters into its decision on what to do. A principal will seek an agent that it believes has served it well in the past and, if possible, avoid agents that have not served it well. And it will attempt to fine tune them over time.

Controlling the Bureaucracy

The unspoken assumption in any choice of this kind is that the type of organization selected to accomplish a task *does* matter. The agent makes a difference for the success or failure of that mission at least partly independent of the issue of who controls that agent. There are efficient bureaucracies and inefficient ones, responsive and unresponsive ones, those that possess the necessary skills and resources and those that do not. There may be

multiple agents available that are suitable for a task according to a broad range of criteria. Principals are generally (although not always) interested in success and will therefore seek solutions that they feel maximize the possibility of success. Congress and the president may have differing definitions of success. They certainly have differing means of achieving it.[14]

As noted in the previous chapter, because they do not always have to employ the massive and ponderous legislative machinery, presidents can be more nimble and react faster than Congress. They also possess a great deal of power as the implementers of decisions. It is frequently up to the president to select an agent to accomplish a national security goal. Congress can override this choice, but because the president is so central to the operation of the entire security policy making apparatus, he is often the principal that gets to choose first and to establish the agenda.

Only Congress, through the use of a public law, can create a government agency. Therefore, the president's power to choose the most ideal option is limited by his inability to create organizations with ideal characteristics. But the president can propose and strongly influence the creation of government agencies through public law. The president also often has the ability to choose which agency should be used. He can therefore give certain tasks to the institutions that have the attributes that he desires.

But most importantly, the reality is that the president *is able to create institutions on his own*. He can and does create them, either out of whole cloth, or within existing institutions, by altering their internal operating characteristics so that, in effect, he creates *virtual agents* within existing agents.

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[14] Decision makers may also be interested in seeing certain tasks fail and can assign them to institutions that they feel will be ineffective at managing them.

Presidents and Institutions

The previous chapter addressed the differences in the way Congress and the president operate. Congress has a far more difficult time taking credit for national legislation and has an incentive system that does not reward thinking or acting on a national scale. The president, on the other hand, can and does have the incentive to think and act nationally. The president also sits at the center of a team of actors who command the institutions they oversee.

These factors affect how Congress and the president view institutions. Congress looks to institutions to mitigate collective action problems—to spread around responsibility and hide decisions so that it is not held accountable for bad decisions. It also looks to create institutions that will outlast the current congressman's own temporary hold on power, to "lock-in" decisions so that they last, to use structure to enforce its goals. Essentially the current elected majority gives power away before it loses it. What Congress is interested in, according to the principal agent literature, is not necessarily a bureaucracy that achieves quick results, but a bureaucracy that satisfies and responds to its constituents (or at least powerful segments of them over a period of time). These are not always the same thing. In contrast, the president seeks a bureaucracy that is responsive to *his* direction, not necessarily the direction of constituents. He also seeks a bureaucracy that will achieve demonstrable results. This is because he represents a national constituency and assumes a greater burden of responsibility for the welfare and the security of the nation. At the very least, he expects to suffer from a bureaucracy that is perceived as inefficient and benefit from one that is seen as effective. Presidents can take credit for making sure the trains run on time. Congress cannot.

Given that the president seeks results from the bureaucracy, he is motivated to bend it to his will. He attempts to do this along a broad front, involving everything from appointing and firing the heads of the bureaucracy to restructuring institutions. He also

attempts to do this during defining moments in the lives of institutions—such as the assignment of new, large, or radically different tasks to the bureaucracy, particularly when he views these tasks as vitally important to the security of the nation. In the national security field these programs are by definition different. Often they may be technologically challenging—paving new ground and requiring both the best minds and the first claim on resources. They are also considered to be vital to national security because of their potentially high payoff. All of these factors imply that in these cases the president must select agents by different political rules. They are also used as reasons to justify *operating* agents by different rules. Rather than selecting from a pre-existing range of options, the president is encouraged to look for other options which may not be readily apparent.

In some respects this creates a mirror image of what Congress faces when controlling the bureaucracy. Like Congress, the president is also worried about both bureaucratic drift and "coalitional" drift, but in different ways than Congress is worried about these things. The president's bureaucratic drift is most similar to the type of bureaucratic drift that Congress supposedly faces.[15] The president's bureaucratic drift results from the bureaucracy developing its own set of interests and, if necessary, appealing to Congress as a means of achieving those interests in the face of presidential opposition. But the difference is that whereas much of Congress' "bureaucratic drift" is actually the result of the president's incremental actions implementing policy, the president's bureaucratic drift is actually the result of the bureaucracy's changing interests.

Coalitional drift, however, is considerably different in nature for the president. The president does not suffer from collective action problems like Congress does. He does not have the short-term focus on reelection like the average congressman. He also possesses the ability to know his own mind. He has a clarity of purpose that is greater than the multiple minds of Congress and also has the advantage of responsiveness. For him,

[15] Described in chapter 2.

coalitional drift means simply that his successor may reverse his policies, not that his own policies will stray.

Presidents can fight coalitional drift by locking in permanent structures, or at least attempting to make them fait accompli by the time he leaves office. But another way that the president deals with the mortality of his own political power is not by attempting to lock in permanent structures that outlast him, but in speeding up results so that they are more likely to happen during his term of office. He uses temporary structures to achieve this, avoiding coalitional drift by substantially accomplishing missions during his tenure. While Congress is interested in delaying the administrative rule-making process, the president is interested in speeding it up, and even circumventing it.[16] The pressure to do this is all the more intense when the subject is national security, for defending the state is a primary objective for presidents, and national security develops an urgency all its own. Because of the strategic nature of national security decisions (i.e. the fact that they are made in the context of, and in response to outside threats), the president naturally treats them with higher priority than other concerns. He knows that if he fails, there is a potential enemy waiting to exploit that failure. Lives, not simply votes, are in the balance.

Although the president is not simply restricted to a small set of bureaucratic choice options, there are still limits on what he can do. Presidents have a defined range of options when choosing an institution to carry out new tasks. This range of options is anchored by two extremes. On one end is the option of using only what is available to him—the broad diversity of existing bureaucratic institutions—and doing so without changing the way that the institution he selects conducts its business. At that extreme he is largely reduced to the power to choose based upon a complicated calculation of existing capabilities and structure.

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[16] Note that one of the reasons why Congress chooses to delay the rule-making process is because it cannot act quickly even if it wanted to. It therefore builds delays into the system to prevent the president from using this weakness against it. In the national security field, such delays are harder to impose due to the perceived urgency of the mission. Revisions to banking laws can be allowed to take some time. Security policy is more immediate.

On the other end is the option of creating an entirely new bureaucratic institution, with structure and capabilities that he selects. There are weaknesses and drawbacks to each of these options.

But the president still faces the adverse selection problem. How does he determine which is the best agent for the task? In part, he bases this upon previous experience—agents that have served him well in the past in similar situations are good candidates for the new goals. He also possesses excellent informational resources and because the bureaucracy essentially belongs to him, he will have better knowledge of its internal characteristics.

Using an existing institution is in many ways the simplest approach in terms of effort. It does not require additional energy or the expenditure of political capital simply to choose an organization to conduct policy. All it requires is an initial choice and continued monitoring. This is a decision often based upon the existing capabilities of an organization. If it is capable of accomplishing the task, it may be given the task. At the same time, there may be substantial drawbacks to this approach. Existing institutions already have pre-established operating modes and connections to other institutions and other principals. These may not be desirable, and they reduce the ability of the president to control the institutions' actions. It is also rare that any government institution is going to be ideal for a significantly new task. Institutions can evolve on their own, but sometimes they need to be forced to evolve.

Creating an entirely new institution is the other extreme option. This gives the president certain advantages that he may not have through other options. For instance, it allows him to focus the institution on the task that he is concerned with instead of simply adding a task to an institution that already conducts a wide array of other similar tasks (a subject that will be further explored in a moment). It also may give him greater initial political control, since he can appoint directors he has chosen and establish the rules (or

philosophy) under which they operate. He can make the agent loyal to him, at least temporarily. It is therefore a better option in terms of both control and efficiency.

There are drawbacks to this option as well. The Constitution stipulates that the only way a new government agency can be established is through a public law passed by Congress. Pushing legislation through Congress requires substantial effort by the White House and may involve the expenditure of political capital that the president would rather expend elsewhere. It also takes time, something that is in short supply when the adversary is hammering at the gate. Furthermore, there is always the danger that the institution that results from negotiation will be so compromised that it is not the organization that the president sought in the first place. If indeed the American political scene is defined by a constant struggle between Congress and the president for control, then any new government institution will automatically become a part of this struggle.

There remain a wide array of other options between these two extremes, however. These include options such as reorganizing existing institutions to make them more focused on the new task that the president is allocating them. They also include carving out a "mini-institution" within the larger one in order to isolate it and clarify lines of authority and communication, as well as mission. Particularly within the national security field, the president maintains a broad amount of discretion enabling him to create entirely new institutions without statutory approval of the Congress. As long as these institutions draw their money from other sources, then they do not require an act of legislation and can often be created through the use of a presidential directive or even a directive from the Secretary of Defense.

Congress' involvement in the use of these options depends to a great deal upon the type of option chosen, but it is clear that in many instances the president maintains broad latitude to change the operating rules of the institutions he selects. The chief executive is expected to manage the internal affairs of the bureaucracy that he oversees. Congress'

approval is not required for every new management flow-chart or accounting procedure that is imposed upon an institution even if they do substantially change the way that the institution operates. And the president can implement many internal changes without even notifying Congress. Congress does, however, maintain the power of the purse, and can use this power selectively to oppose changes that it does not like. But it can do this only if it is aware of them.

Multiple Principals

Political agents exist only because principals have created them. By definition, it is impossible for an agent to exist without ties to a principal.[17] But the American system of government is a system run by two principals. Most agents will be controlled by both principals to different extents. Because of these connections and because agents are the means by which a principal's goals are achieved, a principal will be concerned with an agent's connection to the other principal. Thus, the principal will also consider these connections when selecting an agent. The principal will also be concerned with these ties when creating an agent. A principal may wish to limit an agent's access to another principal during its creation and, consequently, the other principal will be concerned with maintaining its access to that agent. In other words, the principal makes decisions concerning its agents that are not simply based upon their responsiveness, *but upon their ties to other principals.*

There are two connections that principals are worried about. The first is control. The second is information. Control is the mechanism by which the agency is commanded to perform certain actions. Information is the means by which the principal is assured that

[17] This is not completely analogous to the private sector, however, since there agents can create themselves and go in search of new principals to serve. A large part of entrepreneurship consists of developing a market that did not exist before. Within the federal government, agents are essentially confined to the principals they can serve.

those actions have been carried out. The most ideal situation for a principal would appear to be when both control and information are extensive. But it can also be when the agent is simply hard-wired to do what the principal wants without the principal having to monitor the agent. In this case, the principal does not necessarily need good information as long as it is assured that the agent will do what it wants. This is why limiting the agents' access to the other principal—and hence its ability to stray from the first principal's goals—can be vital to success.

But one principal may not be able to limit the other principal's control of an agent. For instance, the principal may inherit an agent upon assuming office and the operating rules (Constitutional requirements or federal statutes) defining the principal agent relationships may already be established. Further, these relationships are visible and readily apparent to both of the principals, and any attempt to change them is also apparent. Therefore, it is often difficult for a principal to attempt to change its mechanisms of control without some degree of acquiescence by the other principal.

But in order for control to be exercised effectively, the principal must have information from the agent. If it does not know how the agent is performing, then it does not know how to alter its control. For this reason, information on agency performance and how it is communicated to the different principals can be every bit as important as control of that agency.

An Exploration of Structure

The principal agent literature has identified two primary types of structural control of bureaucracies. The first is the number of issues that the institution will address. The second is the operating rules under which the agency works. Structural control is exerted both through the creation of an agency, and through the modification of existing agencies.

To these two structural attributes, I add a third aspect of structure—how and to whom the bureaucracy communicates.

The most fundamental choice of institutional design is the number of issues that the institution will address. Will it be single-mission or multi-mission?[18] Within the McNollgast school, this is an important question because it determines the clientele of a regulatory agency. It will ensure that agencies align themselves with certain industries and therefore mitigate both bureaucratic drift and coalitional/legislative drift. Congress does not have to worry directly about controlling the agency years later because the clientele that the agency serves will ensure that happens by establishing a "feedback loop." The number of clients the agency serves is therefore an important variable in this equation. The reason is simple: those interest groups which must "share" their agency with a variety of other interest groups will be able to exert less control on the outcomes that the agency produces, whereas an interest group that has (by design) an entire agency to itself will be able to exert far more control over it.[19] The principal can thus determine the amount of focus (and effect) that the feedback loop will have. It can dilute or enhance the power that constituencies will have in the relationship. The decision concerning the number of issues the institution will address is usually made during the creation of the institution. Most discussions of this form of structural control have focused upon regulatory agencies. But it is also true for other types of non-regulatory institutions. For instance, the National Institutes of Health has a structure that enhances domestic political support. It has separate

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[18] "At one extreme is the situation where a single agency regulates a number of separate industries with conflicting interests. At the other extreme is the situation where a single agency regulates a single industry or even, as in banking, a particular subgroup within an industry. My argument is that the nature of the outcomes generated by these two regulatory agencies will be quite different as a result of important differences in the kinds of political pressure that various groups are able to bring to bear on the bureaucrats within each agency." Jonathan R. Macey, "Organizational Design and Political Control of Administrative Agencies," *Journal of Law, Economics, and Organization*, Vol. 8, No. 1, Spring 1992, p. 93.

[19] Macey uses the example of the Occupational Safety and Health Administration and the Federal Reserve Board as examples of agencies which are designed to regulate a multitude of constituencies, whereas the Comptroller of the Currency and the Securities and Exchange Commission serve only a single interest group. See Macey, "Organizational Design and Political Control of Administrative Agencies," p. 99.

institutes for different diseases and types of medicine. Political interests and "disease lobbies" rally around these institutes and affect how the principal treats them.[20]

In national security issues, the number of missions that an agent conducts is also an important aspect of structure. But it is important for entirely different reasons. It is important not because of the need to establish *external influences* on the agent (i.e. satisfying constituencies), but because it determines the *internal focus* of the agent. The number of tasks or missions that an agent conducts determines its responsiveness to any single task. The more tasks that it has to conduct, the less time that key officials in that agent can devote to any single task. In addition, the more tasks that an agent conducts, the harder it will be for a principal to monitor that task, as information becomes diluted and as officials within the agent have less time to devote to reporting on the progress of the mission.

The second aspect of structural control that principal agency has identified is the internal rules governing agents. As noted previously, one thing Congress has done to exert structural control is to slow down the rule-making process for agencies, thereby ensuring that Congress has the ability to voice its opinion before new rules go into effect. Congress uses other means of controlling institutions as well, such as limiting or expanding the number of political appointees to an agency, or restricting their authority. For instance, Congress has attempted to place limits on how much funding can be shifted from one purpose to another within agency budgets, requiring committee approval before funds can be reallocated. This is structural control of a limit-setting type.

Presidents also want to change the second aspect of structure, the operating rules of agents. They do this in different ways. Presidents seek or design institutions that implement policies and regularize them before Congress can intervene. They want fast

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[20] S.P. Strickland, *Politics, Science and Dread Disease: A Short History of United States Medical Research Policy* (Cambridge, MA: Harvard University Press, 1972). See also Daniel S. Greenberg, "Disease Lobbies," *The Washington Post*, October 27, 1998, p. A23.

institutions that are always one step ahead of Congress, not slow ones operating at the same pace as cumbersome legislative machinery. They also seek or create directors who have freedom of movement within their agencies—i.e. who do not already have strict rules governing their actions. This too is structural control.

The third, and neglected, aspect of structural control of agents is how and to whom an agent communicates. All principal agent relationships involve information asymmetry. The agent always possesses more information on its performance than the principal does. This is inevitable. But so far, principal agency has only sought to identify information asymmetry as a *problem*, not label it as a *structural attribute*. To date, the literature on principal agency has assumed that information asymmetry is largely caused by the agent and has not questioned whether it can actually be deliberately caused by a principal. The reason is that principal agency has thus far largely focused upon a single principal and therefore only a single path of information from agent to principal. But when more than one principal is involved, then the agent sends information to more than one principal. This raises the question of whether both principals receive the same amount and quality of information. It also raises the question of whether a principal can control the amount of information that an agent supplies to another principal.

There is ample evidence that the president, as principal, constantly seeks to control the amount of information that his agents supply to Congress. He does this because it enhances his control over the agent and increases the likelihood that he will be successful at achieving his goals. This is a structural control because, once in place it affects the relationships between the actors regardless of the tasks being undertaken by the agent.

Unequal Information Asymmetry

The ability of the president to limit the information that the Congress gets from the agent can be greater than his ability to limit Congress' control of the agent. The reason is that information asymmetry exists as a natural consequence of any principal agent relationship. One of the toughest problems for a principal is determining how little it knows of what it needs to know. This built-in ignorance means that changes in the *degree* of information asymmetry between principal and agent are not readily apparent to the principal. In other words, Congress may suspect that it is getting less information from an agent than the president is getting, but it will not know the depths of its ignorance.[21] Furthermore, when a new agent is created, the principals have no historical baseline with which to judge the quality or quantity of information they are receiving from that agent.

This is what is best described as unequal asymmetric information: the two principals receive different amounts and qualities of information from an agent. This is not simply a phenomenon of delegation in a multi-principal system, it is also a part of the strategy by which principals operate in the larger political sphere.[22] Principals recognize that, by selecting or creating an agent that does not provide good information to the other principal, they thereby enhance their own control over the agent. They also realize that the other principal knows this as well. This explains why Congress, while altering the structure of the defense bureaucracy over the years, still sought to preserve communications channels with the bureaucracy. Congress knew that the president would

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[21] The difficulty of determining the quality of information from the agent should be apparent. The difficulty of determining the quantity of information is also an issue, particularly when the activities of the agent change. For instance, if the agent begins a new task that is different from what it has done in the past, there is no way for the principal to know if it is receiving more or less information on that task because the new task may not be easily comparable to previous tasks. An example from the weapons procurement field might be the Strategic Defense Initiative during the 1980s. Because so many of the technologies employed in this effort were new—X-ray lasers, kinetic kill vehicles, particle beams—the principal was never sure if the agencies conducting this research were providing as much information on their activities as they had done for previous weapons systems.

[22] Information asymmetry is a vertical effect—asymmetry between agent and principal. The unequal aspect refers to the amount of information that the two principals are getting from the same agent.

seek to reduce the amount of information that was transmitted to the legislature. This also explains why presidents have created secret bureaucracies—to keep not only the Soviet Union, but also the Congress in the dark.[23]

It is virtually impossible for Congress to create an agent without connections to the president. All government agencies of reasonable size have at least one presidential appointee. The bureaucracy "belongs" to the executive branch. The only bureaucracies that answer solely to Congress are those which were developed to advise the Congress, such as the General Accounting Office or the Congressional Budget Office. They are not operational agents that implement policy. When Congress creates an agency, it gives some part of control of that agency to an executive official and thus to the chief executive himself. This is inevitable. It is a consequence not merely of delegation, but of the non-unified American system of government, which requires an executive to exert authority and places that executive in a competing branch of government.

The reverse is not true, however. The president has created bureaucratic organizations that do not report directly to Congress. They answer only very indirectly to Congress. Through the careful limitation of information that these agents provide on their activities, Congress has very little control over them. After all, Congress cannot control what it is not aware of. The president can do this because of his central position as chief executive commanding the bureaucracy and his possession of the implementation authority. He can also do it because of the specialized intermediate tools that the institution of the presidency has acquired over the years, such as stealth power.

One of the ways that Congress tries to compensate for the fact that the bureaucracy is "owned" by the president is to create more and more levels in the hierarchy. Sometimes this is a deliberate effort to increase knowledge of a bureaucracy's actions, as in the case

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[23] See, for instance, Daniel Patrick Moynihan, *Secrecy* (New Haven, CN: Yale University Press, 1998), particularly chapter eight.

where Congress establishes reporting requirements, thereby requiring the creation of congressional liaisons at multiple levels. But frequently it is merely the result of increasing rules and requirements for the agency to attempt to get it to better perform its mission. The more complicated the regulations, the more people and levels have to be created within a bureaucracy to follow them. This is yet another area where the two principals have fundamentally different goals regarding agents: Congress adds levels to the bureaucracy; the president generally removes them. He wants an organization that is as easy for him to command as possible, and unlikely to leak information to the Congress.

The president views the other principal—Congress—as not only a rival, but as a potential obstacle to the effectiveness of his agents. Limiting the information available to Congress is how the president achieves results—by preventing Congress from exercising effective control over certain government agents. Principal agent relationships are also a two-way street. A variety of interactions—money, information, personnel, etc.—occur between them.[24] As such, an agent can benefit from its close relationship with a principal and seek to preserve and enhance that relationship. Presidents are therefore concerned with cultivating those agents which are most useful to them, and the relationships in which their own control and information are maximized at the expense of Congress are the ones which they will hold on to most tightly.

There are admittedly limits to the president's use of information control. He can always control the information an agent transmits to Congress to some extent. After all, he appoints the heads of bureaucracies and can direct them not to reveal certain aspects of bureaucratic performance unless specifically asked. He also attempts to channel information flow through certain chokepoints. And he can appoint skilled operators who master the art of providing information to Congress in such a way that it reflects favorably

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[24] Terry M. Moe, "An Assessment of the Positive Theory of Congressional Dominance," *Legislative Studies Quarterly*, 12, 1987, pages 475-520.

on agency performance. But the most extreme aspects of information control—the classification of actions or entire agencies—are available in relatively rarer instances. Extreme classification is only available for intelligence operations and select national security subjects (such as high-technology weaponry). It cannot be applied to activities that require substantial budgetary appropriations which cannot be hidden in other budgets.

Furthermore, there are also practical limits to information control as well. The more operations that are brought under the secrecy umbrella, the weaker that umbrella becomes—leaks occur as people lose respect for the secrecy rules. And there is the danger that if Congress learns of a secret operation of which it disapproves, the result could be highly politically damaging. While classifying an activity might seem to be an option without apparent costs, in reality it may have extreme costs if it goes wrong.

Choice and Structure Applied

So far I have demonstrated that presidents can choose agents to accomplish missions and I have discussed the structural attributes that they desire in their agents. They desire these attributes because they increase the control that the president can exert over an agent and by extension, they increase the likelihood that the agent will be successful at accomplishing the goal that the president gives it. The more desirable structural attributes that a president can acquire, and the more he can maximize each of these individual attributes, the more likely he is to be successful. There is a direct relationship between structural control and success.

Presidents therefore seek single-mission agents because these are more likely to be successful at achieving their goals than multi-mission agents. They seek streamlined, hierarchical agents because they are also more likely to be successful at achieving their goals than less hierarchical agents. If they can combine both single-mission and hierarchical attributes, then they dramatically increase their likelihood of success.

In many ways, information control is the most powerful structural attribute of an agent for a president. It represents a sort of trump card over the other attributes—if the president can control the information from an agent that reaches Congress, then he can be relatively confident that Congress will not attempt to modify other structural attributes. If he can exert complete control over this attribute—for instance, by keeping the very existence of the agent secret from all or at least the vast majority of the Congress—then Congress will not even be aware of the other structural attributes because it will not be aware of the agent itself. Thus, information control can multiply the effects of the other structural attributes at contributing to the success of the mission.

In the next chapters, I will discuss how a principal—specifically the president—has used the tools available to him to select, create, and modify agencies to accomplish his goals. I will also discuss how he has limited agency reporting to Congress as a means of both maximizing his control and improving the successfulness of the agency at achieving his goals.

Chapter 4
The Origins of Cold War Mission Control

As the previous chapter demonstrated, the material capabilities of an agent are often less important than other factors in selecting an agent to accomplish a mission. Certainly they matter, but they are also malleable and the president's priorities may mean that other factors rank higher. This is certainly true for weapons acquisition, particularly when the weapon is new and unique, calling for unconventional management and giving the president greater leeway in how to conduct the mission. The reason for this dates to World War II and the precedent established there.

The weapons program that established the greatest precedent for Cold War development of advanced weapons was the atomic bomb. During World War II there were many highly classified weapons programs developed by the U.S. military. These included radar, sonar, jet engines and long-range strategic bombers. Although they all had high security barriers erected around them, none was developed in the same manner as the atomic bomb. First, all of these programs were developed by the services themselves—radar was developed jointly by the Navy and Army, sonar was developed by the Navy, and jet engines and strategic bombers were developed by the Army Air Forces. Each of the services had its own labs and cultivated close ties with universities.[1] And all were multi-mission organizations. In all of these cases, the research and development organization within the respective service was doing many things. The Office of Naval Research, for instance, was working on sonar, radar, advanced torpedoes, anti-submarine

[1] See, for instance, Simon Ramo, *The Business of Science* (New York: Hill and Wang, 1988), p. 29; Bruce L.R. Smith, *American Science Policy Since World War II* (Washington, DC: Brookings, 1990), p. 34.

weapons, proximity fuses and a dozen other major research programs and hundreds of smaller ones.[2]

In contrast, the atomic bomb was developed by a separate War Department organization that was financially, administratively, and bureaucratically isolated from the military services and which was building only one thing—the bomb. The Manhattan Engineering District, headed by General Leslie Groves, reported through a special chain of command outside of the traditional chain of command for other weapons acquisitions programs.[3] This project later served as both the conscious and unconscious administrative model for many major weapons development programs. The atomic bomb also was a pathfinder in terms of secrecy. It led to the need for security background checks of individuals, something that was not done for the first several decades of the growth of the modern secrecy system.[4] The atomic bomb's influence was therefore felt beyond mere procurement issues.

Political and military leaders learn lessons from success and failure in warfare, (although often what they "learn" are the lessons that they want to learn and ignore the lessons that make them uncomfortable or require radical new thinking). What the Manhattan Engineering District taught military and political leaders was that impressive scientific and technological feats could be accomplished with the application of large amounts of money and the proper structure to manage them. *Both* components were necessary. Simply pouring money on a project was not considered by the leaders to be a guarantee of its success. The key was to complete the project in the fastest time possible, not simply to achieve success eventually. In order to do this, project leaders decided that the program had to be managed differently, not simply heavily funded.

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[2] Harvey M. Sapolsky, *Science and the Navy* (Princeton, NJ: Princeton University Press, 1990).
[3] The Manhattan project's operating rules were very unusual. At one point, General Groves received a personal check for $12 million in order to buy the uranium to make the bomb.
[4] Daniel Patrick Moynihan, *Secrecy* (New Haven, CN: Yale University Press, 1998), p. 160.

The atomic bomb program was nothing if not a lesson in structure. The president created a single-mission bureaucracy—the Manhattan Engineering District—with a clear and streamlined hierarchy that bypassed most of the military, and with extremely controlled information flow to the other principal (Congress knew nothing of the bomb). He controlled structure and the agent built the bomb in time to drop it on the Japanese and end the war.

The president used a national security justification to create the largest and most secret bureaucracy in the history of the union—and he did it *without* the acquiescence of Congress. This was ideally appealing for presidents. But it was a limited option. Roosevelt had been able to hide the $2 billion cost of the atomic bomb in a massive and expanding military budget amid an ongoing conflict. After World War II, the defense budget was rapidly cut back and Congress began paying more attention to how the money was spent. It was not as easy for a president to hide programs or provide the large amounts of money that might be needed to fuel them. But it was still possible and it still happened. After World War II, successive presidents chose to emulate the atomic bomb experience whenever they encountered a weapons program that they felt was of supreme importance to the country. Several of the cases explored in following chapters were consciously or subconsciously modeled on the atomic bomb experience.

Presidential Control Applied

The following chapters will develop several case studies addressing attempts at the exercise of presidential control over the introduction of new national security missions into bureaucratic organizations during the period 1946-1961. They will demonstrate the use of structure to achieve control. These case studies fall into three general subject areas: ballistic missiles, aerial reconnaissance, and satellite reconnaissance. All three issues involved ideas and concepts that were relatively new at the time and that were all linked in

multiple ways. The presidential decisions made in each case were different and resulted in different outcomes.

Each of these broad case areas is divided into more specific cases. Thus, ballistic missiles is divided into three cases: the development of the ICBM before and after 1954, and the development of the IRBM (chapter 5). Aerial reconnaissance consists of one case (chapter 6). And satellite reconnaissance consists of two cases (chapter 7). What will become apparent is that there are clear similarities across these cases. In many cases, the president chose to emulate previous successful efforts. In other cases, there was only limited intervention by the president. In a number of the cases, the president's active role as principal is apparent through memos and directives and the recollections of presidential aides.

For many years, President Eisenhower was popularly viewed as aloof and detached from day to day government operations. However, as more and more of Eisenhower's presidential documents have become available over the years, this popular image has changed. White House records depict a president who was intimately involved in most of the major decisions during his presidency. In particular, Eisenhower was deeply involved in defense and intelligence issues during his tenure. Several of the programs discussed in the following chapters were closely monitored and directed by Eisenhower and they were shaped by his interests and beliefs.

What the cases demonstrate is that the most successful programs exhibited the highest amount of structuring by the president. When he controlled the number of missions conducted by the organization, the internal rules (hierarchy) by which it operated, and, most importantly, the information that it provided to Congress, he was most successful. If he failed to control these factors, or if he negated them, he was least successful.

Within each of these issue areas, it is possible to make several comparisons—both with concurrent programs and with successive stages of the same program. For instance, in the case of the ICBM, it is possible to compare Air Force efforts to develop an ICBM from 1946 to 1954 with efforts from 1954 to 1960. As previous scholars have noted, these were two highly distinct development efforts that were differentiated by the intervention of top policy makers, by how they were conducted, and by what institutions conducted them.[5] The early pursuit of the task lacked intervention by a principal, whereas the later phase of the program is differentiated by extensive presidential involvement. What I will show is that, as the president changed the structure of the program—creating a single-mission bureaucracy to manage the ICBM, altering its internal hierarchy to make it more responsive, and limiting the information that it provided to Congress—he increased its likelihood of achieving his goals. In contrast, before structure was deliberately controlled, the program was aimless. Its goals and timeline continually shifted. The lack of structuring in the pre-1954 ICBM program led to its failure. The presence of structuring in the post-1954 ICBM program led to it success.

The IRBM program, in contrast, was more complicated. Although some aspects of the Army and Air Force missile developments were structured, information was not controlled very well. As a result, as the programs became contentious, information reached other parties, such as Congress, and created problems for the president and his aides. Although both missiles still achieved their technical goals, the president was less satisfied with the IRBM effort than he was with the ICBM.

In the case of aerial reconnaissance, the U-2 reconnaissance program of 1954-1956 can be compared to the competing Air Force reconnaissance aircraft effort at the same time. What this comparison demonstrates is that the unstructured Air Force aircraft procurement

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[5] Edmund Beard, *Developing the ICBM: A Study in Bureaucratic Politics* (New York: Columbia University Press, 1976).

process was slow and inefficient. In comparison, the highly-structured U-2 program was fast and highly effective.

In the case of satellite reconnaissance, the highly structured CORONA reconnaissance satellite (begun in 1958) can be compared to the competing unstructured SAMOS reconnaissance satellite of the same time. CORONA was successful, SAMOS was a miserable failure.

What I will show in each of these cases was that structure was actively controlled by the president and that when it was maximized, it affected the success of the program, leading to rigid goals that followed closely. If the program was highly structured—particularly if it was made covert and isolated from Congress, then it achieved high success. If, on the other hand, the president did not attempt to control the program's structure, or if he negated some of the beneficial structural aspects that the program already possessed, then he was less likely to achieve his goals.

What these cases will demonstrate is that principal agency is an effective means of explaining how the weapons procurement process worked, and that presidents use structure to increase their chances of achieving results. They will prove that principal agency can be applied to both the Presidency and national security issues.

Context

There have been several extensive and well-regarded political studies of the ICBM and IRBM programs as examples of acquisition involving innovative weapons. But all are essentially studies in bureaucratic politics with all that this implies. They are long on description, but short on the application of any theoretical framework.[6] They are also

[6] In addition to the above cited work of Beard on the ICBM, see Harvey M. Sapolsky, *The Polaris System Development: Bureaucratic and Program Success in Government* (Cambridge, MA: Harvard University Press, 1972); and Michael H. Armacost, *The Politics of Weapons Innovation: The Thor-Jupiter Controversy* (New York: Columbia University Press, 1969). In addition, Robert Coulam has compared some of the experience with the ICBM program to the later TFX fighter plane. See Robert Coulam,

individual studies where the author's intent was more to discuss how the program fit the theory than how the theory was applicable to multiple programs in multiple instances and what the theory said about how the government operates. As noted in the introduction, one of the problems with bureaucratic politics theory is that it does not allow one to form specific, testable hypotheses. It merely predicts that the process will be messy, but provides little insight into how a player may operate in order to be successful.

In addition, there are two further weaknesses to the existing literature on these specific subjects. First, most of these studies were conducted during the middle of the Cold War, where full data on the decisions was still heavily restricted. As any scholar of the Cold War can attest, the amount of data that has been released on these subjects since the end of the Cold War is immense, thereby allowing a reexamination of many of the initial conclusions. Second, and far more important in my view, is the fact that all of these subjects were studied in isolation from each other. Although they were often discussed in terms of bureaucratic politics, their scope was narrowly defined. I believe that broader questions can be asked by comparing what appear to be similar, but not identical, situations. Why, for instance, was Eisenhower pleased with the ICBM program, but less pleased with the IRBM program? Why did the CIA's CORONA satellite succeed, but the Air Force's SAMOS satellite fail?

These efforts also raise larger questions about patterns of bureaucratic organization. What does the use of specially structured development organizations say about issues of presidential control and the relationship between the Presidency and the bureaucracy? The fact that similar approaches have been taken by the president in different areas would indicate that there is an underlying trait at work. What is it? My hypothesis is that the underlying trait is a desire for political control and the use of structure to achieve it.

Illusions of Choice: The F-111 and the Problem of Weapons Acquisition Reform (Princeton, NJ: Princeton University Press, 1977).

There have been no bureaucratic policy studies focused upon the introduction of strategic reconnaissance as a government mission largely because, up until only a few years ago, virtually all information on this subject was highly classified. But it is in this area that I believe this research can shed the most new light, not simply by recounting the historical details of the decisions, but by demonstrating how presidential power works both in the shadows and at the extremes. It is the restrictions of the multiple principal aspect of American government that drive the president to seek areas where he can effectively act as the sole principal—i.e. as a king. But if the president wants to act like a king, what happens when he actually comes close to doing so? It is the intelligence field (and covert action) where his powers to act relatively unencumbered by outside interference are at their greatest. Thus, these cases allow us to see the clearest image of how the president controls his bureaucracy in isolation from outside influence by the Congress.

The national security literature has had little to say about the role of classification as a presidential management tool. Usually, when scholars have addressed the issue of classification, they have done so on the subject of covert action and in the context of avoiding congressional interference. But classification has also been used by presidents as a means of *exerting control over bureaucratic actors*. It has allowed them to not only exclude Congress from the decision-making process, but to exclude other actors within the bureaucracy as well.[7] This has been done ostensibly to expedite progress, but has also been used to eliminate potential sources of opposition to policies. Principals and agents frequently view opponents as obstacles to the "correct" choices and to making progress,

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[7] The National Reconnaissance Program (NRP—the formal name for the satellite intelligence effort which was managed by the National Reconnaissance Office, or NRO) was created in 1960. But it was not until 1967 that the Senate Armed Services Committee was even briefed on the existence of this effort. This was despite the fact that over a hundred rockets had been launched and several billion dollars had been spent during this time. This information is from a discussion with the former historian of the NRO, Gerald Haines. Curiously, there is no record in NRO files of the decision to brief the committee of the NRO's existence. Barbara E. Freimann, Chief, Information Access and Release Center, National Reconnaissance Office, to Dwayne A. Day, September 30, 1998.

thereby justifying using secrecy to exclude opponents. Although the classification power is narrowly defined (i.e. it is available to the president in limited instances), it is also quite powerful and is therefore attractive to presidents looking to accomplish missions quickly and effectively. These shadows deserve more light.

These events all took place within the context of the early Cold War, a fact which cannot be ignored because it shaped the way decisions were made and, in many cases, was the only reason that they were possible. For instance, in many of these cases the president placed a strong emphasis on ex ante control of the bureaucracy because he and his advisors felt that the mission could not be allowed to fail. "Failure" at its most extreme meant nuclear war. Success had to be "hard wired" into the decision because corrective action after the fact (i.e. the ex post controls so common to much principal agency literature) may not have been possible—you cannot correct mistakes after the Apocalypse. Elected officials thus thought that they had to do everything possible to assure success, including bending the Constitution and the normal rules of democracy.

In addition to the requirement for success, there was a strong sense of urgency to many of these missions. Urgency defined the missions, establishing clear goals. In the case of the ICBM, the goal was not simply to develop a missile at the earliest time possible, but to do so within 6 years. For the IRBM, the goal was to develop a missile *before* the ICBM. In the case of strategic reconnaissance, the goal was not simply to produce aerial photographs of the Soviet Union, but to do so within two years. "Efficiency" was defined in very narrow terms. It did not mean the best system for the money, but the best system possible within a given period of time, when money was no object. All of these are Cold War traits which do not necessarily exist today, but which can be used to clarify certain situations. For instance, it is rare that goals are so clearly defined or as urgent as they were during this period, but by focusing on these events it is possible to strip away many of the extenuating circumstances that exist in other, more recent situations and ask about the

relationship between the priority of a goal and how effectively (and efficiently) it is achieved.

Conclusion

The following case studies will be used to answer several questions about the nature of government decision making. First, which model—principal agency or bureaucratic politics—is more likely to explain government decision making? I believe that principal agency is a more effective model for explaining national security decisions. If principal agency is a more effective model, then agency outcomes will vary according to the principal's interests. The outcome will not only be in line with the principal's interests, but the process by which it is achieved will be less of a game of bargaining, compromise, and muddling through to a conclusion, and more of a focused effort toward finding a solution. Certainly, bargaining and compromise still happen—they are a necessary part of all human interactions—but they will not be prevalent.

What these cases will demonstrate is not only that principal agency applies to national security policy, but that structure is important for success and that the president attempts to control structure when he thinks that success is vital. In order to get their way, principals must use structure to mold the agents who implement their goals. Principal agency so far has only addressed structure in terms of the relationship between one principal and a single agent. But structure is important in determining how agents deal with more than one principal. Can structure make it more difficult for one principal to affect outcomes? If so, how does this affect a principal's calculation of the various courses of action? My hypothesis is that structure can be used to control a principal's access to an agent (and hence its ability to affect outcomes).

What these cases will demonstrate is that principal agency can indeed be applied to new areas (such as national security) and new actors (such as the president as principal)

that it has been rarely applied to in the past. It will also demonstrate that the practice of government decision making is affected by two principal centers of gravity—both Congress and the President—and that this has a powerful effect upon how decisions are made. Principals are not, as the model is commonly applied, simply concerned with how the *agent* responds to their direction. They are also concerned with keeping the agent from coming too strongly under the influence of the other principal.

Bureaucratic politics theory is often typified by bureaucracies pursuing their own territorial interests over what are usually defined as the "best interests of the nation." What these cases will demonstrate is that although bureaucracies frequently do attempt to protect their own interests, they often interpret their interests and the "best interests of the nation" in the same light. Principals are conscious of this too and wary of agents' parochial interests. They attempt, whenever possible, to align the interests of the bureaucracy with their own interests. If they perceive bureaucratic interests to be a threat to achieving the mission, then they may attempt to bypass that bureaucracy entirely, selecting an agent which more readily matches their interests.

Finally, what these cases will also demonstrate is that some of the individual observations about bureaucratic politics are correct, even if bureaucratic politics theory is not the best model for explaining the way that government makes decisions—in other words, the symptoms have been properly observed, but the diagnosis is wrong. One of the important lessons is that bureaucracies change over time. They react differently when they are first established compared to how they react after years of existence. They calcify as layers are added. This is something that principals are conscious of. They recognize that employing established bureaucracies for their tasks can present problems, whereas utilizing a newly created bureaucracy can enable them to achieve more control.

What the cases will also show is that there is a principal agency explanation for the tendency of decision making to become sluggish and gravitate toward indecisiveness. The

explanation is not that nobody is in charge and everybody has to compromise—i.e. the bureaucratic politics argument. The explanation is that bureaucracies are a medium through which two principal branches of government attempt to enforce their will. Thus, bureaucracies can be resistant to direction not simply because they have their own interests, but because they can often appeal to a second branch of government if they do not like the mission they are being given. More importantly, they can also be resistant to direction because one principal is actively trying to resist another principal's control of the bureaucracy. Multiple layers of decision making and "red tape" are the inevitable result of this struggle. Roadblocks to quick implementation of policies are often deliberate, or at least the result of deliberate incremental actions intended to delay implementation in general. As noted in earlier chapters, Congress recognizes its sluggishness at directing government actions. As a result, it strives to slow the implementation of decisions by agencies of the executive branch so that it can more easily maintain input and understanding. Congress places generic speed bumps in the path of all programs in order to slow them down to a pace that Congress can monitor. The president wants a bureaucracy that responds faster, so that it moves too quickly for Congress to monitor or control. So he removes the speed bumps when he can, particularly for programs that are most important to him. Despite the struggle, the president can and does prevail on many of these decisions. The next chapters will demonstrate several of these.

Chapter 5
The Ballistic Missile: The ICBM and the IRBM

Between 1946 and 1960, the United States worked to develop a new type of weapon, a ballistic missile capable of launching an atomic warhead thousands of miles to hit a target with relatively high precision.[1] Ultimately, a number of versions of this weapon were produced within a relatively short period of time and proved successful, although rapid advances in technology led to their replacement by better versions only a few years later. Yet even as late as 1953, the successful development of the ballistic missile was not assured. This was due not to any technological hurdles, but to the way that the programs were managed. The development of the two main types of ballistic missile—the Intercontinental Ballistic Missile (ICBM) and its shorter range cousin, the Intermediate Range Ballistic Missile (IRBM)—serve as excellent case studies of how principal agency works in national security policy, particularly the acquisition of weapons systems. They demonstrate that the control and management of a program are important for its success, and that it is elected officials who make the vital formative decisions.

What these cases demonstrate is that presidents control structure in order to control agents. They also demonstrate that structure is important for determining the success or failure of a mission. If a program is highly structured, it is more likely to be successful than one that is not. In the case of the ICBM, structure was used deliberately—the president in effect created an agent within an agent and changed its operating characteristics to achieve his goals. In the case of the IRBM, however, some of the structural attributes that were already in place for the earlier ICBM program were undermined by other decisions that increased the public visibility of the program and hence the amount of

[1] 1960 is used as a cutoff date because that is when the first ballistic missile squadron was declared operational. Ballistic missiles were developed after this time period.

information that it transmitted to the president's rival principal, the Congress. Although the program was technically successful, the costs associated with managing it were higher for the president and he was thus less satisfied with the outcome.

The Principal's Team

Presidents cannot operate on their own. It is beyond their capacity to run any part of the government without assistance. Instead, they serve essentially as the coach of a team of players in the executive branch.[2] The team consists of their political appointees, beginning with the Cabinet officials and working down through the political appointees all the way to the "plum" positions that are often completely unknown to the president and given out to loyal (or generous) party supporters by his senior advisors. The team also consists of the president's closest advisors, many of whom do not require any formal approval by the Congress but who nevertheless occupy what are essentially positions of power due to their proximity to the president.[3] The president relies upon the players of this team for information and implementation—he delegates authority. It is up to these appointed officials and other advisors to bring issues and information to the president and to act on his guidance. This team constitutes the executive branch principal.

However, due to the sheer size of the government and its activities, delegating authority means more than simply giving these people the power to make decisions for the president, it sometimes necessitates having them make decisions without necessarily *informing* the president.[4] They act in his stead. This is the essence of delegation. They do

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[2] Terry M. Moe and Scott A. Wilson, "Presidents and the Politics of Structure," *Law and Contemporary Problems*, Vol. 57, No. 2, Spring 1994.

[3] For instance, the National Security Advisor in the Nixon administration was even more powerful than the Secretary of State on foreign policy matters, despite his lack of Senate confirmation and regardless of the officially defined roles for each. Every administration is made up of hundreds of people who possess power even though Congress has had no say in their selection.

[4] However, all major decisions eventually are approved by the president, who might give his approval with nothing more than a nod, or simply by not objecting when the issue is raised in a meeting.

so with the understanding that one of their fundamental goals is to maintain his power vis a vis the other branches of the federal government. They do this out of loyalty to the president. But they also do it because it is in their own self-interest to preserve and even enhance the authority of the executive branch—if he is powerful, they are powerful, if he has a job, then they have a job. A high degree of trust is necessary for any presidential administration to be successful and presidents have to trust their underlings to not undercut their authority, especially with respect to Congress. But this can also dilute the president's decision making ability. The more he delegates, the more removed he becomes from the actual implementation of policies. If he cares about the outcome a great deal, he will pay close attention to the team responsible for it. The president is aware of his diffusion as principal.

Eventually, all major decisions will have to be taken to the president for his direction and guidance. During the Eisenhower administration, when the ballistic missile was developed, the president showed active involvement in the development of the weapon, choosing and promoting personnel and reviewing progress. But he still had to rely heavily on his team of decision makers to decide what issues were important. The subject of the development of ballistic missiles offers a number of individual lessons both of how presidents use structure to exert control, and how the president's team essentially works.

The Origins of Ballistic Missiles

Like many advanced weapons, the ballistic missile was first developed and used operationally by the Germans during World War II. V-2 rockets were developed at enormous expense and utilized to little significant effect during the war. They were targeted primarily against London and Antwerp, but produced militarily insignificant damage. In terms of scope and expense, the V-2 program was Nazi Germany's equivalent

of the American Manhattan Project. But in terms of effect, the weapon was a disaster—the inaccuracy of the weapon and its lack of a large warhead meant that it could not be used against military targets and thus was reduced to employment as a terror weapon against civilian populations.[5] It was an innovative failure, albeit a brutal one in a brutal war.

Despite its military ineffectiveness during the war, there is no doubt that the V-2 was a significant technological achievement and it ranked at the top of the wanted list for the U.S. military in the scramble to collect as much German military technology information as possible after the war. Over 100 captured V-2 rockets, thousands of documents, and over a hundred German scientists, engineers, and their families were brought to the United States after the war. This technology had also been a top priority for Soviet military officials as well, and they too captured much material and personnel after the war.[6]

While German rocket research had progressed significantly during the Second World War, American military rocket research had remained extremely underdeveloped. It began at the Guggenheim Aeronautical Laboratory at the California Institute of Technology (GALCIT) under Frank Malina, Hsue-shen Tsien, and others in the late 1930s and early 1940s.[7] Malina and Tsien speculated about the possibilities of ballistic missiles at

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[5] While it has frequently been claimed by critics of the V-2 that it killed more people during production (through the use of slave labor) than during actual use, the irony of the matter is that the V-2 may have even been a net plus for the allied cause, for it siphoned tremendous resources from Nazi programs such as bombers and submarines that might have had greater effect against the allies For a discussion of the limited military utility and tremendous drain on German resources of the V-2, see Michael J. Neufeld, *The Rocket and the Reich* (New York: The Free Press, 1995). More recently, Neufeld has argued that the net effect of the weapon may have been to prolong the war by bolstering German spirits. See also Yves Bion, *Planet Dora: A Memoir* (Boulder, CO: Westview Press, 1997).

[6] After Sputnik, one of the commonly made excuses for the U.S. embarrassment in rocketry was that the Soviets had gotten the better German engineers. This was simply not true. In fact, the United States got the better engineers, as well as more equipment and documentation. But German experience was not decisive for either superpower's missile program and in the case of the American ballistic missile program, its ultimate influence was not very substantial. The American ICBM program largely relied upon indigenous capabilities that were developed independent of the German resources at hand. T.A. Heppenheimer, *Countdown* (New York: John Wiley & Sons, Inc., 1997), pp. 30-58; Theodore von Kármán with Lee Edson, *The Wind and Beyond* (Boston: Little, Brown and Company, 1967).

[7] An early GALCIT report on ballistic missiles can be found as document I-12 in Volume I of *Exploring the Unknown*. John M. Logsdon, with Linda J. Lear, Jannelle Warren-Findley, Ray A. Williamson, and

GALCIT, an Army lab renamed the Jet Propulsion Laboratory in 1943.[8] In an early report on the subject, they referred to reports of German rocket development and identified the requirements and performance characteristics of weapons that the United States was capable of developing in the near term. Such a weapon would possess a number of advantages over conventional weapons, primarily speed and invulnerability to defense.[9]

But during the war, the United States military wisely chose not to follow the German path by investing heavily in an immature technology with only limited immediate payoff. Instead, at presidential direction, the military focused research on the development of a much more promising weapon, the atomic bomb. As a result, U.S. rocket research during the war centered upon more immediate and practical, if rather mundane, applications, such as short-range rocket projectiles like the Bazooka and the misnamed Jet Assisted Take Off (JATO) rockets for heavily-laden aircraft.[10]

After the war, the captured German equipment and scientists were sent to White Sands Proving Ground in New Mexico, not far from where the United States had conducted its first nuclear blast and deliberately far from prying eyes and major population centers. There, under Army control, the captured V-2s were demonstrated and gradually the U.S. Army acquired expertise in the development of ballistic missiles. Eventually, the Army moved the entire project to the Redstone Arsenal in Huntsville, Alabama, and continued to conduct its research there. In the mid-1950s it created the Army Ordnance

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Dwayne A. Day, *Exploring the Unknown: Selected Documents in the History of the U.S. Civil Space Program, Volume I: Organizing for Exploration* (Washington, D.C.: NASA SP-4407, 1995), pp. 153-176.

[8] Tsien was later deported from the United States in one of the less wise decisions by the U.S. government during the Cold War. He returned to his native China, where he developed an indigenous Chinese ballistic missile capability. See Iris Chang, *Thread of the Silkworm* (New York: Basic Books, 1995).

[9] Edmund Beard, *Developing the ICBM: A Study in Bureaucratic Politics* (New York: Columbia University Press, 1976). Beard addresses this subject throughout the book, but see in particular chapters four and five. David Spires also repeats this point. See: David Spires, *Beyond Horizons* (Washington, DC: US Government Printing Office, 1997), p. 23.

[10] Heppenheimer, *Countdown* , pp. 40-43.

Missile Command and began development of the Redstone missile with a range of 700 miles. This was the beginning of the Cold War ballistic missile program.

The ICBM

In the immediate post-war period, according to the traditional interpretation of the story, ballistic missiles did not make sense for Air Force use.[11] The technology simply did not exist to utilize them effectively against an adversary. There were not enough nuclear warheads available to be used on so risky a launch platform and the existing warheads were too big and bulky to be carried by an ICBM. The technology *did* exist for strategic bombers, however, so investing in bombers over the risky ICBM made military, technological and economic sense.[12] At least this was the argument the Air Force used to explain why it did not attempt to develop an ICBM in the immediate post-war years.[13]

The reality was more complicated. At the same time that it rejected the ICBM, the Air Force also funded development of a third type of weapon system in the post-war years: the cruise missile. The existence of this weapon program defied many of the arguments used against the development of the ICBM. If atomic warheads were too scarce for use on ICBMs, then why were they considered plentiful enough for cruise missile use? (Indeed, the scarcity of warheads was never used as an excuse for not building more bombers.) If the ICBM was an unreliable and risky development, why was the Air Force producing a pilotless weapon system that had to guide itself to a target thousands of miles away at a time when it was not clear how this would be accomplished (i.e. a weapon system that was

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[11] See, for instance, Lt. Col. Kenneth F. Gantz, *The United States Air Force Report on the Ballistic Missile* (Garden City, NY: Doubleday & Company, 1958), pp. 26-28. General Schriever, who ran the program, argued both at that time and (to a lesser extent) today that the sudden acceleration of the program was due to the "thermonuclear breakthrough," after which the ICBM supposedly made sense. But it has long been apparent to scholars of the ICBM program that lack of Air Force support had more to do with bureaucratic opposition than technological impediments.

[12] Beard, *Developing the ICBM*, p. 218.

[13] Carl H. Builder, *The Icarus Syndrome* (New Brunswick, CT: Transaction Publishers, 1994).

just as risky to develop as the ICBM)? Major General Donald Putt, Commander of the Air Research and Development Command and later Deputy Chief of Staff, Development, provided an explanation: "The air-breathing missiles looked like aircraft," he said, and that made them easier to accept than the bullet-shaped ICBMs.[14] The cruise missile's technological hurdles were not viewed as significant because of this bias. The bomber and cruise missile programs were fully funded at the time, supported by both the Congress and the White House. But it is obvious that their true advocates were within the Air Force itself.

At this time, the uniformed military leadership, not the civilian appointees, wielded the majority of control over Air Force procurement. While the other services, particularly the Navy, had created civilian secretaries specifically devoted to procurement issues, the Air Force procurement was handled at the Air Materiel Command and coordinated with the Secretary of the Air Force, which at the time was a relatively small institution. Thus, the procurement system was more heavily under the control of uniformed officers than civilian leadership in the Office of the Secretary of the Air Force (OSAF).[15] This gradually began to change, particularly after 1951, as the OSAF increased in size and acquired more expertise.

The ICBM: 1946-1953

Soon after World War II, the Army Air Forces, impressed by German developments as well as the emergence of the jet engine, began research into cruise missiles. Upon its creation in 1947, the U.S. Air Force continued this research, eventually deciding upon a phased program to develop what was soon named the Navaho cruise

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[14] John Lonnquest and David Winkler, *To Defend and Deter: The Legacy of the United States Cold War Missile Program* (USACERL Special Report 97/01) November 1996, p. 24.
[15] George M. Watson, Jr., *The Office of the Secretary of the Air Force, 1947-1965* (Washington, DC: Center for Air Force History, 1993), p. 115.

missile. The Air Force also funded a ballistic missile research program by the Convair Corporation. The ballistic missile project was designated the MX-774 and it involved a number of innovative new technologies that were considerably more sophisticated than the German V-2. In fact, while the Army followed a rather linear path of upgrading the V-2 by lengthening its fuel tanks and improving its engines, the Air Force and Convair chose to advance the state of the art for ballistic missiles in entirely new directions.

In 1947, due to a general decline in military research and development spending, funding for ballistic missile research also fell off.[16] The Air Force cancelled Project MX-774.[17] This overall decline in military R&D funding concerned a number of top civilian officials in the Air Force who complained that research and development was being underfunded and deserved more attention. They recommended that the Air Force R&D effort be separated from the Air Materiel Command and given its own command and high-level representation on the Air Staff (the senior uniformed Air Force leadership). These recommendations were adopted by the Air Staff, and resulted in the creation of the Air Research and Development Command (ARDC) in January 1950.[18] But they did not improve the funding situation for ballistic missile research. Thus, there was now an organization within the Air Force for developing advanced weapons, but the ICBM still remained largely unfunded within this organization. The cruise missile, however, was fully funded.

In 1950, the Navaho cruise missile was refined to a three-step program. The initial phase involved the development of a 1000 mile range air launched missile, to be followed by a 1,700 mile air-launched missile and eventually by a 5,500 mile surface-launched

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[16] Jacob Neufeld, *Ballistic Missiles and the United States Air Force* (Washington, DC: U.S. Government Printing Office, 1990), p. 65.
[17] Beard, *Developing the ICBM*, p. 65; Lonnquest and Winkler, *To Defend and Deter*, p. 24.
[18] Beard, *Developing the ICBM*, p. 116; "Research and Development in the United States Air Force," Report of a Special Committee of the Scientific Advisory Board to the Chief of Staff, USAF, 1949; Dwayne A. Day, *Lightning Rod: Fifty Years of the Office of the Chief Scientist* (Washington, DC: U.S. Government Printing Office, Publication Forthcoming).

missile. This was a *phased* development program, not a single ambitious leap. Another cruise missile program, known as Snark, involved the development of a 5,000 mile surface launched missile, but by 1950 it had been downgraded to development of a guidance subsystem and a guidance test vehicle only, due to concerns about its technological feasibility.

By December 1950, the Air Staff awarded a contract to the Convair Corporation to identify which type of strategic long-range weapon was more desirable—the ballistic missile or a long-range cruise missile. The Air Staff established some basic criteria: the weapon had to be capable of carrying an 8,000 pound warhead a distance of 5,000 nautical miles and striking within 1,500 feet of its target.[19] The 8,000 pound warhead was the smallest then in the inventory. But these requirements ignored clear indications that warhead weights would soon be reduced substantially. Harry Truman gave approval to the development of the H-bomb 11 months before, in January 1950, and in February he stated that the military chiefs were proceeding on the assumption that the H-bomb would work and would become available soon.[20] But despite this statement from Truman, there were no changes in plans for the ICBM and the Air Force continued to insist that the ICBM be designed to carry a heavy *atomic*, not hydrogen, warhead.[21]

Considering that the service had virtually no experience with any kind of ballistic missile, these were demanding requirements. But the Air Force did not propose the same phased development of the ballistic missile that it had proposed for the Navaho cruise missile. The Air Force would only accept an ICBM that could achieve dramatic performance achievements and nothing less. Convair reported back in September 1951

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[19] Neufeld, *Ballistic Missiles and the United States Air Force*, p. 65.
[20] Beard, *Developing the ICBM*, p. 142.
[21] Only a few years later the Navy took a far more radical approach when it developed the Polaris missile. While early designs of the missile had been based upon existing technology, particularly heavy warheads, the Navy soon adopted a plan to design its missile around an anticipated, but nonexistent, warhead that would be much lighter. This, combined with other newly emerging technologies, allowed the Navy to design a significantly smaller and longer-ranged missile than it initially planned.

with a ballistic missile design that was extremely large: 160 feet long, 12 feet in diameter, and equipped with seven rocket engines. The overall ICBM project was named Atlas.[22] The ARDC clearly wanted to proceed to full-scale development, but the Air Staff refused, allowing only a test program.[23]

Establishing a set of acceptable requirements for the ICBM proved to be a major problem for the Air Force. In August, 1952, the ICBM project was placed under the supervision of the Wright Air Development Center's (WADC) Bombardment Missiles Branch. WADC was unwilling to relax any of the requirements for the Atlas other than the warhead weight. In addition, it recommended that range be *increased* from 5,000 nautical miles to 5,500 nautical miles. It sent these requirements to ARDC, which accepted them and recommended immediate approval and top priority for the Atlas program. An earlier ARDC proposal for a more realistic, shorter-range missile was abandoned.

In December 1952, the Air Staff asked the Air Force Scientific Advisory Board (SAB), a civilian advisory group, to comment on the subject of ballistic missiles. An SAB committee concluded that both the warhead and accuracy requirements could be relaxed and that the Air Force should begin an incremental approach to missile development, similar to the approach it was already pursuing toward the cruise missile. ARDC officials were not happy with the committee's recommendations. They felt that the ambitious accuracy requirements were achievable. The committee and the ARDC met to discuss their differences.

Soon after, the Atomic Energy Commission reported that atomic warheads could soon be expected to weigh as little as 3,000 pounds—i.e. less than half the size of the weapon the Atlas was being designed to carry. This prompted ARDC officials to argue for proceeding with full-scale development of an ICBM that would be half the size of the

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[22] Lonnquest and Winkler, *To Defend and Deter*, p. 213.
[23] Ibid., p. 31.

earlier Convair proposal. ARDC proposed a missile capable of launching a 3,000 pound warhead 2,000 nautical miles, or a 1,500 pound warhead 3,000 miles.[24] Essentially, ARDC officials argued that the range requirements for the ballistic missile should be relaxed. Once again the Air Staff was unmoved.

Although the Air Staff accepted that warhead weights were decreasing and therefore agreed to lower the warhead payload requirement from 5,000 pounds to 3,000 pounds, it traded this off for the *increase* in range from 5,000 nautical miles to 5,500 nautical miles that WADC had earlier recommended. More importantly, the Air Staff refused to abandon the 1,500 foot accuracy requirement. The resulting missile would be 110 feet long by 12 feet in diameter and would still require 5 engines to power it.

Throughout 1953, ARDC officials continued to refine the requirements for the Atlas and projected a 10 year development time. In October 1953, the program was given a 1-B development priority—lower than before, which essentially meant that it would remain starved for both resources and money compared to other programs.[25] The missile would become operational in 1964 or 1965, although it could be made ready two or three years earlier if sufficient funding was provided and it was given a 1-A priority.[26] In September, ARDC had specifically rejected the possibility of using a smaller 1,500 pound warhead even though it would significantly decrease the size of the missile. According to ARDC opponents of this idea, scaling down the missile would also require scaling down the size of the engines. Since the smaller engines would take as long to develop as the larger planned engines for the Atlas, ARDC rejected this course of action.[27] During this time there was a clear difference between the views of the Air Force's senior leadership and its research and development command. The Air Staff's requirements were highly ambitious,

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[24] Neufeld, *Ballistic Missiles and the United States Air Force*, p. 71.
[25] Lonnquest and Winkler, *To Defend and Deter*, pp. 213-214.
[26] Neufeld, *Ballistic Missiles and the United States Air Force*, pp. 77-78.
[27] Ibid., p. 103.

rigid and unwavering. ARDC was more flexible. However, it is clear that *no* military officials within the Air Force were willing to be as flexible on the ICBM as they were with the cruise missile—they still wanted a missile that had ambitious goals and were unwilling to give it the priority that it required to be deployed in under ten years.

While the Air Force claimed that the ballistic missile was not advanced enough to be approved for development, the service's requirements for the missile made the technology hard to develop. The Air Force wanted a weapon capable of delivering a 3,000 pound warhead to a target to an accuracy of 1,500 feet. This was essentially a requirement to be able to attack "hard" targets and destroy them effectively. Yet at the time the Air Force's nuclear weapons strategy was based upon hitting cities, not hard targets. The Air Force demanded that an ICBM be as accurate as a manned strategic bomber even though it was virtually invulnerable and still capable of contributing to the existing massive retaliation doctrine. In other words, the ICBM could achieve an important mission, yet be invulnerable—but the Air Force did not want it.

But was the ICBM really needed? The Soviets lacked advance bases around the periphery of the United States from which to launch an attack, whereas the United States had bases around much of the periphery of the Soviet Union. By 1953, the vulnerability of these bases to Soviet attack became a pressing concern.[28] Furthermore, the appearance of Soviet jet fighters placed American bombers at risk, pushing the Air Force to seek ever faster and higher-flying bombers.[29] Therefore, by the Air Force's own definition of the increasing threat, the ICBM was of potentially enormous significance to the service. Because of the small size of the warhead and the high speed at which it approached its target, there was no practical defense against the weapon and there was unlikely to be a

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[28] Fred Kaplan, *The Wizards of Armageddon* (New York: Simon & Schuster, 1983), pp. 104-106.
[29] For a discussion of the race to constantly improve bombers to evade this new threat, see: Michael E. Brown, *Flying Blind: The Politics of the U.S. Strategic Bomber Program* (Ithaca, NY: Cornell University Press, 1992).

defense against it for some time to come. This fact alone should have justified greater funding for research and development than the Air Force was then allocating to the system.[30] In addition, Air Force studies increasingly emphasized the threat to the manned strategic bomber, particularly from surface to air missiles (SAMs). The Air Force response to this increasing threat was to build more bombers and to propose bigger and faster bombers, culminating in the development of the Mach 3 XB-70 bomber. But the Air Force ignored the ultimate solution to bomber vulnerability, the ICBM.

The Air Force leadership's attitude of viewing the solution to the increasing threat in one dimensional terms (i.e. bombers) was not unusual. The Air Force, like all large bureaucracies, defined itself in terms of its major mission. After World War II, its major mission was strategic bombing and the manned strategic bomber was therefore the centerpiece of its focus. Ballistic missiles lacked the established constituency of piloted aircraft.[31] In addition, the Air Force leadership was supported in this view by Congress, which favored building more bombers, particularly since they helped spread money around to established constituencies.

Thus, by the end of 1953, the Air Staff was unwilling to support the full scale development (under high priority) of an ICBM despite the fact that the technological arguments against it had evaporated. Furthermore, the technical experts at ARDC were also unwilling to relax other restrictions, such as the accuracy requirement, that made the development of an ICBM more challenging. During this entire time period, there was no specific direction from either the Congress or the president on the development of specific strategic delivery systems. Lacking this, the Air Force advocated its default position, which was a bias in favor of the manned strategic bomber.

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[30] Beard, *Developing the ICBM*, p. 219.

[31] Indeed, of the 14 Chiefs of Staff of the Air Force since the establishment of the service in 1947, not one has been a non-pilot.

From 1946 until 1954, the development of the ballistic missile had not received high-level attention from the White House. As far as President Truman and his senior advisors were concerned, the ICBM did not even exist. Eisenhower and his senior advisors were aware of the ballistic missile, but did not begin paying attention to it until 1953. Before this, direction from the executive branch principal, when it came, was from lower levels. It was also unfocused. The primary direction from the principal was a general emphasis on the importance of deterrence and eventually pursuit of a massive retaliation strategy. The case of the ballistic missile from 1946 to 1953 therefore does not fit a classic bureaucratic politics model of behavior, although it does reflect some of the attributes of that model. It was not a case of the bureaucracy achieving its wishes over the will of the executive, or a case of compromise leading to sub-optimal decisions. Lacking clear direction from above, the bureaucracy chose to obey its culture and its internal biases—bombers over missiles, cruise missiles over ballistic.

The ballistic missile program during this period was essentially a failure. The Air Force established a set of unrealistic criteria for the weapon and then refused to give the program the priority necessary to achieve rapid development. At the same time, it was willing to alter the criteria for weapons like the cruise missile that it wanted to develop. According to Pentagon officials that reviewed the program starting in 1953, the Air Force was never going to develop the ICBM under the existing leadership and management approach. It was impossible to achieve success when the goals were set so high and the funding and priority were set so low.

The structure of the ballistic missile program at this time was not deliberately controlled by the principal. There was no clear and distinct hierarchy established to direct the ballistic missile program. Both the Air Staff and the Air Force's research and development command were involved in the program, which was one among many that the Air Force was pursuing. ARDC had been created as a general development command for

all Air Force weapons, not an ICBM development command. It therefore had many additional missions. There was no real attempt to control information flow to the principals. The hierarchy was not streamlined. The ballistic missile program responded to multiple inputs and fuzzy goals. The outcome of the ballistic missile effort at this time was relative inaction, a constantly slipping schedule and changing, albeit ambitious, performance goals.

The strategic guidance coming from both Congress and the president at this time was general—defend the United States from attack through an effective deterrent. It was not specific. As long as this was the case, the Air Force could interpret the goal in the way it thought best, resorting to its bias for large manned strategic bombers and unmanned weapons with wings and air-breathing engines. The Air Force would continue in this mode until the strategic guidance from the principals changed.

The Principal Intervenes—The ICBM: 1953-1954

In June 1953, the new Secretary of Defense, Charles E. Wilson, directed Air Force Secretary Harold E. Talbott to conduct a comprehensive analysis of all American guided missile programs. Wilson intended this review to identify unnecessary duplication of effort. Talbott directed his Special Assistant for Research and Development, Trevor Gardner, to head a committee to study the issue.[32] Although Gardner was not a political appointee, he was directly accountable to a political appointee and acting with his authority. At the time, he was one of dozens of mid-ranking Defense officials and his views were no more valid than any others.

Gardner chose to focus solely on performance considerations for the guided missile programs. Gardner's study did not propose any radical changes in guided missile

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[32] Neufeld, *Ballistic Missiles and the United States Air Force*, p. 93; Lonnquest and Winkler, *To Defend and Deter*, pp. 36-37.

programs and, rather than concluding that there were redundancies which needed to be eliminated, it recommended that programs with a reasonable chance of success be continued.

Only three months earlier, in March 1953, Air Force Chief of Staff Hoyt Vandenberg had created a nuclear weapons panel on the Air Force Scientific Advisory Board to evaluate the potential of new thermonuclear weapons. The first such weapon had been tested by the United States in November 1952. Meeting in June 1953, the panel discussed the development of hydrogen weapons for ICBM use and determined that usable weapons weighing as little as 1,500 pounds could quickly be developed. At this time, the Atlas ICBM was focused on development of a weapon capable of carrying a warhead weighing 3,000 pounds. Since the size of a missile was almost directly proportional to the size of its warhead, cutting the size of an ICBM warhead from 3,000 pounds in half meant that the overall weight of the missile could be nearly halved as well.

The nuclear weapons panel met at the same time as Gardner's committee on guided missiles. Gardner quickly became aware of their preliminary findings and created a second committee to evaluate only strategic missile programs—the Snark, Navaho and Atlas. This committee was known as the Strategic Missiles Evaluation Committee (SMEC—it was also sometimes known as the Teapot Committee).

The SMEC issued its report in February 1954. It concluded that both Snark and Navaho were unlikely to produce a usable weapon system in the near future due to technological obstacles. It focused instead upon the Atlas. The committee determined that a 1,500 pound warhead was feasible and that the new, more powerful warhead would allow the stringent 1,500 foot accuracy requirement to be lowered to between two and three nautical miles. It would also allow the missile's weight to be cut significantly.

Finally, in order to achieve operational capability at the earliest possible time, the committee called for a new management framework within the Air Force for the

development of the ICBM. This could only be accomplished if the development was entrusted to "an unusually competent group of scientists and engineers capable of making systems analyses, supervising the research phases and completely controlling the experimental and hardware phases of the program."[33] Because no single contractor possessed the personnel needed to accomplish this mission, they would have to be recruited from throughout the country—from universities, industry, and government. The committee also concluded that this new management and development group would have to be free of "excessive detailed regulation by existing government agencies."[34] If these changes were made, the committee concluded, the United States could have an ICBM available in six to eight years, instead of the ten years projected by the Air Force. Notably, the committee disagreed with an earlier Air Force statement that the ICBM could be made available in the same amount of time simply with full funding—in their view it needed to be managed differently, *not* simply given more money.

Gardner had concluded that 1) the ICBM was technically feasible and militarily essential, 2) the Air Force's requirements for the missile could be relaxed, 3) a broad industrial base would have to be fabricated, 4) a management and scientific and technical team of great competence would have to be assembled, and 5) normal Air Force procedures would have to be circumvented, eliminated, or temporarily set aside.[35] In short, he recommended an entirely new bureaucratic structure for developing an ICBM, one that would bypass many of the obstacles within the Air Force that had previously prevented the ICBM from being developed. This was his public position. What Gardner said in private was that the primary obstacle to ICBM development *was not technology, but Air Force opposition to the weapon*, and he found mid-level Air Force officers within the Air

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[33] Neufeld, *Ballistic Missiles and the United States Air Force*, p. 102.
[34] Ibid., p. 102.
[35] Michael H. Armacost, *The Politics of Weapons Innovation: The Thor-Jupiter Controversy* (New York: Columbia University Press, 1969), p. 57.

Research and Development Command who agreed with him.[36] The technology argument had now evaporated: the "thermonuclear breakthrough" made an ICBM achievable and the senior Air Force leadership could no longer argue otherwise.

The SMEC report worried a number of Air Force generals who felt that it might be used to justify removing responsibility for the development of the ICBM from the Air Force entirely. SMEC appeared to be arguing for a Manhattan Project-type organization to develop ICBMs outside of the Air Force. Furthermore, Gardner obviously had the full support of Secretary of the Air Force Talbott, and by extension, the Secretary of Defense and President Eisenhower, and opposing him could only strengthen his argument that uniformed Air Force opposition to the ballistic missile was the primary obstacle to its development.

The Air Force uniformed leadership did not want to see this new weapon system taken away and placed under the domain of an entirely separate organization. Because of this possibility, once it became clear that the administration wanted the ICBM, those in the Air Force who had previously obstructed the development of the ICBM chose to follow the committee's recommendations—as long as responsibility for the missile remained within the Air Force. It was the threat of losing the mission entirely that caused the Air Force to suddenly pay much more attention to the ballistic missile issue than it had before.[37] The intervention of the executive principal had focused the agent's attention on the ballistic missile.

A meeting of key officials from ARDC, Convair (then the prime contractor for Atlas), the Air Staff and the SMEC took place in February 1954. The participants agreed that the Air Force could not produce an operational ICBM by 1960 under the existing organizational and managerial relationship. Gardner argued that in order to speed up the

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[36] Spires, *Beyond Horizons*, p. 31.
[37] Beard, *Developing the ICBM*, p. 168.

production of the ICBM, the Air Force would have to "dramatize the acceleration of the program and... simplify the normal controls and channels of organization."[38] The Atlas would have to be formally sanctioned at the highest levels, including the President and the Joint Chiefs. This, Gardner argued, would clearly demonstrate its priority. What he was also proposing was to alter the hierarchical relationship between the principal and the agent. Instead of multiple layers between the principal and the implementing agent, he wanted only a few. This would ensure that commands from the White House and Pentagon would travel efficiently and undiluted down to those building the missile, with as little interference from the Air Force bureaucracy as possible.

A month later, Gardner briefed his plan to accelerate Atlas development to Air Force Secretary Talbott and Chief of Staff Twining. He outlined a five-year spending and program plan. If the program was reoriented in the way he suggested and adequate funds provided, the Air Force would have a "preliminary capability" by June 1958 of four operational missiles at two sites. By 1960, it would possess 20 launch sites and 100 operational missiles. (Gardner soon revised and decreased these estimates slightly.)

Secretary Talbott directed Twining to immediately implement Atlas acceleration plans and also designated Gardner as his direct representative in charge of all aspects of the program. Despite this directive, due to foot-dragging by the senior uniformed leadership of the Air Force, it took another three months before the special office in charge of ballistic missile development, designated the Western Development Division (WDD), was established in Inglewood, California in August 1954.[39] WDD was placed under the command of Major General Bernard Schriever. Schriever had earlier been named as an assistant to General Power, the commander of ARDC. He maintained this position, which

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[38] Neufeld, *Ballistic Missiles and the United States Air Force*, p. 104.
[39] Ibid., p. 108. Neufeld notes only that the Air Force was slow to implement the decision and implies that it was reluctant to do so, but does not offer any more explanation for the delay.

gave him the authority of an ARDC deputy commander with direct access to all of the command's development centers and contacts with the Air Staff.[40]

Despite having the support of the Secretary of the Air Force and a dedicated program office established in California, Gardner knew that the program was unlikely to progress until it had the formal endorsement of President Eisenhower. Up until this point, he had been acting under the authority of the Secretary of Defense and the Secretary of the Air Force within the executive branch. But the changes that he was proposing could be opposed by the Air Force's uniformed leadership unless the president clearly stated that the ICBM was of highest national priority.

Gardner spent the latter part of 1954 and early 1955 further buttressing the case for the ICBM. In July 1955, he and General Schriever briefed Eisenhower and the National Security Council on the program. As the NSC debated the issue, Secretary of Defense Wilson, stated that he did not think that a separate designation of the ICBM as a "highest national priority" system was necessary or wise. Wilson felt that his own directives indicated a high priority for the program and did not think that other programs should be made subservient to the needs of the ICBM. Gardner disagreed. Soon after, the NSC staff recommended that Eisenhower designate that the ICBM had priority above all other weapons programs. On September 13, 1955, Eisenhower issued a directive that the ICBM be pursued with "maximum urgency." Eisenhower's decision essentially overruled his Secretary of Defense and made it clear that he agreed with Gardner's recommendation. This substantially increased Gardner's credibility among other defense officials.[41]

In order to ensure that the ICBM was treated as a top priority program in a service that was predisposed to view strategic bombers as top priority, Gardner used the president's order to justify establishing a committee under Hyde Gillette, the Air Force

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[40] Ibid.
[41] Ibid., p. 135.

Deputy for Budget. Working closely with General Schriever, the committee established a set of administrative procedures for the Western Development Division. These made WDD solely responsible for planning, programming and directing ICBM development.[42] The Gillette Procedures, as they were called, created a single level of approval through the Air Force that bypassed the traditional Air Force bureaucracy. WDD would have direct contact with a new committee called the Air Force Ballistic Missiles Committee (AF-BMC), which was chaired by the Secretary of the Air Force and included his principal assistants and the Assistant Chief of Staff for Guided Missiles. This arrangement did not require Schriever to go through his superior officers either at ARDC or the Air Staff. Instead, he reported to and received most of his orders directly from civilians. It cut the number of review levels for decisions from 42 to 10. In other words, it cut the uniformed Air Force leadership out of the primary chain of command concerning ICBM development. The Gillette Procedures were approved in November 1955.[43]

Although Trevor Gardner clearly took the lead within the Eisenhower administration in pushing the development of the ICBM, it was the presidential directive of September 1955 that clearly established Gardner's authority on the ICBM issue. Soon the president himself became involved in monitoring the progress of the effort. In the second half of 1955, as a result of Gardner's efforts, the National Security Council began evaluating policies concerning ballistic missiles. After Eisenhower had issued his order, on December 1, 1955 the NSC listed certain actions to be taken to develop all ballistic missiles, not only the ICBM, but its shorter-range cousin, the Intermediate Range Ballistic Missile (IRBM). Eisenhower considered these NSC actions and made two additions. One stated his personal view that the development of an effective ballistic missile at the earliest date was "of critical importance to the national security interests of the United States."

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[42] Ibid., p. 120.
[43] Ibid., p. 120; Lonnquest and Winkler, *To Defend and Deter*, pp. 42–44;

Eisenhower also "directed that the IRBM and ICBM programs should both be research and development programs of the highest priority above others. Mutual interference between these programs should be avoided so far as practicable, but if a conflict should occur... [which] would in the opinion of the Secretary of Defense, cause major damage to the security interests of the United States, then the matter will be promptly referred to the President."[44]

This was a classic example of principal agency in effect. A principal (Gardner, acting with the authority entrusted to him through his position in the executive branch) directed an agent to build an ICBM. After he had received clear presidential authorization, he changed the structure of that agent to ensure that it could achieve the goals that the president had agreed to. Instead of giving the mission to a multi-mission agent (the ARDC, within the Air Force), he created a single mission agent (Western Development Division). And he increased the vertical hierarchy by bypassing the uniformed Air Force leadership for most major decisions. The agent that actually carried out the directives reported to a committee established by the executive. Thus, two classic aspects of structure—the number of missions an agent performs and the hierarchy in which it operates—were directly changed for the ICBM program. The third aspect of structure, its information reporting to the principals, was increased for the president (by requiring it to report to higher level committees), rather than through multiple levels. The more levels there were, the slower the implementation worked and the more likely it was that information would reach the Congress. To counteract this, Gardner decreased the levels, speeding up the implementation and reducing the amount of information that could escape from them.

Although Eisenhower did not necessarily fear direct congressional obstruction of the ICBM program, what he did not want was any actions that could delay the weapon's

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[44] "Memorandum for the Secretary of Defense," December 21, 1955, cited in: Fred I. Greenstein, *The Hidden-Hand Presidency* (New York: Basic Books, 1982), pp. 84-85.

development. The first step was eliminating bureaucratic red tape, which was often the result of years of incremental congressional legislation. The second step was ensuring that delays could not happen. Delays could come from the Air Force bureaucracy, or the Congress itself. Because the Air Force's uniformed leadership had no direct interest in the weapon, they could potentially appeal to Congress to obstruct the program—for instance, to reallocate its money to other more attractive programs like bombers. This is certainly what happened in the case of the MX-774 in 1947—faced with constrained R&D spending, the uniformed Air Force chose to spend money primarily on weapons close to its institutional heart, manned bombers. By removing the uniformed Air Force from the equation, the president decreased their ability to appeal to Congress.

This is not to say that Congress opposed the ICBM. But Congress did favor other programs with established constituencies, like major aerospace contractors. And if Congress chose to get involved, it possessed the ability to significantly impede the development of the ICBM. Thus, the president sought to ensure that Congress had no reason to get involved.

Although the ICBM program still had to receive funding from Congress which conducted oversight and possessed the ability to interfere with the program, the design of the ICBM bureaucracy—the agent—made congressional oversight more difficult and made it possible to control the information that Congress received. First, because the ICBM effort was more focused, streamlined and hierarchical, it was easier for the administration to speak with one voice during Congressional hearings and information requests. Rather than multiple layers of the ARDC bureaucracy all presuming to speak for the ICBM (and all possibly leaking information to damage the program), there was only Major General Schriever. The isolation of WDD from ARDC, both physically and bureaucratically, meant that information did not easily reach the program's critics within the Air Force. Second, the ICBM program used a number of advanced management and accounting techniques that

were new and relatively poorly understood outside of WDD. Schriever and his deputies were able to use these to both impress and confuse Congressional inquiries.[45]

One of the techniques Schriever used to control information was the Management Control System (MCS), which Schriever and his staff developed in 1954. MCS was a means of standardizing and regularizing the mountains of information needed to run the different project offices. This information came into the Program Control Room, which was a huge concrete vault covered with over 400 charts and graphs on every element of the missile program and under 24-hour guard. Although Schriever claimed to use the material several times a day, a number of his deputies claimed that he only went into the room to impress visitors.[46] It was therefore less of a management tool than an information control tool.

Another important management technique was concurrency. In simple terms, concurrency meant the overlapping of the development and production process which was necessary to make the ICBM operational at the earliest time. In reality, it was a vastly complex system that was only one part of Schriever's overall management effort. Indeed, the word "concurrency" was not even used within the missile program—Schriever created it for external consumption. As one historian of the missile program stated: "Although this [the name "concurrency"] was a dramatic oversimplification, it served Schriever well. It allowed him to use concurrency as a buzzword, a simple, convenient way to describe a risky and intricate development process to the uninitiated. The result was that although

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[45] John Clayton Lonnquest, *The Face of Atlas: General Bernard Schriever and the Development of the Atlas Intercontinental Ballistic Missile, 1953-1960*, Ph.D. Dissertation, (Houston, TX: Duke University, 1996), pp. 226-228.

[46] "Not everyone thought the PRC was as valuable as Schriever did. Colonel Otto Glasser, of the Atlas program, dismissed the PRC as window dressing. The program managers did not use it, Glasser said, because they already had all of the information they needed for their projects. Schriever was the only person who used the PRC, Glasser said, and he used it only to impress his important visitors. Glasser and the other program managers chuckled when they heard Schriever tell visiting congressmen that he used the material in the PRC several times a day. The only time Schriever went into the PRC, the program managers muttered, was when he was giving a tour." Lonnquest, *The Face of Atlas*, p. 227. Lonnquest stresses that the Management Control System and the PRC served important purposes within the ballistic missile office, but that their public relations aspects were of major importance to Schriever.

Congress and the media still did not understand the AFBMD's [Air Force Ballistic Missile Division, the name for Western Development Division after June 1957] management methodology, through Schriever's stripped down explanation of concurrency, they *thought* they did."[47] Concurrency had many different subtle values, all useful for controlling the way that Congress both understood the program and felt assured of its own oversight: "Concurrency was also a superb public relations tool. It helped Schriever cloak the ICBM program in an aura of managerial expertise, which Schriever used to insulate the program from its critics. Concurrency also allowed Schriever to reassure Congress that its money was being well spent. Although most of the congressmen who visited the AFBMD did not understand missile technology, all fancied that they could identify poor management when they saw it."[48] Schriever was a good manager, but was able to convince the congressmen that he was an incredible one.

While these first two aspects of information asymmetry between WDD and Congress were essentially *designed* into the structure of the ICBM program (either deliberately from the start, like the Gillette Procedures, or over time, like concurrency), another cause of information asymmetry was inevitably the result of the high-technology nature of the program. Unlike airplanes, even highly advanced ones, ballistic missiles were totally alien to most congressmen. The president of Convair's Atlas division noted that the two most frequent questions from congressmen were "Which is the front end?" and "Is it faster than a bullet?"[49] Congress was at a natural informational disadvantage when it came to monitoring those responsible for the ballistic missile. However, the president was at a lesser disadvantage. He had mechanisms like the standing Ballistic Missiles Committee to serve as a monitor on the ICBM's progress.[50] He had experts working for him and

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[47] Emphasis added. Ibid., p. 234.
[48] Ibid.
[49] Ibid.
[50] Managing high technology bureaucracies has always been a greater problem for principals than managing other types of bureaucracies. Very few congressmen or presidents come from high technology backgrounds.

monitoring the program all the time, patrolling for problems. If something went wrong, they worked to correct it immediately or brought it to the president's attention. He had standing orders (re the December 1955 memorandum to the Secretary of Defense) that problems should be brought to him. In contrast, Congress received updates only periodically, when it chose to specifically look at the subject, and there was no requirement that problems be brought to Congress' attention. Congress was unable to monitor the program constantly—nor did it have an incentive to do so.

The information asymmetry problem with regard to high technology endeavors is worse for the Congress than for the president. The president has the ability to create highly focused advisory boards like the SMEC and the Air Force Ballistic Missile Committee, utilizing the nation's finest talent to help alleviate the information asymmetry problem. Congress lacked this capability for a long time and ultimately came to recognize this when it created the Office of Technology Assessment (OTA) in 1973 to alleviate it. The president also benefits from the fact that key parts of the agent are in effect also parts of his team as principal.

At the same time, one of the inevitable characteristics of this specially-designed agent was that the tremendous information resources of the agent could also eventually be used against the White House and the Pentagon. WDD could use some of the same information resources it employed to keep Congress in the dark to also keep the administration at bay. There is at least some indication that the executive branch eventually feared this; Schriever managed to accrue enough information as well as mystique that Department of Defense leaders became wary of him.[51] However, despite their wariness,

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Generally, they will be more comfortable with areas closer to their own background such as legal and regulatory issues. Furthermore, they will feel more comfortable and knowledgeable about things over which they have some kind of direct connection, such as health care.

[51] "Although some Air Force and Department of Defense officials felt that the missile program had too much independence, they were reluctant to try to reign Schriever in, lest they be accused of impeding such a high priority program." Lonnquest, *The Face of Atlas*, p. 235. Unfortunately, there is little more information on this aspect of the program.

all indications were that the ICBM program was on schedule and on budget, which is what they wanted. The information was ultimately proven correct.

There was a qualitative difference in the way that the relationship between WDD and the White House worked compared to WDD's relationship with the Congress. Much of the information asymmetry with the Congress was deliberately designed in by the executive branch and WDD from the outset. It was intentional, immediate and the interests of both principal and agent reinforced each other, since neither wanted delay in ICBM development. In the case of the information asymmetry problem between WDD and the White House (or, more accurately, WDD and the Secretary of Defense), this was more gradual. The longer the program went on, the more that DoD officials felt that they were in the dark. But Congress was in the dark instantly. Therefore, the two situations were not equal ("unequal information asymmetry") and the president had more control over information reaching him than Congress did.

Program Results

General Schriever's Western Development Division was established in Inglewood, California and quickly moved into high gear. Money was no object. Further, the priority afforded to the program meant that it could obtain the best personnel to accomplish the mission. Over the next several years WDD expanded to take on additional ballistic missile programs such as the Titan and the Thor, as well as the WS-117L reconnaissance satellite. But the primary mission of WDD was not diluted by the addition of these other tasks and compared to other bureaucracies, which might have dozens of research and development projects underway simultaneously, this was a highly focused agent.

Despite the gradual growth in mission, WDD was an unqualified success. The original general target date for the ICBM was to develop an operational missile by 1960 (vs the earlier estimate of 1964 or 1965). The first Atlas missile was deployed in September

1959.[52] The first Atlas complex was complete in 4.9 years and the first squadron in 5.2 years.[53] Compared to other programs, even traditional aircraft projects that could not be considered nearly as challenging, the ICBM development program was remarkably successful. The first squadron of B-36 bombers had taken 7.6 years to become operational. The B-52 took 9.4 years and the B-58 (one of the most ambitious bomber designs), took 11.2 years. The Snark, which was the Air Force's air-breathing strategic missile and had been the favored missile of choice by the uniformed Air Force, took 13.4 years to develop and deploy and was soon withdrawn from service.[54] The ICBM beat all of these substantially. It also earned a reputation as the ideal weapons development effort and something that the Air Force sought to emulate in following years. Thus, the president achieved his goals. He got the bureaucracy to do what he wanted.

From the president's standpoint, the ICBM was an unqualified success. Not only did the ICBM achieve its performance goals, but it did so while requiring little further presidential intervention. Although Eisenhower was regularly briefed on the progress of the program, he was not required to settle disputes. At one point he intervened to personally promote Schriever from Major General to Lieutenant General, demonstrating his confidence in the head of the ICBM program. But his presidential records are not filled with documents indicating that Eisenhower had to constantly settle disputes over the ICBM program. It operated smoothly according to his wishes, and achieved the goals he wanted to achieve.

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[52] Lonnquest and Winkler, *To Defend and Deter*, p. 209.
[53] Beard, *Developing the ICBM* p. 201.
[54] Clayton, *The Face of Atlas*, p. 240. Lonnquest notes that the ICBM had a higher priority than any of these other weapons, but the other weapons were also all significantly less complicated.

Agency Design As a Means of Principal Control

What effect did presidential intervention (by the president's team member, Trevor Gardner) have upon the development of the ICBM? Did it help or hinder the program? How and why did the president shape the program in the way that he did? Was the president, as principal, able to exert control over a bureaucracy and achieve his policy goals?

After years of neglect, what ultimately caused the ICBM to proceed toward development and accelerated that development was not improved technology, but high-level intervention by a presidential representative and the changing of the structure of the agent responsible for building the ICBM. In 1953-54, when Trevor Gardner decided that ballistic missiles were a worthy goal for the Air Force, he did not simply direct the service to build them and increase the funding available to do so. Gardner's committee determined that simply increasing funding to the Air Research and Development Command was unlikely to achieve the results that they wanted—an operational ballistic missile in six years. The weapons development capabilities present in the Air Force were extensive, but there were more fundamental obstacles to achieving success. Gardner, acting on behalf of President Eisenhower (through his "team" of Defense Secretary Wilson and Air Force Secretary Talbot), served as a principal and directed a government agency to carry out a specific policy. The Air Force was the agent. But in this case the principal did not simply direct the agent, it *created* a new agent within the old one, carving out WDD from the Air Force.

Based upon a review of the previous ICBM development effort and an understanding of the Air Force organization, Gardner chose to structure the Air Force bureaucracy to achieve the results that he wanted. He changed the structure of the development organization from a multiple mission bureaucracy operating amidst sophisticated and cumbersome rules to a single mission bureaucracy operating under

simpler rules. He chose to develop a broad industrial base, assemble a special technical team, and circumvent existing Air Force rules and procedures to achieve the development goal. By establishing the Western Development Division as the administration's agent within the Air Force and placing it in California, he also established a large amount of physical distance between the organization responsible for developing ballistic missiles and the Air Force's traditional development and procurement commands. Finally, and importantly, the Gillette procedures allowed WDD to nearly completely bypass the uniformed leadership of the Air Force.[55] WDD became an organization directly responsive to the civilian leadership of the Air Force. Although WDD was officially a part of the Air Research and Development Command on paper, in reality it was practically a separate organization entirely. WDD officers did not wear Air Force uniforms, did not report through the normal chain of command, and did not operate by the normal rules of the Air Force bureaucracy.[56] The goals of the principal were thus undiluted by the time they reached the people who actually implemented them.

President Eisenhower considered the "end runs" that the uniformed service chiefs made around him directly to Congress to be tantamount to insubordination.[57] Therefore, when there was a mission that the Air Staff seemed reluctant to pursue, Eisenhower essentially cut them out of the equation. He created his own responsive bureaucracy within the Air Force. In his classic study of the ICBM, Edmund Beard noted this even while discussing the ICBM program in terms of bureaucratic politics. He referred to the WDD

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[55] Lonnquest and Winkler, *To Defend and Deter*, pp. 43–44.

[56] The lack of uniforms is one of the more surprising aspects of WDD. It is readily apparent from contemporary photographs of the time. See, for instance, Dwayne A. Day, John M. Logsdon, and Brian Latell, *Eye in the Sky: The Story of the CORONA Spy Satellite Program* (Washington, DC: Smithsonian Institution Press, 1998), p. 107. The men depicted in the photograph were mostly military officers working on the satellite reconnaissance program at WDD and like their ICBM counterparts, showed up to work in civilian attire. What this demonstrates is how separated the operation was from the traditional military.

[57] Lawrence J. Korb, *The Joint Chiefs of Staff* (Bloomington, IN: Indiana University Press, 1976), p. 11.

decision as "skirting the bureaucracy."[58] By this he meant avoiding the red tape and regulation and procedures that slowed down Air Force development. But it *was a bureaucracy* that ultimately carried out the presidential directive to build the ICBM, just a different bureaucracy than the one previously in existence.

As noted in earlier chapters, the traditional interpretation of structure consists of essentially two things: the number of issues an agent addresses and the rules by which it operates. Both were controlled in the ICBM case. Unlike ARDC, WDD was single-mission and did not compete for resources with other Air Force programs. It also had vastly streamlined communications channels and operating procedures. All of this was done to facilitate both success and control by the executive branch. At the same time, there are indications that one of the classic problems of agent control—the information asymmetry problem, affected Congress more than the president.

What was most important to the principal was success. When Gardner, acting on behalf of Eisenhower, Wilson, and Talbot, essentially created a dedicated agency for building the ICBM, he was primarily concerned with accomplishing the mission. The goal was not simply building an ICBM *eventually*—one could argue that the previous arrangement under Air Research and Development Command would do that—the goal was building an ICBM *in significantly less time than ARDC projected.* Gardner did not want a *possible* ICBM by 1964, he wanted a *definite* ICBM by 1960 or sooner. As long as the program stayed on schedule, Gardner and his successors had no interest in interfering with it, even if they believed they knew less and less of the specifics as it progressed.

The ICBM should have been an example of a classic case of bureaucratic politics. It was an important and big program with high stakes. It should have become a major battleground for the senior Air Force leadership, which naturally (according to the tenets of bureaucratic politics theory) would have wanted to be closely involved in the execution of

[58] Beard, *Developing the ICBM*, chapter six.

so important a program. The ICBM also posed a threat to the traditional interests of the Air Force, because ballistic missiles offered an alternative to manned strategic bombing. But the ICBM was *not a case of bureaucratic politics*. Top Defense officials, acting on behalf of the president, intervened to develop a new weapon system and managed to get the bureaucracy to do their bidding successfully. The ICBM therefore meets a critical test proving that principal agency can be used to explain national security weapons acquisition.

The Case of the IRBM

At the same time that the ICBM was being developed, the United States also began development of an intermediate range ballistic missile (IRBM). Like the ICBM, this development effort was also technically successful. But the president ultimately considered it to be less satisfactory, primarily from a political standpoint. It was messy and time consuming, requiring attention from him that he would have rather given elsewhere. The explanation for the differing degrees of success of the ICBM and the IRBM programs lies with the way they were conducted.

The case of the IRBM demonstrates that structure plays a role in the success of a mission, but that the benefits of structure can also be diluted if the principal is not careful. The structure of the IRBM development was not as closely controlled as it had been for the ICBM. In essence, the president simply selected existing organizations for the task and did not pay close attention to how their interactions might undercut their structures and affect their ability to accomplish the mission successfully. What the case also demonstrates is that accomplishing the mission is not the only consideration for the president. Instead, accomplishing the technical mission and doing so with minimal present and future political cost is also a primary goal for all endeavors.

Introduction

The U.S. Army after World War II inherited much of the German ballistic missile program through an effort known as Project Paper Clip.[59] For many of the immediate post-war years Army ballistic missile research consisted primarily of launching the dozens of captured V-2 rockets and training American engineers to design their own rockets. Only by the early 1950s did the Army begin to build some of its own rockets, eventually developing the Redstone. The Redstone, for all intents and purposes, was a highly modified V-2. It utilized American-made components, but it was a relatively short-ranged and unambitious missile.

The Army's development of ballistic missiles from 1946-1953 occurred without the attention of high-level authorities. Officials in both the Truman and Eisenhower administrations paid little attention to developments in the ballistic missile field. Further, no range limit on ballistic missiles had ever been given to the Army by national authorities. The service was thus constrained only by technical concerns and its self-defined limits of strategy (i.e. did the Army want to use missiles in support of ground forces relatively close to the battlefield, or did it want to strike deep within the enemy's territory?).[60] The initial range of the Redstone missile was set at 465 miles, but it was adjusted downward due to technological issues (mainly the size of the warheads available at the time). This adjustment was *not* due to roles and missions issues (i.e. a desire to separate Army and Air Force missile efforts), only technical issues.[61] The Army saw no need for a longer-range weapon, not even to compete with the Air Force. In fact, the Army had proceeded with most of its early ballistic missile development without any direction or intervention from the Office of the Secretary of Defense or the National Security Council. And unlike the Air

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[59] Lonnquest and Winkler, *To Defend and Deter*, p. 21.
[60] Armacost, *The Politics of Weapons Innovation*, p. 83.
[61] Ibid.

Force, the Army *was* willing to sacrifice performance requirements in return for faster development of a usable weapon.

The Army's research in ballistic missiles stemmed from a 1944 directive that granted it responsibility for developing surface to surface missiles that were non air-breathing. This directive gave the Army Air Forces responsibility for developing air-launched missiles and air-breathing surface to surface missiles. But even after the creation of the U.S. Air Force in 1947, the Army cited the 1944 directive to bolster its own case for development of ballistic missiles.[62] The Air Force, which was initially reluctant to spend money on ballistic missiles anyway, was content to allow the Army to continue its work on shorter range weapons while retaining its own right to eventually develop an ICBM.[63] The Air Force's cancellation of Project MX-774 in 1947 essentially ended its early work on weapons that could evolve into a medium range ballistic missile. And, as already noted, it had rejected proposals for ballistic missiles of anything less than intercontinental range several times in the early 1950s. Thus, from 1946-1955, there were no programs for intermediate range ballistic missiles—weapons with ranges of several thousand miles. There were the Army's short-range missiles and the Air Force's long-range ICBM, but no weapons to cover the gap in between. In the early to mid 1950s, neither the Air Force nor the Army had an interest in filling the gap. Although they both conducted research on ballistic missiles in general, there was no open rivalry between the two services for their development.

Presidential Intervention

In January 1955 the Scientific Advisory Committee, which advised the Pentagon and the White House on the use of advanced technology for defending the United States,

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[62] Lonnquest and Winkler, *To Defend and Deter*, pp. 21
[63] Ibid., pp. 21-23.

urged the Air Force to develop a Tactical Ballistic Missile (TBM). General Schriever, then in charge of Western Development Division and responsible for developing the ICBM, opposed the recommendation out of concern that it would divert attention and resources from the ICBM program. Instead, Schriever felt that a derivative of the Atlas should eventually be developed for the TBM mission (i.e. the TBM would essentially come *after* the ICBM was developed).[64]

In March 1955, the Technological Capabilities Panel (TCP), which had been specifically chartered by Eisenhower to advise him on defending against the threat of surprise attack, strongly endorsed the idea of an Intermediate Range Ballistic Missile (IRBM), stating that it would be "much easier and have much greater assurance of success." The TCP argued that an IRBM could therefore be developed faster than the ICBM then in production.[65] The study participants viewed the IRBM essentially as a stopgap weapon, capable of filling the gap until the longer-ranged ICBM came along. The IRBM could be built largely with existing equipment. Furthermore, due to its shorter range it would not present as risky a development challenge as the ICBM.[66]

The IRBM recommendation was made in the context of the overall development of the ICBM. It was not really a technical shortcut to aid in the *development* of an ICBM, but a technical shortcut to achieve early *operation* of ballistic missiles. It also represented a revision of the earlier arguments made by a select few in 1953 over the development of the ICBM. By relaxing the performance requirements of the missile, it would be easier to build and could be deployed faster. The Air Force had rejected these proposals earlier on.

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[64] In February the United Kingdom contacted the United States expressing an interest in a TBM. But U.S. policy concerning the sharing of atomic energy information—the UK had been cut off from American atomic weapons research in 1946—was considered a major stumbling block.

[65] Beard, *Developing the ICBM*, p. 197.

[66] Another reason why the IRBM was considered to be an easier and more achievable weapon was because of the slower reentry speed of its warhead. This lowered the intensity of atmospheric heating, which was considered by many scientists and engineers at the time to be one of the major technical hurdles that needed to be overcome with ballistic missiles. Armacost, *The Politics of Weapons Innovation*, p. 51.

Now that the Air Force was already committed to the ICBM, a national level advisory panel created by the President was recommending that this smaller step be taken as a stopgap measure instead of a developmental step. It provided insurance.[67]

In November 1955, Secretary of Defense Wilson directed *both* the Air Force and the Army to develop separate IRBMs. The Air Force weapon was labeled "IRBM No. 1" and the Army weapon was labeled "IRBM No. 2."

There were two elements to Wilson's decision. The first was approval of an IRBM to serve in an interim role until the ICBM became available. The second was the decision to develop two similar systems simultaneously by two different service branches. The idea behind this decision was essentially to "cover all bets" and ensure that a usable weapon emerged. By having the Army and the Air Force compete, Wilson felt that the country was assured of getting at least one working weapon. Wilson hoped that when time came to determine which missile would actually enter production, one weapon would be so obviously superior to the other that his decision would be easy.

Wilson's decision, unlike the earlier decision on the ICBM in 1954, was not very focused. The dual development decision was not popular with Wilson's subordinate, Trevor Gardner. Gardner later stated that "We need to be more decisive and place our bets with more accuracy. Having a whole family of ballistic missile programs not only slows the programs down, but it is wasteful of national funds."[68] Instead of getting one weapon, the country eventually ended up with three (the third being the Polaris, which emerged from the joint Army-Navy cooperation). Wilson's decision was even more dubious when one considers that both the Air Force and Army missiles utilized the same engines. Thus, there was little that was actually different about them, but the management task was

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[67] It is also important to note that by the time this decision was made, the ICBM program had been underway for almost a year and a half. Thus, the "interim" missile was getting a late start. It is therefore hard to compare the IRBM program with the proposals for a medium range missile made in 1953.
[68] Senate Committee on Armed Services, *Airpower Hearings*, 1956, p. 1117.

doubled, as was the amount of information on the programs that could leak or otherwise reach Congress.[69]

Wilson's decision to build both an Air Force and an Army IRBM was not made because of external (i.e. congressional) pressure. He had many internal justifications for choosing both proposals instead of selecting only one. Each weapon represented not only a different design and development organization, but a different set of engineering assumptions and a different approach to difficult problems.[70] Second, there was mistrust within DoD of the Army's Huntsville missile development group and its German engineers, who only a decade before had been enemies of the United States. Although they were the logical candidates to develop an IRBM, nobody in the Pentagon was sure that the Germans could be trusted.[71] Third, Wilson felt that if either approach began to appear obviously superior to the other during the development phase, the inferior design could be abandoned. Fourth, it was generally desirable to further broaden the industrial base for missile and space programs.[72] Finally, there were domestic political concerns—two programs meant twice as much constituency support and hence more support from Congress.

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[69] James S. Coolbaugh, "Genesis of the USAF's First Satellite Programme," *Journal of the British Interplanetary Society*, August 1998.

[70] The different development approaches to the missiles were also significant. When the Air Force proposed its thin-skinned Atlas ICBM which obtained structural strength through pressurization, Army engineers who, unlike their Air Force counterparts had actually built ballistic missiles, argued that the approach was risky and unlikely to work: the thin-skinned missile would come apart during maximum aerodynamic pressure in flight. The traditional Army approach was to build the missile much sturdier. There was also a fair amount of uncertainty about the technical competence of the two different design and development organizations. The Air Force had not inspired confidence in the Pentagon with its work on the cruise missiles and many people in DoD did not necessarily recognize that Atlas was being built in an entirely different way by different people. In contrast, the Army was considered by many to be too conservative in its design approach. It was known for taking incremental steps and building rockets essentially like tanks. Some critics said that the Army would essentially build nothing more than an enhanced V-2 rocket.

[71] This distrust was particularly acute in the Air Force. Von Braun had obliquely approached the Air Force in the 1950s about joining that service's ballistic missile development program and was bluntly turned away. James S. Coolbaugh, "Genesis of the USAF's First Satellite Programme."

[72] Armacost, *The Politics of Weapons Innovation*, pp. 70-71.

Wilson's decision was supported by Eisenhower's statements and actions concerning both the ICBM and IRBM programs. Eisenhower himself was also convinced of the urgency of the need for ballistic missiles.[73] He thought that psychologically the IRBM had great value, whereas militarily it was equivalent to the ICBM for only a short time.[74] In mid-1955, Eisenhower had ordered the acceleration of the Atlas and also authorized the Titan missile as a backup option.[75] In light of this decision, directing the Army to build an additional IRBM did not seem like such an unprecedented step.

Program Results

Secretary of Defense Wilson made his decision in November 1955. The two services moved quickly to comply. In February 1956 the Army established the Army Ballistic Missile Agency (ABMA) at the Redstone Arsenal to develop its IRBM, which it named the Jupiter.[76] ABMA was specifically developed at the Army's initiative, despite the fact that it was likely to absorb a large percentage of Army R&D funding. The Air Force added its IRBM program, which it named Thor, to the activities at Western Development Division.

One result of these decisions was that the structural factors that had been carefully controlled for the ICBM—the single-mission focus, the streamlined hierarchy, and information control—were diluted for the IRBM. One of the purposes of structural control is to establish an agent that will continue to handle future tasks in a similar manner. WDD had been developed into a highly-efficient, focused, single-mission organization that reported through a highly vertical hierarchy. Thor tended to dilute these aspects not because it was an additional task, but because the Army program negated many of the

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[73] Ibid., p. 53.
[74] Dwight D. Eisenhower, *Mandate for Change*, (Garden City, NY: Doubleday, 1963), p. 457.
[75] Armacost, *The Politics of Weapons Innovation*, p. 53.
[76] Lonnquest and Winkler, *To Defend and Deter*, p. 262.

attributes that had been sculpted into the WDD agent. Although there were good hierarchical relationships with both WDD and ABMA from the upper reaches of the Department of Defense, there were now *twice* as many communications lines to maintain and monitor. And the rivalry between the Air Force and the Army increased information flow to Congress, which the administration did not want second-guessing its decisions. Both the Army and Air Force began leaking documents which supported their positions, creating a perception of a fierce rivalry between them that was bad for national security and increased the costs of monitoring by the principal.[77]

The result was that the cost of managing the IRBM program was higher than the ICBM. Unlike the ICBM, the president could not simply mold the agent and turn it loose with only limited monitoring. Secretary Wilson had to keep returning to the IRBM issue again and again because of the rivalry between the Army and the Air Force, and Wilson had to keep Eisenhower apprised of these developments as well. There is ample evidence of this in the existing files from the time period—whereas the ICBM program was higher-priority, there are more memos and meeting records involving disputes over the IRBM because of its troubles. It clearly required more administration managing than the ICBM due to the inter-service rivalry problem.

General Schriever had initially opposed the mid-ranged missile program as an unnecessary diversion, but soon transferred the IRBM program to his control to ensure that the ICBM received the proper priority.[78] This was no guarantee, however. In December 1955, the IRBM was granted secondary priority within the Air Force behind the ICBM. Only a month later, a directive to the WDD assigned both programs equal priority and stated that in the event that the two programs came in conflict, headquarters was to be notified. This was what Schriever had been worried about nearly a year earlier—that the

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[77] See Armacost for details, particularly chapters 3 and 4. Armacost, *The Politics of Weapons Innovation.*
[78] Armacost, *The Politics of Weapons Innovation,* p. 60.

IRBM program would interfere with the ICBM program. Schriever quickly requested a clarification and General Nathan Twining, Chief of Staff, noted that if the two programs conflicted, the ICBM was to take priority.[79]

The Army began flight tests in September 1955 using its Redstone missile. By September 1956 it had fired a test missile 3,300 miles over the Atlantic. By May 1957 a prototype missile flew 1,150 miles, which the Army hailed as the first successful IRBM launch. Production weapons were available by August 1958.[80] The Air Force's Thor did not achieve its first successful flight until September 1957.[81] The first production weapon did not become available until December 1958.[82]

Despite the fact that, as planned, production Thor and Jupiter missiles were available before the Atlas ICBM became operational, they had to face an additional hurdle that the ICBM did not. Due to their shorter range, the IRBMs had to be based overseas, on foreign territory. Negotiations to achieve this did not go as smoothly as the United States planned and several delays pushed back the initial operational capabilities for both Jupiter and Thor. The first Thor squadron became operational in June 1959 and was quickly followed by three more.[83] Jupiter squadrons became operational in Italy in 1960 and Turkey in 1962.[84] But by 1963, the squadrons were clearly redundant due to the advent of the Atlas. Furthermore, they were vulnerable. All of them were withdrawn by summer 1963.

Both programs produced operational missiles in extremely short times (the Thor had completed its first operational squadron in 3.3 years).[85] Both also bridged the gap before the Atlas ICBM became fully operational. But they also presented ancillary

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[79] Beard, *Developing the ICBM*, p. 198.
[80] Lonnquest and Winkler, *To Defend and Deter*, p. 264.
[81] Ibid., p. 272.
[82] Ibid.
[83] Ibid., pp. 272-273.
[84] Ibid., p. 265.
[85] Beard, *Developing the ICBM*, p. 201.

problems that became a major headache for the administration, such as the struggle over operational control and the complications over basing rights.

Eisenhower viewed the IRBM program essentially as a problematic success, despite the fact that technically both missiles had achieved their goals. The reason is that they only barely achieved these goals (an "interim" weapon has limited utility if it arrives too late) and they created other headaches for the administration in the process—mainly, congressional meddling. Eisenhower and his team did not work as hard at structuring the IRBM program as they had for the ICBM and the results reflected this. It achieved technical success but was politically less successful. The president wanted a wind-up toy that would work without requiring significant intervention by himself or his aides. He did not get this with the IRBM. If Wilson had only selected one or the other agent, he still would have gotten his missile and would have eliminated the rivalry that presented so many headaches.

Agency Design as a Means of Principal Control

Did presidential intervention in the IRBM example work? Did it help to ensure that the military bureaucracy would develop the required weapons system in the required time? How and why did the president shape the program the way that he did? Was the president, as principal, able to exert control over a bureaucracy and achieve his policy goals?

Unlike the earlier ICBM decision, Wilson's IRBM decision was much more traditional in its approach to weapons development. Rather than create a tightly focused principal agent relationship to accomplish the mission, he gave the mission to existing organizations without explicitly stipulating how they would accomplish it. He hoped that the competition between the two existing services would cause them to achieve the desired results. This was a vague strategy for implementing the chosen policy. What Wilson essentially did was create a form of meta-structure over the two services. By forcing them to compete over the same mission, he essentially forced them to work as hard as possible

against each other, but still within certain constraints (such as time deadlines—i.e. before the ICBM became operational). Their competition spilled out into the public realm, creating problems that had to be addressed.

From Eisenhower's view, the approach used for the IRBM was messy and inefficient; he clearly regretted not handling the program differently.[86] The reason was that Wilson essentially undercut the structured agents under his control. General Schriever could, to some extent, use his aura of managerial effectiveness to keep Congress and the rest of the Air Force at bay and simply charge ahead with development. But the Army could and did take its complaints to Congress, which did not interfere with the program managerially, but made it more difficult for Wilson to reverse his decision and shut down the Jupiter program, particularly after Sputnik. Further, Army participation raised the stakes for the Air Staff, which took a greater interest in the IRBM program out of concern that the Air Force might lose this mission to its rival service. Thus, while the Air Staff had an incentive to *not* meddle in ICBM issues (to avoid angering the president), it *did* have an incentive to meddle in IRBM issues (to preserve its turf from army encroachment). The Air Staff did not meddle often, but it happened more than with the ICBM. The Army, with its tenuous position regarding ballistic missiles, not only tried harder technically, but politically as well.

Wilson's decision also had another effect—it required constant revisiting. Instead of simply establishing a bureaucratic machine that would run on its own like WDD, he built

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[86] Eisenhower, *Mandate for Change*, p. 459; a particularly telling comment was made by Eisenhower in a classified meeting in October 1957 after he learned of yet more public fighting over the IRBM: "The President went on to say he sometimes wondered whether there should not be a fourth service established to handle the whole missiles activity." Brigadier General A.J. Goodpaster, "Memorandum of Conference with the President, October 11, 1957, 8:30 AM," October 11, 1957, Ann Whitman File, DDE Diary Series, Box 27, "Oct 57 Staff Notes (2)" Dwight D. Eisenhower Library. Eisenhower was also distressed by the tendency of military leaders to talk about missiles as if they were involved in a race. See: Brigadier General Andrew Goodpaster, "Memorandum of Conference with the President, (following McElroy swearing in) October 9, 1957," Office of the Staff Secretary: Records of Paul T. Carroll, Andrew J. Goodpaster, L. Arthur Minnich and Christopher H. Russell, 1952-61, Subject Series, Department of Defense Subseries, Box 6, "Missiles and Satellites," Dwight D. Eisenhower Library.

problems into his bureaucratic choice, assuring that they would not go away. He guaranteed that problems would require his or the president's attention, rather than solve themselves at lower levels. Instead of one decision to develop the weapon, Wilson was forced to make several more concerning production and operation, and each time these came up they became points of contention with the Congress. Ultimately the two programs ended up conflicting with each other. No matter how much money was provided to the various ballistic missile programs, the development capability of the United States to produce them—measured in engineers and material available—was ultimately finite and its limits were being reached.

Rather surprisingly, Congress never directly interfered with IRBM development or even altered administration decisions despite the increased motivation for them to do so provided by the dual production decision. But the threat that Congress *might* interfere made Eisenhower and other administration officials uneasy and restricted Eisenhower's ability to direct the program. Congress was critical of the situation that the administration created, and this raised the possibility that it would intervene to correct it.[87] The fact that it did not was little consolation to the president. What he wanted was a program that operated smoothly and did not threaten his political capital for other tasks.[88]

Despite the bureaucratic messiness that followed the dual development decision, the administration still managed to get two military bureaucracies to respond to its policy goals *when they had not shown a previous inclination to do so*. Before the high-level TCP report in early 1955 and later Wilson's November 1955 decision, neither the Air Force nor the Army had an interest in developing an IRBM. After Wilson gave his order, both

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[87] Armacost, *The Politics of Weapons Innovation*, p. 132.

[88] As Michael Armacost noted, members of Congress already had reasons to criticize the administration on the IRBM. But the decision to develop two missiles gave it even more. See: Armacost, *The Politics of Weapons Innovation*, pp. 254-255.

bureaucracies proceeded with development as rapidly as possible and achieved the president's primary goal—deployment of an IRBM before the ICBM.

Conclusion

There are several puzzles about the ICBM and IRBM developments that have not been explained by past applications of the bureaucratic politics model to these cases. One question is why, if bureaucratic politics is prevalent in weapons acquisition, the ICBM ultimately proved to be so successful. Why didn't the program continue to languish like it had until 1953? The explanation provided by Beard in his classic study of the ICBM was that Trevor Gardner was able to "skirt the bureaucracy" in developing the ICBM. But this is essentially an argument that undercuts the bureaucratic politics model by claiming that the model applies except when it does not apply. In other words, Beard's argument cannot be used to support a bureaucratic politics model. Thus, the successful development of a weapons system could only occur when bargaining and compromise are somehow negated.

There is a puzzle concerning the IRBM as well—initially neither the Army nor the Air Force was all that interested in the mission. For various reasons they became interested in developing the IRBM. What explains why the services changed their minds? Why did they not simply continue to oppose the weapon and try to prevent it from occurring?

Another puzzle is how come, as Armacost argued in his study of the IRBM, the rivalry between the Army and the Air Force over the shorter range missile did not result in the entire program falling apart. As Armacost admitted, both weapons were developed on time and both were successful. Problems resulted from the controversy, but the controversy did not affect the development of the weapons. Despite all of the perceived problems, they still achieved their stated goals. By arguing that the IRBM was a case of bureaucratic politics at work, Armacost lost sight of the forest for the trees—the missiles still worked.

Clearly there was intervention by the president and his proxies that changed the direction of the ICBM program in 1953-54. Clearly the president and his designated officials took specific actions modeled on the Manhattan Project which were later copied for other programs. Clearly these actions had some kind of effect.

What is most striking about these cases is that two large bureaucracies were made to achieve goals that they did not initially embrace. The Air Force did not want to develop the ICBM, as proven by its years of neglect and deliberate antagonism. Nevertheless, *it did develop the ICBM.* Furthermore, it maintained ICBMs as part of the strategic triad despite institutional opposition. Strategic bombers dominated Air Force thinking and internal politics for decades. (Their primacy was ultimately usurped by tactical aircraft during the Vietnam War.[89]) Ballistic missiles were never the center of Air Force culture, as demonstrated by the fact that no general who specialized in missiles ever made Chief of Staff. But the Air Force carried out the missile mission despite its institutional bias against it. Similarly, the Army valued tanks and infantry. Nevertheless, it developed a substantial missile capability and later showed a reluctance to lose it. This was principal agency at work—the principal establishing goals for an agent and the agent responding and achieving those goals.

But in these cases the principal did not simply give a new mission to an agent and expect the agent to be successful. Rather, the principal structured the agent in order to increase the chances of being successful. The Western Development Division was significantly different from existing weapons acquisition bureaucracies. Its internal structure was virtually unprecedented, modeled on the experience with the Manhattan Project more than a decade earlier. What the president wanted was an agent that would respond to his direction and pursue his goals, not its own goals or the goals of a competing

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[89] See Mike Worden, *Rise of the Fighter Generals: The Problem of Air Force Leadership* (Maxwell AFB, AL: Air University Press, 1998). See also Builder, *The Icarus Syndrome.*

principal. He achieved this by creating a single-mission agent that reported to him, bypassing the traditional chain of command. He essentially left this structure in place for the IRBM development, but unintentionally mitigated its effectiveness by involving a second agent in the same task.

At the same time, while Eisenhower controlled both the number of missions the agents conducted and the hierarchical relationship he had with the agents, he made relatively less effort to directly control the amount of information that the agents provided to the Congress. It was the agent that ultimately did this, on his behalf. The president certainly enjoyed an information advantage compared to Congress, as he almost always does due to the fact that his team members occupy key positions within the agents. But there were no clear active efforts directed by Eisenhower at restricting information about the missile programs from Congress. For instance, the effort was not classified at a high level.

The special organizations that Eisenhower created were a prerequisite of success and were later emulated by others.[90] Ironically, although the classic bureaucratic politics explanations fell short of the mark in explaining the success of these programs, they did recognize that changing the agents was important for their success. As Edmund Beard noted: "The strategic bomber [of the 1930s-40s] and the ICBM both illustrate that a revolutionary new weapon may be subordinated to outdated doctrine or outdated methods if it is not assigned to an agency designed to foster it"[91] The bomber could only be given

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[90] The WDD management framework was essentially copied by the Navy for its Polaris Special Projects Office (SPO). Both WDD and the SPO operated under special rules that differed substantially from traditional weapons development and procurement for their respective services. They had greater authority to requisition funds, materiel and personnel than other weapons programs. They also had streamlined contracting authority—the ability to ignore the red tape and other slowdowns that led to drawn out procurement in other weapons programs. The WDD operated under the Gillette Rules, which were strongly opposed by the people they bypassed. What both of these organizations required, however, was top-level cover for the actions they took. It was only the knowledge that running afoul of these organizations could be detrimental to one's career that scared away those interested in opposing them. But as Harold Sapolski has noted in regards to the Polaris, this is a resource that is best not overused. If the organization has to resort to its trump card of high level access too often, this presents the image of weak and ineffective leadership and may lead to questions from above. The most effective use of the option is its non-use.

[91] Beard, *Developing the ICBM*, p. 235.

high priority in the military, Beard argued, when a bureaucracy (the Army Air Forces) was created to develop it. The same was true for the ICBM. A bureaucracy, the Western Development Division, was created within the Air Force. It was given special attributes, such as a singular focus and unique operating rules, that were designed to help the president, isolate the Congress, and enable the agent to achieve the president's goals. The creation of these agents was the result of the principal's action.

But Beard's explanation was limited in how much it could explain. In the case of the ICBM, Eisenhower may have "skirted the bureaucracy" to get the weapon built initially, but the development organization was eventually absorbed into the Air Force, changing the organization as well. Thus, the ballistic missile example satisfies one of the major criteria for the principal agent model: agency performance varied according to principal preferences—and did so with such dramatic effect that the agent attempted to internalize many of the lessons of the experience.[92]

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[92] B. Dan Wood and Richard W. Waterman, *Bureaucratic Dynamics* (Boulder, CO: Westview Press, 1994), p. 22.

Chapter 6
Aerial Reconnaissance: The Case of the U-2

After the end of World War II, the United States found itself facing a new adversary about which it knew little. It developed an extensive intelligence apparatus to gather information on the Soviet Union. Eventually, one of the most important developments was strategic aerial reconnaissance, which provided a flood of information on all aspects of Soviet military power.[1] After several false starts, overhead reconnaissance debuted rather rapidly during the 1950s with the advent of the U-2 spyplane. The U-2 development was highly successful. But from a bureaucratic politics standpoint, it should not have been successful. The aircraft was developed by a bureaucracy that had no aircraft development experience. Furthermore, the mission had been taken away from the Air Force, an action that should have led to bureaucratic rivalry. Nevertheless, the plane's development eventually became a model for future efforts.

The U-2 development effort shares some of the characteristics of the ICBM program that was operating at the same time. The U-2 was developed by a single-mission organization that had a streamlined chain of command. Therefore, two aspects of structure were carefully controlled.

There was also a third aspect of structure that was introduced by the president during the U-2 program. This was strict information control. The program was highly classified and information on it did not leak during its development. The U-2 case demonstrates that structure was used by the president to make it difficult—almost

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[1] In internal histories and assessments, the CIA refers to the U-2's information as "revolutionary." See, for instance, Gregory W. Pedlow and Donald E. Welzenbach, *The CIA and the U-2 Program* (Washington, DC: Central Intelligence Agency, 1998).

impossible—for anyone other than him to affect decisions concerning the development of airborne strategic reconnaissance.

The goal of the president in playing the game of politics is not simply to play well enough to win (i.e. implement his policies in the way he wants) but to change the rules in order to increase his chances of winning—to "stack the deck" in his favor. In the national security field one of his methods of achieving this is through classifying the activity. This directly changes the rules by which policy is implemented and it tips the relative powers of the executive and legislative branches of government decidedly in the president's favor. Classification is a power that is essentially extra-constitutional: nowhere has it been granted in the Constitution and rarely has it been found to be constitutionally linked, yet it has nevertheless become a common tool of presidential politics.[2] The U-2 illustrates how this trend started.

The Origins of Peacetime Strategic Reconnaissance

Aerial reconnaissance is an idea older than the airplane. Balloons were used for reconnaissance purposes as early as the Revolutionary War. Airplanes were used in this capacity during World War II, first for general scouting purposes and soon thereafter with the addition of simple cameras to return photos from behind enemy lines to generals in need of intelligence. As technology advanced, reconnaissance became more sophisticated and useful to military leaders. During World War II, aerial reconnaissance was used for both pre-attack intelligence (i.e. to identify targets for bombing raids) and post-attack assessment of damage (what eventually was labeled Bomb Damage Assessment or BDA). By the end

[2] Senator Moynihan notes that, other than the acts related to atomic energy, there is only one general statute pertaining to classification. Daniel Patrick Moynihan, *Secrecy* (New Haven, CN: Yale University Press, 1998), p. 60. Most classification is the result of decades of executive orders and presidential directives, not legislation.

of the war, aerial cameras were quite sophisticated, with the United States clearly leading in this field.[3]

Yet until the 1950s, aerial reconnaissance was an activity undertaken only during wartime. Although nations had long employed various espionage techniques during peacetime—everything from secret agents to interception of communications and code-breaking—aerial reconnaissance was not undertaken during peacetime. Indeed, there is no evidence that peacetime reconnaissance was even proposed in the United States prior to 1946. The Air Force trained to overfly enemy territory and take pictures, but did not intend to actually do so until hostilities began.[4]

Why this was so is not hard to understand. Aerial overflight was a provocative act; the same plane that took photos could theoretically also drop a bomb. Furthermore, the only aircraft capable of accomplishing such missions were military. In contrast, conventional espionage was often carried out by "civilian" organizations specifically established for the task. Spying by agents was a long-standing practice and although the country that found itself a target of such actions was not pleased, it was most likely undertaking the same actions itself, which placed limits on its outrage. Countries therefore established unwritten norms of behavior concerning espionage. Many human agents also operated under diplomatic cover in peacetime, which meant that if they were discovered, they were often simply expelled with a protest, rather than arrested or executed.[5] Thus, while exposing an espionage activity could be embarrassing and create tension, it was not

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[3] Bill Burrows, *Deep Black* (New York: Berkley Books, 1986), pp. 26-31.

[4] Germany did conduct covert overflights of Poland in the early 1930s, using a civilian aircraft equipped with an aerial camera. Later it conducted oblique reconnaissance missions (i.e. outside of territorial airspace) of France, Czechoslovakia, the United Kingdom and Russia. See: David Kahn, *Hitler's Spies: German Military Intelligence In World War II* (New York: Macmillan Publishing Co. Inc., 1978), p. 116; Jeffrey T. Richelson, *A Century of Spies* (New York: Oxford University Press, 1995), pp. 96-97. The United Kingdom also conducted overflights of Germany using civilian aircraft secretly equipped with cameras. See: Christopher Andrew, *Her Majesty's Secret Service: The Making of the British Intelligence Community* (New York: Viking, 1986), p. 35.

[5] As one intelligence expert pointed out to me, this is not practical. If countries went to war whenever they caught another country spying on them, there would be an awful lot of wars.

considered an act of war.[6] In the long, often sordid history of espionage, there are not many cases where a country used military force to retaliate against another country's act of spying.[7] It simply was not done.

Given the provocativeness of aerial reconnaissance, the military only endorsed sending in aircraft after hostilities had begun, not before, and then relying on reconnaissance mainly for assessment of damage to the enemy. This did not mean that the post-World War II U.S. Air Force completely ignored the subject of pre-attack intelligence. The Air Force did develop oblique aerial cameras for peering within an enemy's borders from outside its territorial limit (without much enthusiasm and only limited success). It also flew electronic "ferret" missions along the periphery of Russia to detect enemy radar transmissions.[8] But both of these missions were more focused at defending the Air Force's bombers during an attack on the enemy rather than choosing targets for that attack, or even assessing the enemy's preparations for war. These missions also avoided violating enemy airspace. The oblique reconnaissance and ferret missions were looking for enemy defending forces—fighter aircraft bases and surface to air missile sites—that would oppose any American bombers. They were not "strategic" in the sense of seeking out targets, although they did support the strategic bombing mission.

Despite the obvious provocativeness of such a reconnaissance mission, it could have been justified based upon then-current Air Force strategy and the nature of the strategic threat. The atomic bomb and systems for delivering it meant that tremendous destruction could be wrought on the American mainland as the opening act of a major war.

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[6] Spying has, on occasion, served as one justification for a declaration of war President Wilson sought a declaration of war against Germany in 1917 based upon charges of espionage, but it was not his primary justification and has never served as a primary justification for war. Daniel Patrick Moynihan, *Secrecy*, pp. 90-91.

[7] Examples to the contrary are the seizure of the intelligence ship USS Pueblo by North Korea in 1968, and the Israeli attack on the intelligence ship USS Liberty in 1967. However, in both of these cases, the attack was on the people actually doing the spying, not on the territory or forces of the nation that was conducting it.

[8] Paul Lashmar, *Spy Flights of the Cold War* (Thrupp: Sutton Publishing, 1996).

As a result, identifying and destroying an enemy's strategic forces very early in a conflict was of great importance. The evolving concept of preemptive war and a first strike required excellent pre-attack intelligence, which the United States did not possess in the early years of the Cold War.

Yet the Air Force was slow to recognize this. In part this was due to the prevailing strategy of massive retaliation and a focus on "soft" targets like cities. The Strategic Air Command's targeting planners felt that they knew where the major Soviet cities were well enough to find them and hit them with bombers. Therefore, at least initially, American nuclear strategy did not require extensive aerial reconnaissance.

Lacking specific direction, the Air Force was resistant to the introduction of new ideas and new ways of thinking. The Air Force, like all bureaucracies, tended to think linearly and incrementally in terms of existing methods and concepts. The Air Force had flown pre-attack reconnaissance missions before the invasion of Normandy ("pre-D-Day reconnaissance") but had done so while it was also engaging in all-out strategic bombing against Germany. It had conducted World War II reconnaissance largely in terms of Battle Damage Assessment and therefore it thought of Cold War reconnaissance in the same terms. Strategic bombing was the dominant mission of the Air Force. It is not surprising that the predominant view in the Air Force for over a decade after World War II was to use bombers as reconnaissance aircraft, while still employing them primarily in the bombing role.[9] But bombers were not well-suited to pre-hostilities reconnaissance due to their highly provocative nature and their vulnerability. Any aircraft flight would be provocative, but once the Air Force selected bombers for the general reconnaissance mission, it also

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[9] Michael E. Brown, *Flying Blind: The Politics of the U.S. Strategic Bomber Program* (Ithaca, NY: Cornell University Press, 1992), p. 151. Brown notes that the first production B-52s were poorly suited to the bombing role. The Air Force quickly relegated them to training and reconnaissance duties. It was also common for older aircraft to be given reconnaissance missions, thereby indicating where reconnaissance actually stood in terms of priority. They always got the substandard aircraft.

vastly reduced the possibility that it could actually use the aircraft for peacetime reconnaissance.

American military thinking in the Cold War was heavily influenced by the strategic surprise of Pearl Harbor. In many ways the "lesson of Pearl Harbor" was learned differently by the U.S. intelligence and military communities. For the military, the lesson was to always be prepared for an attack and be capable of surviving a surprise attack. Rather surprisingly, knowing the enemy's capabilities was not as important a priority for the military as it was for the intelligence community, for the military could simply assume a worst case scenario and plan accordingly. Doing so had institutional benefits; "worst case scenarios" justified a large and growing Air Force.[10] Thus the "bomber gap" of the 1950s was a perfectly understandable assumption on the Air Force's part: lacking good intelligence, the Air Force argued that the Soviets had built a large number of strategic bombers and the Air Force needed to do the same. The "missile gap" a few years later was due to the same factors. Better intelligence therefore posed an unspoken institutional threat to the Air Force, because it could demonstrate that large numbers of strategic bombers were unneeded.

For the intelligence community, as typified by the CIA, the lesson of Pearl Harbor was considerably different. The lesson was to know what the enemy's capabilities and intentions were *before* the onset of hostilities. If done properly, this could enable the country's leaders to avoid war, not simply survive attack. Few in the Air Force leadership accepted this view. They commanded the most powerful military force the world had ever

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[10] Accurate intelligence also posed an institutional threat to the military. For instance, the "bomber gap" of the mid-1950s was based upon poor intelligence of Soviet bombers and worst case scenarios. A single U-2 photograph, referred to as "the billion dollar photo" by Director of Central Intelligence Allen Dulles, proved that the bomber gap did not exist. Similarly, the "missile gap" of the late 1950s and early 1960s was also eliminated by strategic intelligence, undercutting the justification for large numbers of ICBMs and Polaris submarines. See Ernest R. May, "Strategic Intelligence and US Security: The Contributions of CORONA," in Dwayne A. Day, John M. Logsdon, and Brian Latell, eds., *Eye in the Sky: The Story of the CORONA Spy Satellite Program* (Washington, DC: Smithsonian Institution Press, 1998), pp. 21-29.

seen. They planned on winning wars. The idea that war needed to be avoided had not yet taken hold among the leadership.[11]

The Genesis of an Idea

The concept of peacetime aerial reconnaissance did not emerge with Air Force strategists in the Pentagon or Strategic Air Command, but with a few young Air Force officers and both civilian and military aerial reconnaissance engineers. The major defining event for them was the Project Crossroads tests of atomic bombs at Kwajalein Atoll in July 1946. Crossroads was important for strategic reconnaissance for two reasons: it brought together most of the country's reconnaissance experts, and it impressed upon them the tremendous destructiveness of atomic weapons.[12]

Lieutenant Colonel Richard Leghorn had been wartime commander of the Army Air Forces 30th Photographic Reconnaissance Squadron in Europe. He was involved in setting up camera equipment to record the upcoming atomic weapons test at Kwajalein. Previously, the United States had tested one bomb at Alamogordo, New Mexico, simply to see if it would work, and had dropped two bombs on Hiroshima and Nagasaki. The Crossroads test was intended to judge the destructive potential of the bomb against military targets—in this case discarded naval vessels moored near the blast point. The military therefore wanted extensive photographic documentation of the blast and its effects and sent virtually all of its photographic experts to the Pacific.

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[11] Although it is beyond the scope of this dissertation, the change in American military attitudes toward war since World War II is a subject worthy of extensive study, and strategic intelligence represents only one small facet of it. The American military eventually developed a similar, although not identical, approach to strategic intelligence as the civilian intelligence community, believing that it offered the opportunity to avoid conflict. Certainly, the most important aspect in the overall change in attitude was the role of deterrence—preventing a war from starting—and the awfulness of any possible strategic exchange. But by the 1980s and 1990s, it was not at all uncommon for American military leaders to be openly reluctant to use military force. Intelligence eventually came to be viewed as a way to avoid using force.

[12] Day, et. al., *Eye in the Sky*.

While preparing for the test, Leghorn read a summary report of the *United States Strategic Bombing Survey (Europe)*, which had been commissioned by the Army Air Forces to judge the effectiveness of strategic bombing of targets within both Europe and Japan.[13] Leghorn was particularly impressed by an otherwise bland section of the report that stated, "In the field of strategic intelligence," the United States needed "more accurate information, especially before and during the early phases of the war." The report concluded, "The combination of the atomic bomb with remote-controlled projectiles of ocean-spanning range stands as a possibility which is awesome and frightful to contemplate."[14]

Leghorn realized that the United States had no means of obtaining intelligence in advance of a potential atomic attack. Aerial reconnaissance was the solution to this problem and he discussed his ideas with anyone who would listen. The two atomic bomb tests at Crossroads only served to underscore the potential danger of an atomic attack. Everyone who witnessed the explosions was deeply shocked by the power of this new weapon.[15]

In December 1946, Leghorn spoke at the dedication of the Boston University Optical Research Laboratory (BUORL). A number of top Air Force officials attended. Leghorn stated that atomic attack would be extremely difficult, if not impossible, from which to recover. "Therefore," he said, "it obviously becomes essential that we have prior

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[13] The Strategic Bombing Survey was a very politicized study designed to justify a large Air Force. In the immediate post-War period, critics charged that the immense destructiveness of atomic weapons did not require a large Air Force or military. A small fleet of bombers with a few atomic weapons could accomplish the task. What the SBS attempted to prove was that strategic bombing during the war had been ineffectual at causing surrender. It therefore justified both the continued existence of large ground forces, as well as even more bombers. Gian P. Gentile, "A-Bombs, Bullets, and Morality: Using the Strategic Bombing Survey," *Air Power History*, Spring 1997.

[14] R. Cargill Hall, "Postwar Strategic Reconnaissance and the Genesis of CORONA," in Day, et. al., *Eye in the Sky*, p. 90.

[15] Walter Levison, who later would prove to be an important designer of U.S. reconnaissance cameras, also attended the Crossroads test and stated that he was impressed by the incredible power of the blast. He was also excited about the challenge of the photographic mission during the test, which was the most complicated ever undertaken, involving thousands of cameras taking hundreds of thousands of photographs of the explosion from all angles and aspects. It was, Levison has said, one of the defining moments of his life. Walter Levison, interview by Dwayne A. Day, November 16, 1995.

knowledge of the possibility of an attack, for defensive action against it must be taken before it is launched. Military intelligence is the agency for providing this information, and our national security rests upon its effectiveness, next to a sound international political structure."[16]

Airborne reconnaissance was the best way of achieving this intelligence, Leghorn stated, but it presented problems. Overflying another nation's territory without permission was a violation of international treaty and a form of military aggression. A state desiring to conduct such missions would have to obtain permission from the country it wished to overfly. Leghorn considered such permission to be highly unlikely. Thus, aerial reconnaissance would have to be conducted *without* the permission of the overflown country.[17]

This presented a dilemma: if overflying another country's territory was necessary for the gathering of vital intelligence, and if doing so was considered an act of aggression, how could the United States undertake such a mission without provoking the very war it was trying to prevent and prepare against? Leghorn offered a solution: if aircraft could be built to fly at very high altitudes and be camouflaged against visual and radar observation, then the United States could conduct overflight missions without the knowledge of the country it was overflying. In this one speech, Leghorn had therefore outlined both the problem (the need for strategic reconnaissance of an uncooperative potential adversary) and the solution (the application of new technology).[18]

Leghorn's speech did not have much effect on the Air Force's thinking, however. In December 1946, the United States was the only country possessing nuclear weapons. The threat of atomic attack seemed remote. The Air Force planned on fighting the next war in much the same way that it had fought the last one, except this time with much bigger

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[16] Hall, "Postwar Strategic Reconnaissance and the Genesis of CORONA," pp. 91-93.
[17] Ibid.
[18] Ibid, pp. 90-91.

bombs. For the next several years, Leghorn's words were ignored; he was ahead of his time. In the view of the Air Force, war was something to be fought, not avoided.

A few years later this began to change. The Soviet Union detonated an atomic device in August 1949, far ahead of U.S. intelligence estimates on when the Soviets would be capable of doing so. This had a startling effect upon strategic planners. It even prompted Lieutenant General Curtis E. LeMay, Commander of Strategic Air Command, to recommend that the United States employ strategic overflight reconnaissance to warn of Soviet preparation for a surprise atomic attack. But LeMay also proposed adoption of a preemptive war policy at the same time, which made his suggestions unpalatable. The Air Force was aware of the targeting and accuracy limitations of its bombers (a lesson that was mentioned in the Strategic Bombing Survey) and realized that they would be ineffective against anything smaller than city-sized targets. Air Force strategy was therefore determined in large measure by the perceived capabilities of its forces—since only cities could be targeted, only cities *would* be targeted. Since the Air Force leadership felt that it was largely knowledgeable about the location of major Soviet cities, the emerging concept of strategic overflight reconnaissance was not centered upon identifying targets as much as it was on identifying Soviet preparations for attack. The key indicator would be the massing of troops along the border with Western Europe. In other words, the Air Force still thought of aerial reconnaissance in terms of warfighting, not general intelligence collection, because warfighting was the Air Force's primary mission.

Additional tensions arose over the North Korean invasion of South Korea in June 1950. Although South Korea had not been an area of prime concern for the United States, many military and political leaders viewed the invasion as the opening act of World War III, preceding an invasion of Western Europe. This concern increased even more in

November 1950 when the Chinese entered the war and quickly decimated overextended American forces.[19] As tensions rose, the need for better intelligence became apparent.

In December 1950, Air Force Vice Chief of Staff General Nathan Twining briefed President Truman on the need for aerial reconnaissance of the USSR. Truman approved two reconnaissance flights, both in the eastern part of the country. In January 1951 this mission was assigned to a Strategic Air Command B-47B bomber, which was not yet available. The B-47B was selected because it was considered the fastest, and therefore least vulnerable, aircraft for the job.[20] The mission was scheduled for August, but was canceled when the aircraft was accidentally destroyed by fire.[21]

President Truman also approached the British about conducting strategic overflight reconnaissance missions of the USSR. He secured permission from British Prime Minister Herbert S. Morrison in spring 1951 and a special three-plane detachment was established within the Royal Air Force. Winston Churchill approved the first mission, which took place in April 1952, using modified American RB-45C bombers.[22]

After reports of the Soviet deployment of long-range bombers to Siberia, the Secretary of Defense and the Central Intelligence Agency recommended that a reconnaissance mission be undertaken in August 1952. Once again, a modified B-47B bomber was selected for the mission and flew a single mission in October 1952.

It had been four years since Leghorn's warning in December 1946 before members of the Air Force leadership advocated overflight and nearly five and a half years before a mission was actually flown—by the British. In that time, the Air Force had essentially produced nothing in the area of strategic reconnaissance, no doctrine, hardware, or even

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[19] See, for instance: Burton I. Kaufman, *The Korean War: Challenges in Crisis, Credibility, and Command* (New York: Alfred A. Knopf, 1986); T.R. Fehrenbach, *This Kind of War: The Classic Korean War History* (London: Brasseys, 1998).

[20] At the time, the only real threat to bombers was from jet fighters. If a bomber could be made fast enough, it would be safe from fighter aircraft.

[21] Hall, "Postwar Strategic Reconnaissance and the Genesis of CORONA," p. 95.

[22] Ibid.

studies. At a time when the Air Force was defining itself as the most forward-looking and technologically-oriented service branch, it had not embraced either Leghorn's warning of the threat, nor his solution. When the Air Force was finally ordered to fly such a mission, almost six years after Leghorn had proposed it, the service did not have a dedicated aircraft to conduct the mission and chose to modify a bomber instead. This was in many ways indicative of the dominance of Strategic Air Command in Air Force strategy. The service wanted bombers, not unarmed reconnaissance aircraft. Leghorn had suggested that a dedicated aircraft capable of *escaping detection*, not merely avoiding attack, was essential to the pre-hostilities reconnaissance mission; overflying foreign territory was naturally provocative if detected. A dedicated reconnaissance aircraft was needed, but the Air Force was only marginally interested in building one. Its recent experience with the overflights suggested that it needed aircraft that could fly much higher than the vulnerable B-47s it had used.

Strategic Reconnaissance Aircraft

In March 1953, responding to an internal requirement, the Air Force finally prepared a list of specifications for a new dedicated reconnaissance aircraft. It had to be capable of flying at 70,000 feet, have a range of 1,500 nautical miles, and carry a payload of 700 pounds. It also had to be in service by 1956.[23] This was a battlefield reconnaissance aircraft for use in wartime, not a peacetime strategic reconnaissance aircraft. The Air Force had no stated intention of using it for peacetime missions. In July 1953 the service issued six-month study contracts under the code-name BALD EAGLE. These contracts resulted in three submissions: a modified Martin B-57 bomber, the Bell Model 67, and the Fairchild M-195. The Martin aircraft was incapable of meeting the performance specs, particularly the 70,000 feet altitude requirement, but since it was a modified design,

[23] Pocock, *Dragon Lady*, pp. 4-7.

it was therefore the safest and the most likely to reach service without considerable problems—at least in theory. The Air Force approved it for limited production in June 1954 with first flight scheduled in approximately 12 months. The Fairchild M-195 was soon eliminated from the competition.[24] The Bell Model 67 was selected. Preliminary approval was granted in late May 1954, but work did not start on the aircraft until formal approval was given in September.[25]

Around the time of the original BALD EAGLE proposal, Clarence "Kelly" Johnson, the head of Lockheed Aircraft, had an idea for taking his lightweight supersonic fighter, the F-104, and equipping it with a large wing for high altitude reconnaissance operation. Johnson had recently heard that the CIA was interested in the Soviet missile test site at Kapustin Yar. At the same time, the CIA was expanding its photo-interpretation department and was expressing interest in its own reconnaissance collection capabilities to serve its increasing analysis capabilities.[26] Soon the CIA approached Johnson about his reconnaissance aircraft idea. Johnson discussed it with Trevor Gardner, the newly assigned assistant secretary for Research and Development, who encouraged him and told him to submit the idea to the Air Force.

The Lockheed proposal differed substantially from the Bell Model 67 being proposed for BALD EAGLE. Instead of the Bell aircraft's two engines, it was equipped with only a single engine. Even more importantly, it was built to a different set of design standards—a different philosophy. The Air Force designed aircraft for battle. Such aircraft had to be sturdy and have redundant control systems. The Air Force wanted its aircraft to be able to sustain damage and still be able to return to base. The Model 67 was

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[24] Pocock, *Dragon Lady*, p. 4; Pedlow and Welzenbach, *The CIA and the U-2 Program*, pp. 21-33.
[25] Jay Miller, *Lockheed's Skunk Works, the First Fifty Years* (Arlington, TX: Aerofax, 1993), p. 73, 78. September is generally considered to be the formal approval date for the X-16. Despite the fact that the company had good indications in May that it would be approved, Bell's precarious financial position probably meant that it did little actual work on the design until it received formal approval in the fall.
[26] Pocock, *Dragon Lady*, p. 5.

designed with this idea in mind, equipped with an armor-plated pressurized cabin, an ejection seat, and a strong main wing. But there was a price for this sturdiness: the aircraft sacrificed range, and more importantly, altitude. Thus, it would be detectable. The Lockheed team recognized this and proposed to sacrifice sturdiness to gain altitude and range. As a result, its design, called the CL-282, had wings which were bolted on to the side of the fuselage, instead of connected together through a main wing spar which ran through the fuselage. This not only lightened the aircraft significantly, but freed up additional space within the fuselage for camera equipment. The airplane was essentially a glider with an engine. Not only would the CL-282 not be able to take much damage from an enemy, but it would even be susceptible to damage from bad weather or high wind gusts. It would, however, fly beyond the reach of Soviet defenses and, it was believed, the range of Soviet radar. It was a radical approach to building an aircraft, and one which defied many lessons the Air Force had learned about aircraft design.[27]

The Air Force rejected Lockheed's proposal quickly.[28] The aircraft did not meet Air Force survivability requirements. It also was not equipped with the Air Force's J57 engine, then in large scale procurement and capable of operating in the thin upper atmosphere (a version of this engine had been selected by Martin and Bell to power both the RB-57D and Model 67 reconnaissance aircraft). The J57 would not fit in the Lockheed aircraft's fuselage.[29] In other words, the CL-282 would meet and in some cases exceed the primary performance specs, but not other Air Force specs—both stated and unstated. Having rejected the radical Lockheed proposal, in June 1954 the Air Force approved the Bell aircraft proposal for production and designated it the X-16. The aircraft had to be ready for first flight within 18 months. The "easier" B-57 design (designated the RB-57D) was expected to be flying in a year in order to serve in an interim capacity.

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[27] Pedlow and Welzenbach, *The CIA and the U-2 Program*, pp. 31-33.
[28] Pocock, *Dragon Lady*, p. 7.
[29] Ibid., pp. 5-7.

In September 1954, the Science Advisory Committee of the Office of Defense Mobilization (SAC-ODM), under orders from President Eisenhower, began a study of the problem of surprise attack.[30] Eisenhower had been impressed with a previous study by defense experts and wanted a group of highly-trained scientists to focus on how American technology could be applied to defense problems. One of the major reasons behind this study was the surprise the Soviet Union had achieved with its atomic bombs. But a more frightening development had been the explosion of a Soviet "boosted fission" bomb in 1953.[31] The main task of the Committee was "obtaining before it is launched more adequate foreknowledge of a surprise attack, should one be planned, [and] obtaining better knowledge of enemy capabilities."[32] This special group was headed by MIT President James Killian. The group became known as the Technological Capabilities Panel (TCP). (It was the same panel that recommended the development of the IRBM.)[33] The TCP included a special panel on intelligence, commonly referred to as Project Three.

In late October, the Project Three panel met with the Director of Central Intelligence, Allen Dulles, and the Secretary of the Air Force's Special Assistant for Research and Development, Trevor Gardner. They discussed the Lockheed aircraft proposal. Dulles was not enthusiastic about it. He did not want to involve the CIA in what he viewed as military projects, he felt that the agency should focus on human collection of intelligence, and he apparently thought that overflights were not "fair play" in the intelligence game.[34]

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[30] J.R. Killian, Jr., to General Curtis E. LeMay, September 2, 1954, Papers of Curtis LeMay, Box 205, Folder B-39356, Manuscript Division, Library of Congress, Washington, D.C.
[31] Richard Rhodes, *Dark Sun: The Making of the Hydrogen Bomb* (New York: Simon & Schuster, 1995).
[32] "The Report to the President by the Technological Capabilities Panel of the Science Advisory Committee, February 14, 1955, Office of the Staff Secretary: Records of Paul T. Carroll, Andrew J. Goodpaster, L. Arthur Minnich and Christopher H. Russell, 1952-61, Subject Series, Alphabetical Subseries, Box 16, "Killian Report-Technological Capabilities Panel (2)", Dwight D. Eisenhower Library.
[33] This was often referred to as the "Killian Report" by Eisenhower and others.
[34] Pedlow and Welzenbach, *The CIA and the U-2 Program*, p. 32.

Despite losing the Air Force's competition for the selection of a strategic reconnaissance aircraft, Kelly Johnson did not give up. He still had the ear of Trevor Gardner, who introduced Lockheed's CL-282 to the TCP intelligence panel in fall of 1954. Johnson soon met with Killian and the head of the intelligence panel, Din Land, to discuss the proposal. They were enthusiastic about it. The TCP intelligence group also learned about a RAND Corporation study of a nuclear powered reconnaissance satellite using a television camera. Although this would probably not violate airspace restrictions, it was a highly ambitious proposal and the panel members considered it too advanced to provide intelligence in a reasonable amount of time.[35] On November 18, in Washington, DC, both the Air Force X-16/RB-57D, and Lockheed CL-282 proposals were briefed to the Killian Committee by their respective proponents.[36]

Presidential Intervention

Both Killian and Land quickly brought the Lockheed proposal to the attention of President Eisenhower. Unlike the Air Force program, the CL-282 would be configured for strategic reconnaissance *prior* to hostilities—what was referred to as pre D-Day reconnaissance. Practically no consideration was given at the time to using the aircraft in a wartime role. Pre D-Day reconnaissance was a mission that the Strategic Air Command had previously considered and rejected.[37] Although SAC's specific reasons for rejecting the idea are unclear, the rejection was made precisely at the time that the BALD EAGLE

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[35] They did, however, recommend that the United States establish the framework to make later satellite overflight legal, which the Eisenhower administration did. For more on the "freedom of space" issue see: Dwayne A. Day, "A Strategy for Reconnaissance: Dwight D. Eisenhower and Freedom of Space," in Day et. al., *Eye in the Sky: The Story of the CORONA Spy Satellite Program*, pp. 119-142.

[36] Pocock, *Dragon Lady*, p. 7.

[37] General Thomas D. White, Chief of Staff, United States Air Force, to General Curtis E. LeMay, Commander, Strategic Air Command, August 20, 1953, Folder B-29239, Box 204, Curtis LeMay Papers, Library of Congress. The letter states: "In view of the comments expressed in your letter of 12 July 1953 on the subject of special pre-hostilities reconnaissance operations, the proposal will be dropped from further consideration by the Air Force."

proposals were under consideration by the Air Research and Development Command. It probably served to underscore to the X-16 program directors that their airplane was intended for battlefield reconnaissance and nothing else. This lack of support from the Air Force's most important command only lowered the relative importance of the mission for the Air Force leadership.

Killian and Land recommended to Eisenhower that the United States build the Lockheed CL-282. They also recommended that he give responsibility for its development to the CIA, not the Air Force. During a Thanksgiving Eve meeting at Eisenhower's ranch at Gettysburg, the President approved the CL-282 and placed it under the charge of the Central Intelligence Agency, whose director had not shown much initial interest in it. The program was soon code-named AQUATONE.[38]

Eisenhower gave the aircraft reconnaissance mission to the CIA for three reasons: one strategic, one bureaucratic, and one primarily political. First, he thought it would be less provocative if a civilian pilot, rather than a military one, flew the aircraft into foreign territory. Second, he wanted the product—the reconnaissance photographs—to be evaluated at the "national" level as opposed to being evaluated by the military services (which he felt had an incentive to interpret the intelligence in their own favor). Finally, he was concerned about not antagonizing the Soviets by pursuing a provocative program in the open. He was concerned that the military would pursue the program in a way that would only exacerbate tensions between the superpowers.[39] If the program was managed by the Air Force, it would naturally appear in the Air Force budget and would be known to

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[38] Hall, "Postwar Strategic Reconnaissance and the Genesis of CORONA," p. 101; Pedlow and Welzenbach, *The CIA and the U-2 Program*, pp. 39-45.

[39] Ibid., pp. 36-37; General Andrew Goodpaster interview by Dwayne A. Day, March 19, 1996. Goodpaster went to the White House in October 1954 as a Colonel and was promoted to Brigadier General while there. He eventually rose to the rank of general and assumed command of Supreme Headquarters Allied Powers Europe (SHAPE) in 1969. Goodpaster was present at all the top secret intelligence meetings and is the only surviving person who was involved in these events. Most White House records concerning the U-2 were written by him.

members of Congress. It could conceivably become a political football, as other Air Force aircraft procurements—particularly bombers—had become, to Eisenhower's great dismay. What Eisenhower wanted to avoid was congressional involvement and interference in the program. By placing the aircraft program under control of the CIA, it could be procured entirely in secret, without the knowledge of Congress or the public, or of other aircraft manufacturers.

This program soon became known as the U-2. It was placed under the charge of the CIA Deputy Director for Plans, Richard Bissell. As an indication of how secret it was, no mention of the aircraft was made in the top secret TCP report itself, which was formally presented on February 14, 1955. It was only detailed in a classified annex to the report. This was most likely for the "Eyes Only" of President Eisenhower and Eisenhower apparently destroyed it after reading it.[40]

In the realm of military equipment and aircraft procurement, Eisenhower's decision was very unconventional. First of all, it violated normal military procurement rules which required a competition of different aerospace contractors. Neither the Air Force or CIA ever announced a design competition for a peacetime strategic reconnaissance aircraft. Eisenhower simply ordered the CIA to proceed with a design proposal from a single contractor. Because the CIA's budget was not overseen by the Congress in anything less

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[40] Donald E. Welzenbach, "Science and Technology: Origins of a Directorate," *Studies in Intelligence*, Summer 1986. Although the intelligence section of the TCP report remains classified awaiting review as of fall 1999, the index has been declassified. It includes the word "satellites," but apparently in the context of satellite countries of the U.S.S.R. Those who have seen the report confirm that it mentioned balloon and satellite programs, but apparently did not mention the U-2 aircraft. "The Report to the President by the Technological Capabilities Panel of the Science Advisory Committee, February 14, 1955, Office of the Staff Secretary: Records of Paul T. Carroll, Andrew J. Goodpaster, L. Arthur Minnich and Christopher H. Russell, 1952-61, Subject Series, Alphabetical Subseries, Box 16, "Killian Report-Technological Capabilities Panel (2)", Dwight D. Eisenhower Library. Other documents concerning the recommendations of the intelligence committee have also been released. The most important of these is NSC 5522, which lists all of the general recommendations of the TCP as well as the specific recommendations of the three panels, including the intelligence panel. Thus, although the actual report remains classified, its recommendations are well known. Only one of the intelligence panel's recommendations has been deleted from the released document and this clearly concerns Arctic research. It is therefore clear that the CL-282/U-2 recommendation of the panel was not contained in the main part of the report.

than aggregate figures (i.e. Congress did not even approve major categories within the budget itself, like it did with other agencies), because aggregate figures were known to only a few, and because approximately a third of the CIA's budget was under the discretionary control of the Director of Central Intelligence, the president could order money to be spent on a project and there were no further rules dictating its disbursement.[41] This ability to simply order that things be done and be assured that there would be no further interference was perhaps the most important factor in Eisenhower's selection of the CIA for the mission.

Eisenhower's order was not simply to give the plane to the CIA, but to give it to a special group within the CIA. This act essentially established a separate, small development organization for producing aircraft that had special capabilities and operating rules. Unlike ARDC in the Air Force, the only mission of this organization was to develop the reconnaissance aircraft. It was also very hierarchical, reporting to Eisenhower's senior advisors and not through multiple levels of bureaucracy.

Eisenhower's decision was unconventional because the CIA was not equipped to procure aircraft. Although the CIA had an Office of Scientific Intelligence and strong ties to the military and scientific communities, it had practically no technical development capability whatsoever. The only technical capability that the CIA possessed was in the manufacture of gadgets for espionage work. Both the Air Force and the National Security

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[41] The actual size of the CIA budget in 1954-1955 remains classified. However, one former CIA official claims that the CIA budget in the late 1960s was approximately $750 million and that the Director had a discretionary budget of from $50 to $100 million. Victor Marchetti, *CIA and the Cult of Intelligence* (New York: Knopf, 1974), p. 49, 54. Analysts have estimated that in 1955 the CIA budget was probably on the order of $300-500 million and probably did not increase substantially until the mid-1960s, when the CIA began running extensive operations in Vietnam and later Cambodia and Laos. A former top CIA official told me that the DCI had a discretionary budget around the late 1950s of approximately $100 million. What this means is that up to a third of the CIA's budget during the latter half of the 1950s could be spent solely upon the authority of the Director, with no accounting to the Bureau of the Budget and certainly not to the Congress. This is where the U-2 funding came from. The discretionary budget figure is from Albert D. Albert Wheelon interview by Dwayne A. Day, June 22, 1996.

Agency, with its responsibility for signals intelligence, possessed far more technical capability than the CIA.

This decision therefore necessitated a new approach to aircraft development and procurement. The CIA would rely on both the primary contractor, Lockheed, and the Air Force for support. The reliance upon the prime contractor meant a far greater degree of trust and a far lower amount of oversight than was common for military aircraft procurement.[42] This was known as "streamlined management," and it was a dramatically different approach for everyone involved. Instead of multiple levels of approval required for changes to the contract, there were usually only one or two levels at most. For instance, if Lockheed wanted to make changes to the engines, it made its appeal to the CIA official responsible for engine procurement, who discussed the issue with program manager Bissell, who had the authority to approve or deny the changes on his own, based only on the information and recommendations of the Lockheed engineers and his own budget officer. Normally many meetings and the consensus of committees were necessary for such a change. Any major programmatic decisions usually went to Eisenhower's immediate advisors. Director of Central Intelligence Dulles, although officially in the chain of command, deferred to Eisenhower's scientific experts. Decisions happened much faster this way—similar decisions on Air Force programs required the approval of dozens of officials and could take weeks or months. With the CIA, they could be made in hours.[43] It was virtually impossible to create a more vertically oriented and simplified hierarchical structure than that developed for the U-2.

But although this setup required far more trust in the contractor's recommendations, it did not leave the CIA less powerful. In fact, the opposite occurred. In the event of

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[42] Pedlow and Welzenbach, *The CIA and the U-2 Program*, pp. 39-61, 315-321.
[43] Dan Kelly, interview by Dwayne A. Day, September 5, 1996.

failure or delay, there was no large, faceless bureaucracy to be blamed. Responsibility was clearly defined.

Furthermore, Bissell had ultimate authority to cancel the contract if he felt that it was not going to work. This was a powerful incentive for honesty on the contractor's part, since the arrangement also denied the contractor more traditional modes of recourse common in other aircraft programs. There was no appeal to the public or Congress for reinstatement—if the program failed to meet performance goals and was canceled, the decision was final.

The decision to use the CIA not only eliminated congressional oversight, but also eliminated congressional *pressure*. Because of the intense secrecy—only one member of Congress knew about the aircraft during its development—all decisions made by the CIA were free of interference and final. For instance, there was never any external pressure for the CIA to purchase additional aircraft, something which was common for Air Force bomber programs. The program manager—Bissell—essentially had singular control of the program. It was virtually impossible to go over his head. It was never done. Thus, information asymmetry was controlled. The president received regular updates on the airplane's development whereas Congress knew nothing.

Eisenhower made the key decisions concerning how to implement the program. Once the program was set in motion, he did not need to make any further decisions concerning it until it became operational. At that point he maintained close supervision, personally approving all sensitive operational missions.

Program Results

The first AQUATONE aircraft, later given the designation U-2, flew on July 29, 1955, only nine months after initiation. The aircraft proved to be difficult to fly, requiring careful piloting. There were problems during the testing phase, but none of these were

major. It met and exceeded the altitude, range and payload requirements established earlier for BALD EAGLE. Despite a few development problems, with President Eisenhower's authorization, the first aircraft flew its first operational mission over eastern Europe on June 19, 1956, only 18 months after program initiation (and the same amount of time that the Air Force's X-16 was projected to make its *first flight*).[44] It made its first overflight of the Soviet Union on July 7, 1956, once again with the express authorization of the president.[45] This mission was quickly followed by several more, although flights were temporarily suspended under Eisenhower's orders after the Soviets complained.[46] Over the next four years, the U-2 flew 24 overflights of the Soviet Union and hundreds of other missions over other countries, including extensive coverage of the Suez Crisis. The aircraft performed all of these operations entirely in secret. Due to Soviet impotence in the face of these overflights, Nikita Khrushchev chose to protest only in secret, until the Soviets could actually destroy an aircraft, which they did four years later, on May 1, 1960. In that time, the CIA gathered invaluable intelligence on the Soviet Union, including the fact that the bomber gap which the Air Force was worried about did not actually exist.[47]

Before the U-2 made its first operational mission, the Air Force canceled the X-16 in October 1955. The aircraft was still many months away from first flight, but hardware was being produced. The reason it was canceled is not clear. The Air Force did not choose to purchase the U-2 at this time (although it did so later) and the two aircraft were still ostensibly intended for different missions. Whether the X-16 cancellation order came from the Air Force or the White House is also not known.

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[44] Miller, *Lockheed's Skunk Works, the First Fifty Years*, p. 80.
[45] Ibid., p. 82.
[46] President Eisenhower authorized the initial missions. Due to a concern among AQUATONE program managers that the president might reverse his decision, they chose to fly as many missions as possible at the earliest opportunity. This proved to be a smart move, for the Soviet government filed a quiet complaint about the overflights and Eisenhower ordered their cessation immediately afterward. They did not start again until many months later.
[47] Pedlow and Welzenbach, *The CIA and the U-2 Program*, p. 111.

Agency Design as a Means of Principal Control

The U-2 was developed in a remarkably short amount of time and achieved success that is considered revolutionary even today. When Eisenhower approved the U-2 in November 1954, his goals were straight-forward: First, he wanted to develop a strategic reconnaissance capability at the earliest possible time. Second, he wanted the aircraft to be flown by a civilian and the product to be controlled by a civilian agency responsive to him. Third, due to the provocative nature of the mission, he wanted it to be conducted in utmost secrecy and under his control. Finally, he did not want the aircraft to become a political football like Air Force bomber programs. To achieve these goals, he selected the CIA to manage the program and directed that the agency develop the specialized means for building the aircraft. It achieved all of these goals, proving that principal agency can be applied to intelligence gathering—i.e. agency performance can vary according to the principal's preferences.

How effective was Eisenhower's chosen agent at achieving his goals? It succeeded in developing a highly successful strategic reconnaissance aircraft. It succeeded in keeping the program from becoming public knowledge. It succeeded in ensuring that the intelligence product was controlled by a civilian agency. It also succeeded in preventing the aircraft from becoming a political football. Unlike the magazine ads of strategic bombers that so bothered Eisenhower, the U-2 never became a public political argument until it was shot down. Even when Bell lost the X-16 contract in October 1955, there were no public complaints or calls for reinstatement—the whole subject was classified and did not leak.[48] By these criteria, the CIA was a highly successful agent and followed presidential

[48] In 1957-58, the Strategic Air Command did attempt to take over the highly successful U-2 program. This was resisted by the CIA and surprisingly, was also resisted by other members of the Air Force, who felt that SAC control of the U-2 would affect their own ability to gain intelligence from it.

direction. The U-2/AQUATONE program was also an unqualified success operationally. It provided unprecedented information on the Soviet Union.

Congress never interfered with the U-2 program during this time. Congressional interference can be defined as more than simply hearings and directives and approval of the budget in specific issues and for specific topics. It also includes the imposition of structural controls, such as reporting procedures and procurement rules that last over periods of time. The CIA operated outside of this type of interference. Furthermore, most of the U-2's streamlined management aspects were only possible because Congress was not in an oversight position and had not imposed multiple layers of bureaucracy, as it had with Air Force aircraft programs. Decisions were never second-guessed.[49] The only time Congress was briefed on the U-2 program was after the Gary Powers' shootdown. The Director of Central Intelligence, Allen Dulles, briefed eighteen bipartisan leaders of Congress. He had one of his aides show off many of the reconnaissance photos that the U-2 had collected over the Soviet Union. At the end of the meeting, the congressmen gave him a standing ovation. [50]

Information asymmetry in the case of the U-2 was thus totally in the president's favor. The simplified chain of command and few players involved in the program made it easy for him to get information directly. This arrangement also prevented information from reaching Congress. It was therefore an ideal structural arrangement from the president's point of view.

After the U-2 began flying, the Soviets quickly detected it and complained privately to the United States. They did this after each new incursion. Thus, the extensive secrecy surrounding the plane no longer served its primary purpose of preventing enemy reaction,

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[49] Much of this changed, of course, after Watergate and the Church Committee hearings of the 1970s. However, even then the CIA and associated intelligence agencies maintained far greater autonomy from Congress compared to other government organizations.

[50] Michael R. Beschloss, *Mayday: Eisenhower, Khruschchev and the U-2 Affair* (New York: Harper & Row, 1986), p. 255.

although it still had international value. But despite the fact that the Soviets knew about the aircraft, Eisenhower still did not brief members of Congress on it. Why? Because he had made the program secret for strategic *and* domestic reasons. He had no interest in seeing the U-2 debated in Congress, even in secret. Why would he dilute his own authority by letting another principal make decisions concerning his program?

The proof of the success of this structure at achieving the president's goals is not only in the operational performance of the aircraft, but is also in the bureaucratic performance of the agent (the CIA) compared to other bureaucracies that built airplanes. It took only nine months from Eisenhower's formal authorization to proceed to first flight of the aircraft. It took only a further 10 months from first flight to first operational mission. For a Cold War aircraft program, this speed was (and remains) unprecedented.

The most appropriate comparison is to the development time for the Air Force's own planned strategic reconnaissance aircraft, the X-16 and RB-57D. The X-16 had been approved two months before the U-2, in September 1954, and was still *nine months* from its planned first flight when the U-2 took to the air in August 1955. It was still at least seven months from first flight in October 1955, when it was canceled. If the X-16 had maintained its schedule, it would only have achieved *first flight* at around the same time that the U-2 became *operational.* Thus, the CIA, an organization with no aircraft or major technical development experience, had produced an aircraft in half of the time the Air Force anticipated producing a similar aircraft. The CIA was able to do this because it did not have to play by the rules of other bureaucracies and because the mini-agent established to accomplish the mission was solely focused on achieving it.[51]

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[51] But there is also reason to doubt that the Air Force's X-16 would actually have kept to its original schedule of first flight in 18 months. The other Air Force reconnaissance aircraft of this period, and the only one to be formally completed, did *not* keep to its planned schedule despite the fact that it was considered to be an easier program than the X-16. The RB-57D, a derivative of an existing aircraft, was approved in June 1954. It was envisioned as the "interim" strategic reconnaissance aircraft until the advent of the X-16, and was supposed to fly in under a year—by June 1955. In reality, first flight of an RB-57D did not take place until February 1956, more than eight months behind schedule and after the U-2 was

The U-2 was therefore a clear management success compared to other Air Force reconnaissance aircraft. Compared to other Air Force aircraft programs, the U-2 looks even better. Bombers were top priority in the U.S. Air Force, but every Air Force bomber program took considerably longer to progress from approval to first flight, and development times only increased for each new program. The B-36 took 38 months. The B-45 took 26 months. The B-47 took 35 months. The B-52 took 40 months. Even the Air Force's relatively unsophisticated four-engine transport, the C-130, took 36 months.[52]

Admittedly, bombers are considerably more complex craft than the U-2. The U-2 did push the state of the art, particularly in engine performance, and flew higher than any other aircraft. It also contained some radical design elements, like the lack of a main wing spar. But it was still a small, single-engine aircraft, less sophisticated than bombers. However, even in comparison to fighter aircraft the U-2's short development time stands out. The F-86 single-engine fighter took 29 months to achieve its first flight.[53] The Navy's F-4 twin-engine fighter took 41 months to achieve first flight.[54] The only other aircraft that even comes close in development time is the F-104, which had its first flight only 12 months after approval.[55]

The short time for U-2 development was also not a fluke compared to later reconnaissance aircraft. The CIA later developed the A-12 OXCART, a Mach 3

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already flying. The Air Force admittedly did rush the plane into operational status to attempt to compensate for the development delays, declaring the first squadron operational only four months later, in June 1956. But it was still incapable of achieving the primary mission and as an *interim* program it had failed, for it provided no capability before the availability of the U-2. Robert C. Mikesh, *Martin B-57 Canberra: The Complete Record* (Atglen, PA: Schiffer Publishing Ltd., 1995), p. 197.

[52] Miller, *Lockheed's Skunk Works, the First Fifty Years*, p. 59.

[53] The plane was authorized in May 1945 and made its first flight in October 1947. Larry Davis, "North American F-86 Saber," *Wings of Fame*, Vol. 10, pp. 37-39.

[54] Anthony M. Thornborough and Peter E. Davies, *The Phantom Story* (London: Arm & Armour Press, 1997), p. 35

[55] The F-104, like the U-2, was manufactured by Lockheed, which may explain part of this short development time. However, the F-104 was also rather unusual at the time. It was not produced in response to a clearly-stated Air Force requirement; instead, Lockheed conducted considerable in-house development work on the project before successfully persuading the Air Force to purchase it. If one were to take this earlier work into account, the F-104's short development time would still be impressive, but more in line with other aircraft at the time.

replacement for the U-2, in 56 months. This was in many ways a far more ambitious program than the U-2, yet the CIA still managed to deliver it considerably faster than the Air Force could produce supersonic bombers with less ambitious performance goals. For instance, the time from approval to first flight for the B-58 Hustler, a Mach 2.5 bomber, was 83 months. The time from approval to first flight for the B-70 Valkyrie, a Mach 3 bomber, was 100 months.[56] The A-12 beat them both by wide margins.

Development Times, US Military Aircraft

Name	Type	Time From Approval to: First Flight (months)
U-2	Single engine reconnaissance	9
X-16	Twin engine reconnaissance	18 (est.)
RB-57D	Twin engine reconnaissance	19.5[57]
F-86	Single engine supersonic fighter	29[58]
F-104	Single engine supersonic fighter	12[59]
F-105	Single engine supersonic fighter	37[60]
F-4	Twin engine supersonic interceptor	41
B-36	Multi-engine bomber	38[61]
B-45	Twin engine bomber	26[62]
B-47	Twin engine bomber	35[63]
B-52	Multi-engine bomber	40[64]
B-58	Multi-engine supersonic bomber	83
B-70	Multi-engine supersonic bomber	100
C-130	Multi-engine transport	36[65]

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[56] John N. McMahon, Acting Director of Special Projects, to Deputy Director for Science and Technology, Central Intelligence Agency, "CIA Participation in Technical Collection Systems," September 25, 1968, in National Reconnaissance Office CORONA/ARGON/LANYARD collection, 1/D/0032.

[57] Mikesh, *B-57 Canberra: The Complete Record*, p. 197, 133.

[58] Davis, "North American F-86 Saber," pp. 37-39.

[59] Miller, *Lockheed's Skunk Works, the First Fifty Years*, p. 87.

[60] The F-105 was authorized in September 1952 and had its first flight in October 1955. J.C. Scotts, *F-105 Thunderchief* (London: Charles Scribner's Sons, 1981), pp. 10-12.

[61] Note, this is from the production order. During World War II, the decision to build a bomber was virtually always the same as the decision to put it into production. The first order for B-36s was placed in June 1943 and first flight took place in August 1946. Brown, *Flying Blind*, p. 122, 128.

[62] The B-45 was approved in January 1945 and flew in March 1947. Brown, *Flying Blind*, p. 80, 95.

[63] The B-47 was ordered in January 1945 and made its first flight in December 1947. Brown, *Flying Blind*, p. 80, 95.

[64] The B-52 was ordered in December 1948, made its first flight in April 1952, and was declared operational in March 1956. Brown, *Flying Blind:* p. 143, 146, 153.

[65] Miller, *Lockheed's Skunk Works, the First Fifty Years*, p. 51.

The much longer development times of Air Force fighters and bombers was due to a number of factors. Among these was the tendency of the Air Force to continually demand performance requirements beyond those which were achievable with the current state of the art. These performance requirements were also increased over time. Aerospace contractors therefore were constantly pursuing design targets that were being moved.[66] As Michael Brown has noted, this was a constant for all of the Air Force's bomber programs and, as I noted in the previous chapter, it was the case with the ICBM as well. What presidential intervention with the U-2 accomplished was in part to break this cycle of moving design goals. The ICBM was an unpopular idea for the regular Air Force, so presidential representatives like Trevor Gardner removed it from the regular Air Force. The U-2 was too radical for the Air Force, so what Eisenhower did was place it in an agent that would support it.

By isolating it from the other principal—Congress—and making hierarchy clear, no other goals (like the Air Force's wish for a combat-capable craft) could creep in. The U-2 did not suffer from changing goals. Like the ICBM program, presidential intervention allowed goals to be made both realistic and *static*. The president set the goals and no one dared move them without his permission. And the constraints he placed on the program did not allow the agent to appeal to another principal if it wanted to change those goals. This intervention also established the program's urgency. The aircraft's goals were clearly defined at the outset—70,000 feet altitude, 1,500 miles radius and a camera payload of 700 pounds—and were not changed. Those involved with the U-2 program believe that the streamlined form of management and the lack of constant interference from the government were crucial to the program's rapid development.[67] This was possible because Eisenhower intervened.

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[66] Brown, *Flying Blind*, p. 147.
[67] Dan Kelly, interview by Dwayne A. Day, September 5, 1996; Dino Brugioni interview by Dwayne A. Day, November 6, 1996.

Conclusion

The case of the U-2 presents a puzzle: why was a plane developed by a non-aeronautical bureaucracy able to achieve such success? Furthermore, why was the aircraft development given to this agency in the first place when another capable agent already existed? Finally, once the program was initiated, why didn't it become a major source of inter-service rivalry between the CIA and the Air Force?

The incredible success of the U-2 is a result of the structure that the president used for the development of the aircraft. He not only selected a unique agent to accomplish his mission, but he controlled its attributes—its single-mission nature, its streamlined hierarchy, and its control of information about its activities. The degree to which these structural attributes were maximized explains the incredible success of the development effort, and ultimately the incredible success of the operational use of the airplane.

The parallels to the ICBM and IRBM cases are obvious. The president was able to direct a reluctant bureaucracy to undertake a mission that it was not enthusiastic about. The bureaucracy was able to meet the president's goals. This is a clear example of a principal agent relationship. The president did not simply give the job to an existing agent, but carefully constructed an agent to conduct the mission. Eisenhower wanted the mission accomplished in a controlled way—no leaks to the outside world and no interference from Congress. At the time, the CIA operated as a virtual executive fiefdom, with budgets that were almost unknown by the Congress and not subject to many of the rules common to the defense budget. Thus, the CIA formed the core of Eisenhower's new agent.

Principal agency can explain this success whereas bureaucratic politics falls short. Once it was clear that the president wanted a strategic reconnaissance aircraft, why didn't the Air Force attempt to either take over the U-2 development or do better with its own aircraft? As the IRBM case demonstrated, bureaucracies can become enthusiastic about

missions that they initially showed no interest in. In the case of the U-2, bureaucratic politics fails as an explanation of what happened and how.

The structural variables in the U-2 case were all extreme: it was a single mission agent as opposed to a multi-mission agent; an extremely hierarchical relationship between principal and agent; and virtually total information control by one principal who denied that information to the other principal. It was the appeal of the last attribute—the ability to act in almost complete secrecy—that was most attractive to Eisenhower. It meant that he never had to compromise or even consider compromising with Congress over the program. The U-2 program taught a lesson to presidents and technical program managers—secrecy was a useful management tool.

Classifying an activity allows the president to restrict the flow of information on that activity both to other sectors of the bureaucracy and to the Congress. Only those who have been approved for the information can receive it, and limiting this access to only those who are likely to be supportive of the policy is a principal's means of exerting control. Admittedly, this is a power that was much more available during the early years of the Cold War than it was after Watergate or the end of the Cold War, when Congress increased its wariness of the executive branch and oversight of national security bureaucracy. Presidents could obtain near-absolute secrecy then, but no longer. But there is ample evidence that even today secrecy remains an effective means of limiting information flow to other sectors of the government.[68] (This is a subject that will be discussed in the concluding chapter.)

The result of this information control is that the president as principal has relatively far greater information on the actions of the agent than Congress as principal has on those same actions. The president is still limited by the fundamental issues of information

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[68] Stephen I. Schwartz, *Atomic Audit* (Washington, DC: The Brookings Institution, 1998). In particular, see chapter nine.

asymmetry, but he enjoys a qualitative and quantitative advantage in information compared to Congress when he can classify activities. He may not be able to improve the information he gets from an agent, *but he can decrease the information that Congress gets from an agent.* This is unequal information asymmetry. Since information is vital to the proper control of a bureaucracy by a principal, classification is a method of directly achieving control in its own right. When coupled with bureaucratic streamlining and hierarchical integration, this is a means of making an agent highly responsive to presidential direction.

Just because the president directed that the CIA develop the U-2 did not mean that there were never any disputes between agencies over the airplane. The Air Force, which had initially rejected both the mission and the aircraft, attempted to gain control of both once the U-2 started proving wildly successful. It was rebuffed. The Air Force and CIA did later come into conflict over some operational reconnaissance missions and national authorities were forced to compromise on some aspects of U-2 operations.[69] But these disputes never seriously threatened the program. Indeed, its success, like the ICBM program, later served as a model for other programs, which will form the basis of the next case study.

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[69] Previously it was known that SAC sought to obtain U-2 aircraft for the Air Force in 1957. The White House agreed with the stipulation that the military aircraft would only be used for missions to sample the upper atmosphere for nuclear particles. It was only after some time that the administration allowed the military to equip its U-2s for reconnaissance missions. The best example of the Air Force vying for control of the aircraft concerns the use of the U-2 during the Cuban Missile Crisis in 1962. The Air Force argued that because of tensions over Cuba, SAC pilots should fly reconnaissance missions over the island. The CIA ultimately was forced to concur. However, during an earlier dispute over who would fly missions over Cuba in 1960, President Eisenhower ruled out SAC for the missions. For a discussion of the Cuban Missile Crisis use of the U-2, see: Dino Brugioni, *Eyeball to Eyeball* (Annapolis, MD: Naval Institute Press, 1990), pp. 154-155. The earlier dispute over SAC use of the aircraft over Cuba was previously unknown and was only revealed in late 1999. See: Brigadier General A.J. Goodpaster, Memorandum for Record, October 20, 1960, Office of the Staff Secretary: Records of Paul T. Carroll, Andrew J. Goodpaster, L. Arthur Minnich and Christopher H. Russell, 1952-61, Subject Series, Alphabetical Subseries, Box 15, "Intelligence Matters (20)", Dwight D. Eisenhower Library.

Chapter 7
Satellite Reconnaissance: CORONA and SAMOS

Satellite reconnaissance was another post-war idea that experienced a relatively long gestation period before moving to rapid development. Like the U-2, it was also an idea that was initially unpopular with several bureaucracies before it was ultimately adopted by one and developed relatively quickly, after presidential intervention.

The early years of satellite reconnaissance actually encompass several programs, some of which were very successful and one of which was unsuccessful. The puzzle is that the success or failure of the programs had nothing to do with the presence or absence of bureaucratic rivalries. None of the bureaucracies that conducted the missions were initially enthusiastic about them. And bureaucratic politics should have reigned over the highly successful projects, but did not. Success and failure is explained by something other than bureaucratic politics.

What is apparent from the cases is that the more highly structured the bureaucracy that conducted the mission, the more successful it was at achieving the goals. If structure was not deliberately controlled, then the agent either lacked direction or failed to respond to it very well and the mission failed. In the most successful example—the CORONA satellite—the president placed extreme controls on structure in order to increase his ability to get what he wanted from his agents. He created single-mission organizations with streamlined hierarchies that operated in secret, outside of the purview of his rival principal. They worked spectacularly.

Learning from Success

Because it is difficult for principals to determine which agents may possess the capabilities that they require to enact their policies, they often select agents based upon past

performance. Alternatively, they may attempt to copy previous success. The ICBM effort was in part an attempt to recreate the experience with the Manhattan Project. The U-2 effort demonstrated to the president—as well as to his agent—that highly structured and highly secretive organizations could be very successful as well. The U-2 thus became a model for future reconnaissance development efforts. They did not use the exact same people and organizations as the U-2, but, at Eisenhower's explicit direction, they copied its primary structural attributes. This pattern was repeated again and again over the next several decades as later administrations chose to emulate successful programs.

The Origins of Space Reconnaissance

Spaceflight was an idea that had existed for centuries, but it was not until 1945 that the U.S. Department of Defense began to consider the practical military utility of satellites. In May 1945, German rocket expert Wernher von Braun, brought to the United States after the war, prepared a report for the U.S. Army discussing the potential of Earth-orbiting satellites. In October, the Navy proposed its own satellite. In November, Army Air Force General H. H. "Hap" Arnold declared that a space ship was "practicable today."[1]

On April 9, 1946, the Army-Navy Aeronautical Board discussed the subject and decided to reconsider it a month later. Major General Curtis E. LeMay, Director of Research and Development of the Army Air Forces, immediately after the first meeting decided to commission an independent study of the subject. It was to be a three-week crash effort to return a report *before* the second Aeronautical Board meeting, apparently in order to secure this new field for the Army Air Forces.

Project RAND, a division of Douglas Aircraft Company's Santa Monica research laboratories, which had been established to serve as a think-tank for the Army Air Force,

[1] R. Cargill Hall, "Early U.S. Satellite Proposals," *Technology and Culture*, Fall 1961, pp. 410–434.

was given the responsibility for the study. The result was the report *Preliminary Design for an Experimental World Circling Spaceship* issued on May 2, 1946. In 324 pages, it concluded that by using existing technology it was entirely possible to develop a satellite system, although the payload would be limited to under 2,000 pounds. The satellite could be used to gather scientific information as well as to conduct weather reconnaissance, weapons delivery, attack assessment, communications, and "observation." The study further noted that "the satellite offers an observation aircraft which cannot be brought down by an enemy who has not mastered similar techniques."[2] This may seem self-evident, but it is not always the case in warfare. Tanks can be destroyed by an enemy that does not build tanks. Aircraft can be shot down by an enemy that does not have an air force. But a satellite can only be brought down by a country that has developed its own satellite. It therefore represented an absolute increase in technological capability, not simply a relative one.

If LeMay's intent had been to use the RAND report to maneuver the Navy out of the satellite business, his tactic apparently worked, for Navy efforts soon dwindled. But while the first study had concluded that a satellite vehicle was practical, it failed to create any great enthusiasm for it in the Army Air Forces, which did not want to ignore the idea of satellites—particularly for reconnaissance—but was unwilling to pursue it in any meaningful way. The Army Air Forces ordered a second study and RAND produced a series of documents on the subject during the winter of 1946-1947. One noted that a satellite in polar orbit would be ideal for scanning the oceans for ships. Another noted that a satellite equipped with television equipment and one or more cameras could be used for reconnaissance. In September 1947, the Air Staff of the newly formed Air Force ordered

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[2] Document II-2 in John M. Logsdon, with Linda J. Lear, Jannelle Warren-Findley, Ray A. Williamson, and Dwayne A. Day, *Exploring the Unknown: Selected Documents in the History of the U.S. Civil Space Program, Volume I: Organizing for Exploration* (Washington, D.C.: NASA SP-4407, 1995), pp. 236-245.

the Air Materiel Command (AMC) to evaluate RAND's studies. AMC returned a cautious report noting that the practicality of such systems was questionable and recommended a further study to establish Air Force requirements.[3]

In January 1948, General Hoyt Vandenberg, Vice Chief of Staff of the newly-created United States Air Force, signed a "Statement of Policy For A Satellite Vehicle." This statement declared that "The USAF, as the Service dealing primarily with air weapons—especially strategic—has logical responsibility for the Satellite." But the document also stated that the technology was immature and that a development decision lay some time in the future. Until that time, the subject would be studied "with a view to keeping an optimum design abreast of the art, to determine the military worth of the vehicle—considering its utility and probable cost—to insure development in critical components, if indicated, and to recommend initiation of the development phases of the project at the proper time."[4]

With a very clearly-stated position on the matter, the Air Force in February 1948 asked RAND to take on further studies of the satellite. RAND contracted with several other organizations including North American Aviation, RCA, the Ohio University Research

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[3] Merton E. Davies and William R. Harris, *RAND's Role in the Evolution of Balloon and Satellite Observation Systems and Related U.S. Space Technology* (Santa Monica: The RAND Corporation, 1988), p. 15.

[4] Ibid. In December 1948 the First Report of the Secretary of Defense stated:

> The Earth Satellite Vehicle Program, which was being carried out independently by each military service, was assigned to the Committee on Guided Missiles for coordination. To provide an integrated program with resultant elimination of duplication, the committee recommended that current efforts in this field be limited to studies and component designs; well-defined areas of such research have been allocated to each of the three military departments.—*First Report of the Department of Defense*, December 1948, p. 129.

This statement appears to have been an anomaly, since the services continued their individual studies on their own and the DoD-based Committee on Guided Missiles did not exert any influence on these projects. Why the statement was written remains unknown. The Air Force's clearly-stated claim on the satellite mission in January may have prompted it. But after the publication of the Secretary of Defense's report nothing changed—there was no centralization of the satellite mission and the services continued their separate low-level studies. The Secretary of Defense's report apparently went completely overlooked.
At the time, the Secretary of Defense position was extremely weak compared to the services, as previously discussed in chapter 2. It was strengthened shortly afterward.

Foundation, and Boston University. This was a classic early Cold War research effort, uniting both industry and universities. By 1950, RAND's research was bearing fruit; in November the Air Force Directorate of Intelligence recommended that further research and development was justified.[5]

Satellites and Reconnaissance

The primary use RAND envisioned for a satellite was reconnaissance. A satellite offered a solution to the problem of violation of airspace identified by Richard Leghorn in his address in December 1946. But it came at a cost, for it required the development of a completely new vehicle—the rocket—in order to make the mission possible. The Air Force did not expect rocket development to be cheap, and the benefits of a reconnaissance satellite did not justify the development of the rocket on its own.

In February 1951, Colonel Bernard A. Schriever who was the Special Assistant for Development on the Air Staff, organized a conference during which he established several criteria for a satellite reconnaissance system. Early the next month the Air Force paid RCA to conduct tests using television cameras to establish further baselines for these criteria. In April 1951, RAND released two further reports to the Air Force. The first, *Feasibility of Weather Reconnaissance from a Satellite Vehicle*, examined the requirements and value of weather forecasting from space. In particular, such a system enabled weather reconnaissance behind enemy lines, something crucial to strategic bombing campaigns. The second study was *Utility of a Satellite Vehicle for Reconnaissance*.[6]

In explaining the desirability of the television mode, this report summarily rejected the two other alternative modes of reconnaissance: film-return and photographic facsimile transmission. Of the film-return alternative it stated that "using a conventional aerial

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[5] Davies and Harris, *RAND's Role in the Evolution of Balloon and Satellite Observation Systems and Related U.S. Space Technology*, pp. 17-19.
[6] Ibid., pp. 23-30.

photographic camera and returning the satellite to earth on command, appear to involve difficulties that would make early versions of the satellite impractical."[7] It rejected a photographic facsimile transmission system, stating: "A re-usable film must be employed because, otherwise, roughly 3/4 ton of camera film would be required per month's operation. Since we know of no re-usable film (or other less bulky storage strip) under development, the photographic facsimile system will be ruled out for the present; future requirements, such as those for delayed picture transmission, may cause reconsideration of this system."[8] The need for a large amount of film for a photographic facsimile system stemmed from the requirement that the satellite be capable of operating for up to a year in orbit, a requirement that was totally unrealistic in 1951, although they did not realize how unrealistic at the time. The report estimated that, under restricted field-of-view conditions, the satellite could have resolution as good as 40 feet.[9]

This study led to yet another study, which eventually became known as Project Feed Back; it was presented to the Air Force in 1954. Feed Back was a comprehensive report that addressed all issues of satellite reconnaissance, from the design of the rocket and the satellite and camera systems, to the actual uses of the intelligence product. The report demonstrated that a space reconnaissance satellite was feasible, and outlined the steps to develop it.[10] It became the Bible for satellite reconnaissance advocates.

Despite the inherent limitations of the RAND satellite proposal, the Feed Back study was sufficiently promising to attract attention within the Air Force. The study went to the Air Staff, which requested the views of Strategic Air Command. In July 1954, Commander in Chief, Strategic Air Command (CINCSAC) General Curtis LeMay was briefed on the study. His response is unknown, but it was apparently not negative. The

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[7] J.E. Lipp, R.M. Seiter, Jr., and R.S. Wehner, et. al., Utility *of a Satellite Vehicle for Reconnaissance*, The RAND Corporation, R-217, April 1951, p. 1
[8] Ibid.
[9] Ibid., p. 18.
[10] J.E. Lipp and R.M. Salter, *Project Feed Back*, The RAND Corporation, R-262, March 1, 1954.

study impressed Major Quentin Riepe at the Air Research and Development Command (ARDC), Detachment 1, at Wright-Patterson Air Force Base in Ohio, who brought it to the attention of his superiors. Riepe felt that the Air Force should begin work on such a project and he was able to persuade his superiors of this; in November 1954, ARDC issued System Requirement Number 5, which called for competitive system design studies on a reconnaissance satellite.

The Air Force issued a General Operational Requirement for a reconnaissance satellite on March 16, 1955.[11] This order approved construction of a reconnaissance satellite and stated basic technical requirements. In Spring 1955 Major Riepe commanded a design team that addressed technical issues concerning reconnaissance satellites. In August he was replaced by Lieutenant Colonel William King. Riepe stayed as King's deputy and the team requested proposals from industry in a competitive contract known as PIED PIPER. The Air Force received three responses, from Lockheed Aircraft, the Glen L. Martin Company, and the Radio Corporation of America. In February 1956, the team moved to the Western Development Division (WDD) in California, which was then developing the ICBM. WDD's commander, General Bernard Schriever, was concerned that the satellite development might conflict with work on the ICBM unless he monitored it closely.[12]

In October 1956, the Lockheed Aircraft Corporation was selected as the winner in the PIED PIPER competition and the project was renamed Weapons System (WS) 117L. WS-117L was to use a fixed, nose-mounted still camera developed by Eastman Kodak.[13]

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[11] Frederick C.E. Oder, James C. Fitzpatrick, and Paul E. Worthman, *The CORONA Story*, National Reconnaissance Office, 1998, p. 4.

[12] See, for instance, James S. Coolbaugh, "Genesis of the USAF's First Satellite Programme," *Journal of the British Interplanetary Society*, August 1998.

[13] The television camera idea had been rejected by RCA as impractical in early 1956. (RCA had been responsible for television camera development at the same time that it was competing for the overall program.) The earlier resolution estimates proved to be too optimistic and therefore the concept had to be abandoned. R. Cargill Hall, "Postwar Strategic Reconnaissance and the Genesis of CORONA," in Dwayne

Instead of a television camera, the Eastman Kodak camera system would develop the film on board, scan it electronically with a CBS "flying spot scanner" and then transmit the image to the ground. Resolution was estimated to be 100 feet initially, and able to be improved to 20 feet with a longer focal length camera. The lifetime of the satellite was reduced from one year to a more realistic 90 days.

Film-Return

There was a potential alternative to the difficult technical approach that the Air Force had chosen, but it too required significant technological development. This was the film-return approach which the RAND study had initially rejected in 1951 and which had again been rejected in the 1954 Feed Back report. Instead of developing the film on board the spacecraft and transmitting the image to Earth, the film could be returned to Earth in a reentry capsule.[14]

In early 1956, Richard C. Raymond, who worked in RAND's electronics division, compared the film-readout system with a recoverable film payload system. He calculated that a film-recovery system "would yield at least two orders of magnitude more data" than a film-readout system. Raymond proposed using an Atlas booster with a solid propellant upper stage and a vertical strip camera and a recoverable payload.

Raymond's work led to a RAND recommendation to the Air Staff for a recoverable satellite system. The report was written by Brownlee W. Haydon and RAND President Frank Collbohm and was titled *Photographic Reconnaissance Satellites.* It was sent to the Air Staff in March 1956, which promptly rejected it and sent it back to RAND.[15] The exact

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A. Day, John M. Logsdon, and Brian Latell, eds., *Eye in the Sky: The Story of the CORONA Spy Satellite Program* (Washington, DC: Smithsonian Institution Press, 1998), p. 108.

[14] Ibid., pp. 110-112.

[15] Although this 20-page report—the first technical paper addressing the issues of film-recovery from space—was one of the seminal documents of the reconnaissance satellite program, it was apparently destroyed at the time along with RAND's correspondence with the Air Staff.

reasons why it was rejected are not known, but it is apparent that the RAND proposal was totally unwelcome to the Air Staff, since it was unprecedented for a RAND report to be sent back to the think tank. Presumably, the report was rejected because, although the satellite design provided superior intelligence data, such a system would not be instantaneous and was therefore of no use for warning of surprise attack on the United States. In addition, the technical problems for such a system—primarily the weight of the satellite and the heat generated upon reentry—were considered by some to be greater than the problems for the television-based satellite.[16]

The problems of heating for even the slower ballistic missile reentry vehicles designed to carry atomic weapons were considered so important that the Department of Defense sponsored a summer study in 1955 to address the problem. It failed to arrive at a solution. Those involved with designing ballistic missiles anticipated that a solution would eventually be found, but that it would take time.[17]

By late 1956 a second summer study on ballistic missile reentry vehicles had identified a solution to the heating problem. By making the reentry vehicle out of a material which charred and/or flaked away as it heated up, the temperature inside could be kept low enough to allow film to survive. This development was not lost on those interested in film-return satellites. RAND had kept the idea alive in 1956, proposing one possible solution to the reentry heating problem in an internal document in March 1956. By March 1957, with the heating problem solved, two RAND physicists began proposing an alternative film-return satellite to anyone who would listen. They briefed the Air Force Scientific Advisory

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[16] Dwayne A. Day, "The Development and Improvement of the CORONA Satellite," in Day, et. al., *Eye in the Sky*, pp. 48-49. Ballistic missiles were still in development at the time and reentry vehicles were also in their infancy. The heat generated during ballistic reentry was not as great as that generated during reentry from orbit, which necessarily occurred at a much higher velocity. Nuclear weapons also could survive higher temperatures than film, which melted at relatively modest reentry temperatures. For a discussion of the different reentry vehicles in consideration for the ballistic missile programs, see John Lonnquest and David Winkler, *To Defend and Deter: The Legacy of the United States Cold War Missile Program* (USACERL Special Report 97/01) November 1996, pp. 32-33.

[17] Ibid.

Board, the Office of Defense Mobilization's Scientific Advisory Committee, and the person then in charge of the WS-117L program, Colonel Frederick Oder. But by October 1957, the Air Force was still no closer to developing a reconnaissance satellite.[18]

The reconnaissance satellite was in many ways analogous to the ICBM in the reception it received from the Air Force uniformed leadership. Although uniformed Air Force leaders (i.e. the Air Staff) were willing to advocate advanced programs to solve their problems, they did so only as long as these programs fit their preconceived roles and missions. They also did so in a linear fashion, i.e. the problem of the vulnerability of bombers was to build better bombers, not build ICBMs instead. Reconnaissance satellites, although interesting to some relatively junior uniformed Air Force officers, did not get any support from the uniformed Air Force leadership either. Because no high-level national official had directed their development, reconnaissance satellites stayed relatively unfunded, indefinitely confined to the purgatory of studies and low-level research.

Sputnik

The Soviet launch of Sputnik on October 4, 1957 changed the environment for satellite reconnaissance entirely. It demonstrated several important points to Eisenhower's advisors and Air Force leaders. First, it demonstrated that satellites were not simply theoretical, but achievable. Second, it heightened concern over the Soviet development of ICBMs. Third, although U.S. intelligence had reasonably good information about when the Soviets were capable of launching a satellite, the fact that the Soviets actually did it further underlined the importance of accurate and timely intelligence.

Perhaps as a result of the public uproar as well as Eisenhower's apparently unconcerned public response to Sputnik, in mid October someone leaked information to

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[18] Hall, "Postwar Strategic Reconnaissance and the Genesis of CORONA," Oder et. al., *The CORONA Story*.

Aviation Week magazine about WS-117L—including the involvement of Lockheed and the code name of the contract, PIED PIPER.[19] This was apparently an attempt to gain increased funding for the Air Force satellite reconnaissance program. Thus, the immediate effect of Sputnik was both to create interservice rivalry over the space mission in general, and cause leaks in the reconnaissance program—two things that Eisenhower had already experienced with the IRBM program and disliked.

In mid-October Eisenhower's advisors held a special briefing on the WS-117L program in the Old Executive Office Building. There they heard of the status of the program as well as the new proposal for a film-return satellite.[20] On October 24, the President's Board of Consultants on Foreign Intelligence Activities (PBCFIA) submitted its semi-annual report to Eisenhower. It noted in this report that it was aware of two advanced reconnaissance systems then under consideration. One was a CIA study for a supersonic reconnaissance aircraft to replace the U-2. The other was WS-117L. But neither one was expected to be ready before 1960 and an interim solution was needed. The Board recommended an early review of these systems. Only a few days later the Executive Secretary of the National Security Council notified the Secretary of Defense and the Director of Central Intelligence that Eisenhower requested a joint report from them on these two systems.[21] At this time the Air Force was developing WS-117L and the CIA was planning to develop the supersonic aircraft to replace the U-2.

On October 26, the Army made its own presentation to the committee, recommending the development of a system that would use a television camera to photograph the Soviet Union. The Army's proposal was actually based upon one of the losing PIED PIPER submissions.[22] The Army proposal, lacking the extensive study of the

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[19] "USAF Pushes Pied Piper Space Vehicle," *Aviation Week*, October 14, 1957, p. 26.
[20] Hall, "Postwar Strategic Reconnaissance and the Genesis of CORONA," p. 109.
[21] Greer, pp. 5-6.
[22] John H. Ashby, "A Preliminary History of the Evolution of the Tiros Weather Satellite Program, (HHN-45)," NASA, Goddard Space Flight Center, August 1964, NASA History Division.

Air Force-RAND collaboration, was not as detailed. It was clearly not in competition with the other systems, but its existence highlighted the fact that the reconnaissance satellite could become a source of interservice rivalry like the IRBM, which Eisenhower and his advisors wanted to avoid.

On November 12, RAND once again recommended to the Air Staff that the Air Force develop a recoverable reconnaissance satellite.[23] Colonel Frederick Oder of the 117L Program Office also endorsed a recoverable, spin-stabilized satellite program in addition to the film-scanning satellite. This was the first time that Air Force officials had endorsed the film-return concept. But, lacking full funding for WS-117L, Oder was unlikely to obtain additional funds for the new program. As a result, Oder made an overture to the CIA to fund the program. If the Air Force was not going to provide sufficient funds for the film-return satellite, Oder reasoned, then maybe the CIA would.[24]

Oder's decision in many ways violated the bureaucratic politics myth that government officials tenaciously guard their piece of the pie. Oder was advocating giving away control of an Air Force program. However, Oder was a member of Western Development Division, which itself operated outside of the normal Air Force bureaucracy. He was also familiar with the U-2 experience, where a CIA led team was able to achieve impressive results in a short period of time. Oder was less interested in who accomplished this specific mission as long as it got done. At that time the Air Force was not even providing sufficient funding to achieve its main priority in space, let alone providing money for an expanded program.[25] The recoverable satellite program was the smallest piece of the Air Force space pie, and seeking CIA help did not immediately threaten the overall Air Force effort.

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[23] Davies and Harris, p. 87.
[24] Hall, "Postwar Strategic Reconnaissance and the Genesis of CORONA," pp. 107-110; Oder et. al., *The CORONA Story*, pp. 10-13.
[25] Oder et. al., *The CORONA Story*, p. 107; Robert Perry, *A History of Satellite Reconnaissance, Vol. 1*. National Reconnaissance Office, 1973, pp. 20-25.

Before the decision reached the top levels of the White House, however, there was another development. In October, after Sputnik, the existence of the WS-117L program had leaked to the aviation trade press. But in January, the specific proposal for the recoverable satellite program was printed in the *New York Times*. Virtually all of the details of the program were present in an article that ran on the front page of the newspaper—the schedule, the booster, the testing program, the involvement of the RAND Corporation, and the potential intelligence targets.[26]

But this was not a "leak" in the traditional sense. The Department of Defense released a transcript of General Bernard Schriever's testimony before the Senate Preparedness subcommittee less than a week before. Although it was edited, the officially released transcript contained a great deal of information about the proposal, including Schriever's statement that he thought "we could have a reconnaissance capability, using the Thor booster, by the spring of next year, with a recoverable capsule."[27]

The information that was officially released was probably not approved by the White House, given Eisenhower's sensitivity over intelligence matters. What role this story played in President Eisenhower's subsequent decisions is unknown (he never once mentioned reconnaissance satellites in his memoirs, due to their continuing secrecy). But the *New York Times* story was precisely the kind of thing he abhorred—reading about sensitive military information in the press, due in part to congressional involvement and the military's desire to justify or defend programs and actions. The earlier WS-117L leak to the aviation press clearly was intended to demonstrate that the Air Force was also competing in the space race. It was the type of thing that organizations do when they feel threatened. The January *New York Times* article might have been more benign in nature, but it still represented the kind of publicity that Eisenhower did not want.

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[26] John D. Morris, "Air Force Plans 'Seeing' Satellite by the Spring of 1959," *The New York Times*, January 15, 1958.
[27] Ibid.

Presidential Intervention—CORONA

On February 7, 1958, James Killian and Din Land, who was also a member of the president's intelligence advisory board, met with Eisenhower and General Andrew Goodpaster. There they briefed him on the status of the recoverable space capsule.[28] They stated that although the cameras would have only 50-100 foot resolution (compared to four feet for aircraft like the U-2), they would still offer useful intelligence data, provided the program stayed covert and the Soviets did not use deception techniques. They stated that they thought the project should be a joint one between the Air Force (specifically, the Air Force Ballistic Missile Division) and the CIA.

Eisenhower replied that he thought the program would be part of the larger space program that Killian was working on in the wake of Sputnik. He also said that the CIA should have "complete and exclusive control of all of the intelligence phases of the operation" and that "only a handful of people should know anything at all about it."[29]

Brigadier General Andrew Goodpaster, Eisenhower's Staff Secretary, recorded the meeting. One or two days after the meeting, Goodpaster suspected that "there might not have been full understanding between the President on the one hand and Dr. Killian and Mr. Land on the other," and so he met with Killian and Land privately to discuss their understanding of the decision. Killian and Land stated that they thought that the Air Force would be in charge of the program. Goodpaster did not feel that was the president's intent and he met with Eisenhower to clarify it. According to Goodpaster, Eisenhower "stated

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[28] They also discussed the follow-on aircraft to the U-2, a supersonic spyplane which initially had the name GUSTO and was later renamed OXCART. Eisenhower approved development of this aircraft, under CIA auspices, at the time.

[29] A.J. Goodpaster, Brigadier General, U.S. Army, "Memorandum of Conference with the President, February 7, 1958," February 10, 1958, National Reconnaissance Office CORONA, ARGON, LANYARD declassified document collection, 2/A/00-40.

emphatically that he believed the project should be centered in the new Defense 'space' agency, doing what CIA wanted them to do."[30]

Eisenhower clearly directed the implementation of the program. He overruled his top advisors, who envisioned a far greater Air Force role in the development of the recoverable reconnaissance satellite program. This was certainly not the first time he had changed or supplemented recommendations made by his top advisors. His presidential records clearly demonstrate that Eisenhower had strong views and a strong hand in defense policy. Having commanded all allied military forces in Europe during World War II, he understood the military and paid close attention to things such as the promotion of flag officers and the ratio of mid-level officers to enlisted men. He also closely followed the proceedings of his National Security Council and its directives. But he was even more intimately involved in the satellite reconnaissance effort, meeting regularly with a small core group of advisors to monitor the status of the program.

Eisenhower's decision to place the recoverable satellite program under the control of the CIA was in some ways a mirror image of his earlier U-2 decision. Once again, he took a program that was then being conducted by the Air Force and gave it to the CIA, and directed that it be managed by the same people.

But in many other ways this decision was just as unprecedented as Eisenhower's U-2 decision three and a half years before. The CIA had no experience in either rockets or space. Richard Bissell, who managed the U-2 program for the CIA, had paid close attention to the development of the civilian scientific satellite program due to its role in establishing the international right of satellite overflight. The CIA had even provided a portion of the funding of the civilian scientific satellite.[31] But the CIA had not been

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[30] Ibid.

[31] Who at CIA caused this to happen is not clear. The CIA certainly had close ties to the U.S. scientific community and the money may have come from the CIA's Office of Scientific Intelligence. However, since Bissell was assigned the task of following the program closely, he is more likely the person who sought additional funding for it. Whether this money came from Bissell's covert action funds or from the

involved in the procurement or operation of satellite equipment. At least when it came to the U-2, the agency already possessed experience operating its own aircraft. It had neither development nor operational experience regarding space.[32] The satellite program was also more complex than the U-2 program in a number of ways. Launch, operations and recovery would require the allocation of considerably more resources than were necessary for the U-2 development, and the Air Force was needed in a major support role for the program, not just as a procurer of the engines. As Richard Bissell later stated, it was not possible for the CIA to procure and launch its own ballistic missiles; the Air Force would have to do this. The result was that, unlike the U-2, where the Air Force had only limited involvement in the actual development process, for the satellite the Air Force would be spending the majority of the funds on a program that it did not control.

As Goodpaster's recording of the meeting also emphasizes, Eisenhower did not simply want the CIA to control the operational phases of the program. He wanted it to control the *development* of the program. In the case of the U-2, the CIA was given control of the development effort at least in part due to political deniability considerations—the ability to plausibly deny that the spyplane was a military aircraft and therefore, perhaps optimistically, reduce the political fallout should the plane be discovered during a mission. But Eisenhower's U-2 decision was due at least in part to a concern over who would control the intelligence *product*. He knew that whoever "owned" a program from the outset would determine its use. There were no deniability concerns for the satellite. The only issues were effective development and control of the product.

Eisenhower's immediate circle of advisors were undoubtedly aware of an expansive space plan that was submitted by the Air Force to the Secretary of Defense at the end of

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Director's discretionary fund is unknown. Day, "A Strategy for Reconnaissance: Dwight D. Eisenhower and Freedom of Space," pp. 135-137.

[32] In the case of the U-2, the CIA at least had some experience *operating* aircraft, even if it lacked experience *developing* them.

January, only a week before Eisenhower approved the new satellite program.[33] This involved both manned and unmanned spaceflight and was clearly the Air Force's attempt to get on the funding bandwagon for space-related programs. Ideas that had not been significantly funded before Sputnik were now enthusiastically advocated by an Air Staff that was unaware of them only a few months before. Sputnik had caused the Air Staff to suddenly see space as a means of dramatically increasing its budget and its domain. Eisenhower's specific reaction to the Air Force position is unknown, but he would not have been pleased, for the Air Force was proposing a very ambitious and costly program—something that Eisenhower resisted throughout his presidency. The plan also included recommendations for programs, such as a lunar base, that he later opposed because he felt they had no military utility. Thus, both the earlier leaks of information (in October and then again in January), the emergence of a competing space program from the Army, and the very expansive Air Force plans for space submitted to the DoD in January, may all offer partial explanations for why Eisenhower was so adamant about placing the CIA in control of the recoverable satellite. If it was not public, it could not become troublesome like the IRBM. The U-2's success, particularly at staying covert and not generating trouble, was undoubtedly also a major factor.

The Air Force was a logical choice based upon its possession of the technical capabilities needed to perform the mission—the rockets, the trained officers, and the preexisting relationships with key contractors. But Eisenhower was concerned with structure and he created an agent (Bissell and the U-2 management team of CIA and Air Force personnel) solely responsible for the program. He controlled the number of missions the agent performed and hence its focus on a single mission. He created a

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[33] The expansive Air Force program is known only from internal Air Force historical accounts of this period. However, as a response to Sputnik, Eisenhower named James Killian his science advisor and made him responsible for determining the nation's direction in space. In this capacity, Killian would have been aware of Air Force space plans. David Spires, *Beyond Horizons* (Washington, DC: U.S. Government Printing Office, 1997), pp. 50-55.

vertically oriented hierarchy (with the team reporting directly to his senior advisors, bypassing other CIA and Air Force levels). And by placing control of the program in the hands of the CIA, Eisenhower prevented many of the information leaks that he worried about: he eliminated leaks to the press; he dictated who would control the final intelligence product; and he cut Congress out of the decision process. General Schriever *had* to testify before the Senate Preparedness subcommittee in January 1958 and that information quickly reached the press. In contrast, the CIA did *not* have to testify before Congress about the satellite, and it never leaked. Unlike the Air Force, the CIA was Eisenhower's exclusive, structured agent and therefore, from his perspective, an ideal one to do the job.

Program Results

As far as management and control were concerned, Eisenhower's decision affected only one aspect of the satellite reconnaissance program—the film-return satellite. The film-readout satellite that the Air Force had been developing was continued, still under Air Force control, at the Air Force Ballistic Missile Division. The program was given top national priority and its funding was dramatically increased. It was no longer starved for funds. The CIA-led program was soon named CORONA and the Air Force program was named SAMOS.[34] Both programs began receiving substantial funding. Although the CIA's CORONA figures remain classified, SAMOS (formerly WS-117L) received a significant increase compared to its years of neglect prior to Sputnik. It received all of the money the Air Force requested.

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[34] Day, "The Development and Improvement of the CORONA Satellite," p. 70. The Air Force satellite was initially known as SENTRY, but this name was changed to SAMOS by the fall of 1958.

Budget Figures for WS-117L/SAMOS Program[35]

1955	less than 1 million
1956	$1.5 million
1957	$3 million
1958	$3 million
1959	$105.6 million
1960	$164.5 million

But although both SAMOS and CORONA received full funding, there was a difference. While the CORONA program had been highly structured by Eisenhower, the SAMOS program was not. It remained a traditional Air Force program handled in the traditional matter. At the time, SAMOS was still lumped in with the higher priority ICBM project at Western Development Division (AFBMD). It therefore was unlikely to receive the singular focus it required to assure success. And because its hierarchy was not clearly streamlined—the Air Research and Development Command, the Strategic Air Command, and the Air Staff could still influence SAMOS—there was no way for presidential goals to reach the implementers of the program in an undiluted manner. Too many other goals, particularly those of the Air Force's Strategic Air Command, could be added to the mix.

The CORONA schedule, established in April 1958, was for first launch of a test rocket by December 1958 or January 1959, and first reconnaissance mission by June 1959.[36] The first launch did not actually occur until February, and the first reconnaissance mission until June. But both these missions were failures. In fact, the first 12 missions were all failures. Spaceflight proved harder than anyone anticipated. The program that was supposed to produce reconnaissance photos by June 1959 and end in June 1960, did not actually return images until over a year later, in August 1960.[37] But once it did, its success so impressed Eisenhower and other top administration officials (and subsequent

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[35] The figures for 1956-1958 are from Coolbaugh, "Genesis of the USAF's First Satellite Programme." The figures for 1959-1960 are from various declassified Air Force histories.
[36] Day, "The Development and Improvement of the CORONA Satellite," p. 48.
[37] Day, et. al., p. 236.

presidents), that it was not canceled until 1972. Thus, although it failed to meet its initial operational date, when it entered service it was so successful that the interim program became permanent.

Eisenhower personally approved the initial launches in the same way that he had personally approved U-2 overflights of the Soviet Union. He was briefed by his staff secretary, General Goodpaster, after each failure. Goodpaster stated that Eisenhower never wavered. Although Goodpaster himself was doubtful of the chances for the program, Eisenhower insisted that it go forward. "We have to do this," Goodpaster remembered him saying. "It's too important."[38]

SAMOS was a different story. Initially, the program was to include three satellite types, known as E-1, E-2 and E-3. Later, two more were added. Of all of these, two were canceled before flying. The others ran into problems. First flight was to take place by mid-1960 to replace CORONA. E-1 was the initial proof-of-concept system, but was supposed to provide moderately useful intelligence data from the beginning. SAMOS was to be fully operational by the fall of 1960. That is not what happened. First flight of SAMOS did not actually occur until October 1960. It failed. Only one of the total of 11 missions was successful, and the data was largely useless. But these failures require additional explanation. First of all, much of the basic technology for reconnaissance satellites had been proven by the CORONA program.[39] Therefore, SAMOS' failure rate should not have been equivalent to CORONA's, because it did not have to pioneer all new technology. More importantly, before SAMOS even began launches, top administration

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[38] General Andrew Goodpaster interview by Dwayne A. Day, March 19, 1996.

[39] For instance, many of CORONA's early failures had been caused by the rocket's second stage, known as Agena. The Agena not only helped place the rocket in orbit, but provided power, attitude control, and other services once in orbit. By the time that SAMOS actually started flying, the problems with Agena had been largely solved, and the SAMOS program benefited from the failures and lessons learned with CORONA.

officials raised severe doubts about the entire Air Force approach to satellite reconnaissance, both the technical aspects of the program and its management.[40]

By early 1960, SAMOS was still ostensibly scheduled for launch later in the year. But by late 1959, officials within the SAMOS program began to feel that the program would not be able to achieve its stated performance goals. This information reached the White House. On February 5, 1960 George Kistiakowsky, who one year before had replaced James Killian as head of the President's Science Advisory Committee (PSAC), met with national security advisor Gordon Gray to discuss the satellite reconnaissance program. Kistiakowsky informed Gray that he felt the Air Force's SAMOS program was "much too ambitious" and that resources should instead be diverted to the CIA's CORONA program, despite its problems.[41] Kistiakowsky apparently wanted a formal order from Eisenhower to study the issue, but did not get one at this time.

Three months later, on May 1, CIA pilot Francis Gary Powers was shot down in his U-2 aircraft over Siberia. Powers was flying toward the suspected ICBM facility at Plesetsk, which had never been photographed before and which was the source of much debate between CIA and Air Force officials over the existence of a "missile gap" between the United States and the Soviet Union. The shootdown immediately halted all U-2 reconnaissance flights over the U.S.S.R. and Eisenhower promised Soviet Premier Nikita Krushchev that there would be no further overflights.[42] This promise effectively eliminated the supersonic aircraft that the CIA was developing as a replacement for the U-2 to provide high resolution photographs of the Soviet Union.[43] Thus, all imagery out of the

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[40] Day, "The Development and Improvement of the CORONA Satellite," pp. 70-73.
[41] George Kistiakowsky, *A Scientist in the White House*, (Cambridge: Harvard University Press, 1976), p. 245.
[42] Michael R. Beschloss, *Mayday: Eisenhower, Khruschchev and the U-2 Affair* (New York: Harper & Row, 1986).
[43] "The U-2's Intended Successor: Project OXCART, 1956-1968," CIA historical document (taken from: Gregory W. Pedlow and Donald E. Welzenbach, *The CIA and the U-2 Program* [Washington, DC: Central Intelligence Agency, 1998]). Many involved in the program apparently held out hope that the aircraft would still be approved for deep penetration missions even after Eisenhower had promised no more

Soviet Union stopped. The only alternative left was the satellite. Just as importantly, the U-2 images were of very high quality, with ground resolution of three feet or better. Even when CORONA became operational, its best photographs were expected to have ground resolution of approximately 20 feet.[44] There was a fundamental difference in the type of intelligence which could be gained from the two systems; compared to the U-2, CORONA was severely limited as an intelligence tool.[45]

On May 26, Kistiakowsky met with the president, Gordon Gray, and Eisenhower's staff secretary, General Andrew Goodpaster, to discuss the problems with both programs. Eisenhower instructed Goodpaster to draft a directive for a study of the issue. Eisenhower clearly wanted Kistiakowsky in charge of the study and told Goodpaster to clear it with Secretary of Defense Thomas Gates. But he apparently initially ignored Kistiakowsky's suggestion that Gates set up such a group himself within the Department of Defense. Gray also informed Kistiakowsky that the CIA had no authority to establish "military requirements" for intelligence collection.[46] The primary concern for all involved, however, was the achievement of an operational satellite reconnaissance capability as soon as possible.[47]

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overflights. The belief was based upon the hope that the aircraft would be undetectable by radar. But few people held much hope of this and by 1962 the Soviets had deployed radars that made it impossible.

[44] Ground resolution is not simply the smallest object which can be seen in the photograph. It is defined as the smallest distance at which two high contrast (i.e. black and white) objects next to each other can be distinguished as separate. Thus, one foot resolution means that two white objects against a black background can be seen as separate objects when they are at least one foot apart. Generally, objects can only be *recognized* when they are three times the resolution of the image. Thus, an object which is nine feet long can only be recognized if the resolution is three feet or better. The best satellites ever used by the United States achieved a maximum ground resolution of 2.5 *inches*, although modern satellites are probably not that good. For military purposes, resolution better than 6-8 inches is largely unnecessary. Contrary to Tom Clancy and a dozen lousy spy movies, license plates cannot be read from space.

[45] The U-2 still continued to fly reconnaissance missions elsewhere, but the Soviet Union was its raison d'être.

[46] Kistiakowsky, *A Scientist in the White House*, p. 336.

[47] James S. Lay, Jr., Executive Secretary, National Security Council, Memorandum for The Special Assistant to the President for Science and Technology and the Secretary of Defense, "Feasibility of Expediting the Reconnaissance Satellite Program," May 31, 1960. White House Office, National Security Council Staff: Papers, 1948-1961, Executive Secretary's Subject File, Box 15, "Reconnaissance Satellites," Dwight D. Eisenhower Library.

On June 2, 1960, Kistiakowsky mentioned to General Bernard Schriever, by now head of the Air Research and Development Command, that he was seeking a directive from Eisenhower to study the intelligence satellite issue.[48] Schriever opposed any change in the management of the Air Force satellite program, believing that the Air Force could handle the program itself if given a free hand. Schriever had previous bad experience with Pentagon leadership standing in his way only a year before, when the Advanced Research Projects Agency had initially prevented him from developing a new SAMOS reconnaissance satellite. He thought that White House officials were about to add another layer of bureaucracy on top of the program.[49]

On June 7, Goodpaster showed Kistiakowsky a draft memo for a study that would be limited to the Air Force's SAMOS project, and would not include the CORONA program.[50] Kistiakowsky was unhappy at the restrictive nature of this directive, since it would not allow him to look at the military requirements or the management structure needed to direct space reconnaissance, which he thought were the most important issues. All he could address were the technical issues. He thought that the problems went far beyond this.

Presidential Intervention

On June 10, Eisenhower finally sent the memo to Kistiakowsky. It stated that the president wanted a report to the National Security Council that focused on several issues concerning the SAMOS satellite.[51] Kistiakowsky was placed in charge of studying the

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[48] Kistiakowsky, *A Scientist in the White House*, p. 344.
[49] Bernard Schriever interview by Dwayne A. Day, May 20, 1997.
[50] Kistiakowsky, *A Scientist in the White House*, p. 347.
[51] The memo stated that the report was to address:
a. The intelligence or "surveillance" requirements this program is being designed to fill, including the soundness of the concepts on which these requirements are based, and the resulting validity, as well as the procedures for, and supervisory control over, their preparation.
b. (1) The technical feasibility of the planned systems in relation to the requirements, development schedules and technical direction of the program, together with (2) the effectiveness of control over the

technical feasibility of the planned systems. The Secretary of Defense was assigned a study of the management of the system. But apparently Gates approved the study group and named Kistiakowsky as its chair, which placed him in overall charge of addressing *all* of the issues raised in Eisenhower's memo. The DoD (more precisely, the U.S. Air Force) would study SAMOS and report to him. Kistiakowsky assumed that this was what Eisenhower wanted all along. The study included Assistant Secretary of the Air Force Joseph Charyk and Herbert F. York, Director of Defense Research and Engineering (DDRE).[52] Kistiakowsky's review was restricted to SAMOS, and excluded CORONA (although ultimately mentioned in the report under its cover name, "Discoverer").[53]

The group received assistance from a specially established Panel on Satellite Reconnaissance. This panel was chaired by James Killian Jr. (who was MIT Corporation chairman), and Edwin H. "Din" Land, chairman of the Polaroid Corporation. Killian had previously held Kistiakowsky's position as special assistant to the President for science and technology from 1957 to 1959. He and Land were Eisenhower's foremost advisors on technical intelligence matters and both the U-2 and CORONA programs had been started at their urging. They were both members of the President's Board of Consultants on Foreign Intelligence Activities and Eisenhower held them in very high esteem. Their presence on the Panel essentially meant that its recommendations would be virtually sacrosanct. Also serving on the panel were William O. Baker of Bell Labs (a designer of numerous reconnaissance cameras), Carl Overhage of MIT's Lincoln Research Institute, Harvard

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scope and characteristics of the operational systems, with particular attention to means for assuring early and efficient utilization of such systems.
President Dwight D. Eisenhower to George Kistiakowsky, 10 June, 1960, White House, Office of the Staff Secretary Records, 1952-61, Subject: Alphabetical, Box 15, "Intel Matters (13)," Dwight D. Eisenhower Library.

[52] York suffered a heart attack in August and was replaced by his deputy, John H. Rubel.

[53] Another review, of which Kistiakowsky was not part, involved the consolidation of the photo-interpretation divisions of the three military services with the CIA's Photo Interpretation Center (PIC). R. Cargill Hall, "The Eisenhower Administration and the Cold War: Framing American Astronautics to Serve National Security," *Prologue*, Vol. 27, No. 1, Spring 1995, p. 68 and p. 72.

University scientist Edward M. Purcell, and Richard Bissell, the CIA's Deputy Director for Plans and also the head of the CORONA program.[54] After his management of the U-2 program, Bissell was virtually a legend within the intelligence community, even despite the recent shootdown of Gary Powers.

In mid-July, Baker, who also headed a defense advisory group, briefed York about the technical problems surrounding SAMOS. Baker informed York that the special panel had determined that the SAMOS program should be controlled at both the operational and executive levels by an organization "capable of sponsoring both military and civilian peacetime utilization, and of expeditiously and effectively exploiting the results."[55]

The group felt that a new or existing office within the Office of the Secretary of Defense (OSD) should be designated to manage the program. The Air Force would still conduct research and development activities, but the program would be run by the Secretary of Defense's office. This mirrored similar recommendations from other agencies inside and outside the DoD. In addition to running the program from an office within OSD, others had proposed that it be run by an interdepartmental agency and by a special committee of the National Security Council. Those making these proposals were concerned that the Air Force was running the SAMOS program to serve Air Force needs instead of "national" needs.[56] The Air Force was apparently willing to accept lower resolution imagery and fewer overall images provided that it could get the imagery back faster. Since approximately 1958, SAMOS' requirements were centered primarily upon bomb damage assessment of SAC nuclear strikes against the Soviet Union. SAC wanted to see if Russian cities were still in existence after an opening strike, or if further attacks on

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[54] Edward C. Kiefer and David M. Mabon (eds.), *Foreign Relations of the United States, 1958-1960, Volume III National Security Policy; Arms Control and Disarmament* (Washington, DC: U.S. Government Printing Office, 1996), p. 458.
[55] Carl Berger, *The Air Force in Space Fiscal Year 1961* (Washington, DC: Air Force Historical Division Liaison Office, 1966), p. 38.
[56] Ibid.

the targets were needed. The resolution requirements for such satellites were fairly low but the data had to be returned immediately. This led to the decision to develop film readout, which now proved impossible to achieve. National needs were for higher resolution photos that could be returned at a slower pace.

In 1959 the military services had fought to regain control of their space programs from ARPA because they wanted their own interests to prevail in the design of new systems. They succeeded in arguing that they should be able to decide on their own which programs to fund or not to fund. Now a committee was suggesting taking satellite reconnaissance away from the Air Force. The Air Staff opposed these proposals throughout July and August, attempting to prevent a repeat of the ARPA experience.

On July 29, the Panel on Satellite Reconnaissance prepared a draft report titled "The SAMOS Program." Despite the fact that this was only a draft, it illustrates many of the problems that the group identified with the Air Force's satellite program. Much of its blunt language was toned down in the final report, while its primary recommendations remained.[57]

The draft highlighted the distance between the military and the intelligence communities, and the Air Force's tendency to pursue performance at all costs. Like the bomber and the ICBM, the Air Force was interested in pursuing beyond the state of the art rather than in simply achieving the mission at hand. The Air Force was not interested in reconnaissance systems for *intelligence* purposes, at least in the way that national policy makers defined intelligence. They wanted a weapons system. The report noted that it was not until July 5, 1960 that the U.S. Intelligence Board issued its "Intelligence Requirements for Satellite Reconnaissance" which defined the needs of the intelligence community. The USIB requirements indicated that in order to accomplish its first priority objective (the

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[57] "The SAMOS Program," July 29, 1960, Records of the Special Assistant for Science and Technology, Box 15, "Space [July-Dec 1960]," Dwight D. Eisenhower Library.

location of suspected ICBM launch sites), the photography had to be such "that ground objects measuring no more than 20 feet on a side can be recognized by a photographic interpreter." This meant a photographic resolution of 5-8 feet (compared to the CORONA search system's anticipated resolution of 25 feet). In addition, the system also needed to photograph a substantial portion of the USSR covered by the rail net before the end of 1962. The USIB report also stipulated that the satellites fly approximately once a month. Secondary priority was for the ability to recognize objects at ICBM sites approximately 5 feet on a side—a ground resolution of approximately 1.5-2 feet.[58]

The report's authors concluded that the existing SAMOS program, consisting of the E-1, E-2 and E-5 cameras (E-3 and E-4 had been canceled), was incapable of producing the imagery that was needed by the intelligence community. Because SAMOS was so clearly incapable of meeting the USIB requirements, the panel suggested that the program could achieve its own objectives (simply demonstrating the technology) without even taking photographs and could do so without the use of expensive Atlas-Agena rockets, or the over-taxed Vandenberg launch facilities. The panel also questioned the utility of the electronic intelligence, or "ferret" aspect of the program, which had been added in 1958. Although it was likely to produce useful intelligence information, this information was not considered to be extremely valuable (probably in comparison with information which could be obtained from aircraft flights around the periphery of the Soviet Union which were used to locate and identify radar sites).[59] What the report did not mention but which the report's authors undoubtedly knew, was that the U.S. Navy had already, in record time, developed and deployed an operational ferret satellite. The satellite, named GRAB, was approved by Eisenhower in August 1959 and flew in June 1960.[60] The Air Force's performance in

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[58] Ibid., pp. 2-3.
[59] Ibid., p. 5.
[60] See Dwayne A. Day, "Listening From Above," *Spaceflight*, August 1999; *GRAB: Galactic RAdiation and Background, First Reconnaissance Satellite*, brochure, Naval Research Laboratory, June 1998.

satellite reconnaissance therefore did not appear very impressive compared to either the CIA *or* the Navy.

Finally, the panel suggested that a new satellite be developed with performance characteristics roughly equivalent to the E-5 (i.e. 2-foot resolution), but exploiting advanced recovery techniques. This included recovery over land.[61]

The last part of the draft report was on the technical management of the SAMOS program, and here the panel did not mince words: "The DISCOVERER-SAMOS-MIDAS program has, in the past, suffered from poor management... Much of the trouble in the past and at present can be attributed to divisions of responsibility and authority within the Air Force, between ARDC on the one hand and the AMC [Air Materiel Command] on the other." The report noted that this had been a problem for other Air Force programs. Indeed, it had been a problem with the ICBM program in the early 1950s—before the White House had intervened to rectify the situation.

On August 18, Kistiakowsky met with Charyk, Land and Overhage in Cambridge, Massachusetts. Kistiakowsky was not happy with the progress of their efforts and told them so.[62] Although his particular objections with the report are not known, it is possible that one objection was that the report blatantly assigned blame (such as the feud between the Air Force commands) and was likely to only exacerbate tensions rather than solve problems. Kistiakowsky wanted solutions, not finger-pointing.[63]

Over the course of the weekend, the group managed to produce a much more concise report. Kistiakowsky stated "we will make a unanimous presentation, and the Air

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[61] "The SAMOS Program," pp. 8-9.

[62] Kistiakowsky, *A Scientist in the White House*, p. 384.

[63] On that same day, CORONA Mission 9009 (officially known as Discoverer XIV) was launched from Vandenberg Air Force Base, California. The satellite and camera operated properly and the reentry vehicle was snagged out of the air by an airplane over the Pacific. The film was flown to Hawaii and then to California and finally to Rochester, New York, where it was processed by Eastman Kodak. It was then sent to Washington. The intelligence data that it provided was significant, allowing intelligence analysts to identify multiple new airfields throughout the Soviet Union. See Day, "The Development and Improvement of the CORONA Satellite," p. 61.

Force, i.e. Charyk, have been sufficiently influenced by our findings to develop a plan which both technically and in terms of management will be endorsed by our panel."[64] They discussed their recommendations with Bissell on August 22, and then Kistiakowsky briefed Gates two days later.[65]

The next day, at quarter after eight in the morning, Kistiakowsky, James Killian, Din Land, Allen Dulles and national security advisor Gordon Gray met with the president. Land unrolled a reel of developed film from CORONA Mission 9009 across the carpet of the Oval Office to show the president. Eisenhower was impressed. At this point he also approved an upgraded version of the CORONA camera system.[66]

At 8:30, the men convened a formal National Security Council meeting.[67] Killian made the opening remarks and then had Charyk present the report. The majority of the

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[64] Kistiakowsky, *A Scientist in the White House*, p. 384.

[65] Hall, "The Eisenhower Administration and the Cold War: Framing American Astronautics to Serve National Security," p. 68.

[66] Highly secret programs like CORONA were often referred to very vaguely in official minutes. An August 25, 1960 memo from Kistiakowsky to DCI Allen Dulles states "In view of the conversation in the President's office prior to the special meeting which took place this morning at 8:30, I believe that you are fully authorized to proceed with a program of improvements to the system which was discussed with the President." G.B. Kistiakowsky to Allen W. Dulles, Director, Central Intelligence Agency, August 25, 1960, Records of the Special Assistant for Science and Technology, Box 15, "Space [July-Dec 1960]," Dwight D. Eisenhower Library. What exactly this new upgrade was is not clear. The CORONA C"' ("C Triple Prime") camera is the most likely candidate, but undated and very cryptic notes taken by Goodpaster in August 1960 refer to 9 additional CORONA missions using a "dual" system. This seems to be the later "MURAL" camera which used two cameras to achieve stereoscopic coverage. Officially, the MURAL camera was not started until early 1961. See: Undated notes, Office of the Staff Secretary: Records of Paul T. Carroll, Andrew J. Goodpaster, L. Arthur Minnich and Christopher H. Russell, 1952-61, Subject Series, Alphabetical Subseries, Box 15, "Intelligence Matters (18) [August 1960]," Dwight D. Eisenhower Library.

[67] Those invited to the meeting included: President Eisenhower, Vice President Richard Nixon, Secretary of State Christian A. Herter (Herter apparently did not attend but was represented by Acting Secretary of State C. Douglas Dillon), Secretary of Defense Thomas S. Gates, Director of the Office of Civil and Defense Mobilization Leo A. Hoegh, Chairman of the Joint Chiefs Nathan F. Twining, Director of Central Intelligence Allen W. Dulles, Special Assistant to the President for Science and Technology George B. Kistiakowsky, Special Assistant to the President for National Security Affairs Gordon Gray, Assistant to the President Major General Wilton B. Persons, White House Staff Secretary Brigadier General Andrew J. Goodpaster, Assistant White House Staff Secretary Lt. Colonel John Eisenhower, Executive Secretary of the National Security Council James S. Lay. Others who attended were Director of the Bureau of the Budget Maurice M. Stans, Undersecretary of the Air Force Joseph V. Charyk, John Rubel of the Department of Defense, James R. Killian of the Science Advisory Committee, Edwin Land (who was listed as "Consultant, Office of the Special Assistant for Science and Technology"), and H.J. Waters (also listed as a consultant to the Special Assistant for Science and Technology). This list is provided for a reason. It demonstrates how "open" the secret, but overt SAMOS program was. In contrast, CORONA meetings never involved more than six people, including the president. See: "List of Persons Invited to the Special

report was a discussion of the limitations of the film-readout version of the SAMOS program.

Unlike the draft report, no specifics concerning existing camera systems were mentioned.[68] The final report stated: "The overriding intelligence requirement at the present time is information on the operational status of Soviet missile launch sites. This requires photographs of a very high resolution—high enough to enable a skilled photo-interpreter to recognize and identify the objects of interest in a missile launch site."[69] With the U-2 grounded, the United States now needed a reconnaissance satellite that could take its place.

In addition to these technical recommendations, the committee also made a surprisingly understated but nevertheless clear recommendation concerning the management, and hence the structure, of the SAMOS program. Unlike the earlier draft, which suggested several possible management solutions, the final report was more focused:

> We further recommend that this program be managed with the directness that the Air Force has used on occasion, with great success, for projects of overriding priority. We suggest that this can best be accomplished by a direct line of command from the Secretary of the Air Force to the general officer in operational charge of the

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NSC Meeting in the Conference Room of the White House, at 8:30 a.m. to 10 a.m. to Discuss the Reconnaissance Satellite Program and SAMOS," and "Off the Record: Special Meeting of the National Security Council to be Held in the Conference Room of the White House from 8:30 a.m. to 10:00 a.m., Thursday, August 25, 1960," contained in National Security Council Staff Papers, 1948-61, Executive Secretary's Subject File Series, Box 15, "Reconnaissance Satellites [1960]," Dwight D. Eisenhower Library.

[68] CORONA was never discussed in NSC meetings. All records of CORONA in Eisenhower Library files indicate that it was always discussed in private with a select group of people, usually Eisenhower, Land, Killian (or later, Kistiakowsky), Director of Central Intelligence Allen Dulles and occasionally program director Richard Bissell, with General Goodpaster present to record the meeting. It is surprising that the Panel's report does not mention the SAMOS E-5 and E-6 systems then under development. This may have been because their technology was so similar to that of CORONA that Kistiakowsky did not want them mentioned in the NSC.

[69] "*Report by the Special Panel on Satellite Reconnaissance to President Eisenhower*," August 25, 1960, contained in *Foreign Relations of the United States, 1958-1960, National Security Policy; Arms Control and Disarmament*, (Washington, DC: U.S. Government Printing Office, 1996), p. 454.

> whole program, with appropriate boards of scientific advisers to both the secretarial level and to the operational level. The general officer in command would look to associated military boards for support in the execution of his plans. We recommend this extraordinary type of organization to execute the program because we are convinced that the situation presents an unusual combination of urgency and inherent amenability to a direct approach.[70]

This management structure would essentially mirror the one established for the CORONA program, but within the Air Force, not CIA. Instead of the multiple layers of approval required for any decision within the SAMOS program, all decisions made by the program officers would require only the approval of the head of the office. Thus, the program that was supposed to replace CORONA was now made to look much more like CORONA, in both its technical and managerial approaches to satellite reconnaissance.

There were two major outcomes of the August 25 meeting, one programmatic, the other managerial. The first was the beginning of a new reconnaissance satellite program initially known only as Program 206 and later given the designation GAMBIT.[71] The other major outcome was the establishment of a new office for managing the Air Force's reconnaissance satellite programs. On August 31, Secretary of the Air Force Dudley C. Sharp signed Secretary of the Air Force Order 115.1 establishing the Office of Missile & Satellite Systems within his own office. The director of the office was to assist him "in discharging his responsibility for the direction, supervision and control of the SAMOS project" and also responsible for "maintaining liaison with the Office, Secretary of Defense and other interested Governmental agencies on matters relative to his assigned responsibilities."[72]

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[70] "*Report by the Special Panel on Satellite Reconnaissance to President Eisenhower*," p. 458; Kistiakowsky, *A Scientist in the White House*, pp. 387-388.

[71] It maintained the unclassified designation Program 206 until it was replaced by the KH-8 in 1967.

[72] Secretary of the Air Force Order 115.1, "Organization and Functions of the Office of Missile and Satellite Systems," August 31, 1960.

The same day, Sharp signed Secretary of the Air Force Order 116.1. This designated Brigadier General Robert E. Greer, then Assistant Chief of Staff for Guided Missiles, as Director of the SAMOS project. Greer was also appointed as Deputy Commander of the Ballistic Missile Division. He was to establish a project office at the California headquarters of AFBMD (essentially the SAMOS office, excluding the offices responsible for the MIDAS and Discoverer programs) and carry out the development of reconnaissance satellites. Greer's chain of command was specifically stated: "The Director is responsible to and will report directly to the Secretary of the Air Force."[73] The Air Staff was not to be briefed on the progress of the program. It was placed on a strictly need-to-know basis. This controlled both the hierarchy (what orders and goals reached the implementing agent) and information that came out of the agent. If top Air Force generals did not know about the program, they could not complain to Congress about it.[74]

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[73] Secretary of the Air Force Order 116.1, "The Director of the SAMOS Project," August 31, 1960.

[74] What is equally important about this period in August 1960 is what did *not* happen—the CORONA program, which was by now achieving its first success, was not turned over to the Air Force and its newly-created office. In fact, the day after the August 25 briefing that established the Office of Missile and Space Systems within the Pentagon, Eisenhower approved further upgrades to the CORONA satellites then being procured by the CIA. Thus, Eisenhower saw a continued role for the CIA in satellite reconnaissance even as he was considering management changes for what was still planned as its replacement. Eisenhower approved continued CIA development of reconnaissance satellites.

CORONA had begun as an "interim" program, but its difficult development meant that the initially approved batch of satellites and rockets was virtually used up before the program achieved a success. The program required an extension if it was ever going to achieve any kind of success. Its programmatic fate was helped by both the downing of the U-2 in May 1960 and the continued schedule slips and eventual cancellation of the program that was supposed to replace it. So Eisenhower continued it and made it clear that he viewed the mission as too important to be abandoned. This same explanation accounts for why Eisenhower continued the program in August 1960. But it does not account for why he kept it within the CIA instead of turning it over to the Air Force. The most logical explanation seems to be that CORONA was working, whereas the creation of the Office of Missile and Satellites Systems was required in large part because the Air Force's SAMOS program was *not* working. Day, "The Development and Improvement of the CORONA Satellite," p. 62. There is another example of a situation similar to this in January 1961, shortly before Eisenhower left office. Eisenhower and members of the National Security Council were discussing the establishment of a National Photographic Intelligence Center. One of the key issues was whether such a center should be under CIA or Department of Defense control. Eisenhower saw a need for ensuring that reconnaissance photographs reached the military services quickly and was not averse to the DoD controlling the new center. But he also acknowledged that the current center was working fine under CIA control and his inclination was to leave it where it was rather than attempt to change things. "Discussion at the 474th Meeting of the National Security Council, Thursday, January 12, 1961," January 13, 1961, pp. 6-10.

Agency Design as a Means of Principal Control

Why was CORONA successful and SAMOS a failure? From a bureaucratic politics standpoint, the entrance of the CIA into the satellite reconnaissance field should have increased rivalries and affected the CORONA program. But the Air Force showed no interest in sabotaging the CORONA development. Furthermore, the problems with SAMOS were not the result of bureaucratic politics, nor were they merely technical. Rather, they reflected the way in which the program was managed.

The differences between the programs which explain their success or failure were structural. In the case of CORONA, a single-mission, streamlined agent, operating entirely in secret, was created to carry out the mission. It stayed entirely focused on the mission that it was given. In contrast, the Air Force managed the SAMOS program within a multi-mission bureaucracy where it was influenced by many outside agendas and where it did not receive the attention that it required. As a result, it was unable to stay focused upon a single overriding goal. The proliferation of satellite designs was a consequence of the loss of focus.

The Air Force's treatment of SAMOS was not unusual. The service had been only lukewarm to the idea of satellite reconnaissance prior to Sputnik. It continually underfunded the program. In Fiscal Year 1957, the Air Force WS-117L satellite office requested $39.7 million. It received $3 million. The Secretary of the Air Force, a presidential appointee, was opposed to the program at this time. It could therefore be argued that it was the administration itself that held back the WS-117L program prior to Sputnik, although there certainly was no support for it from the uniformed Air Force either, which did not have much use for reconnaissance (witness the U-2 experience). Thus, there was no clear direction to the program at this time and no strong advocates who wished to see it succeed.

After Sputnik the situation is much clearer. WS-117L was split into two reconnaissance programs: CORONA and SAMOS. CORONA was under control of the CIA and SAMOS was under control of the Air Force. Both programs received full funding and support from the president, but the president intervened only in CORONA. Eisenhower was clear and forceful about his views on the program: he thought it was of the highest national priority and that it should be handled by a special organization run by the CIA.

The program results for both CORONA and SAMOS are clear. CORONA did *not* produce photographs by June 1959, its originally intended date. It ultimately fell a year behind schedule and was over budget by a still-classified amount. During this time, Eisenhower's support never wavered. He always felt that it was one of the most important projects that the country was undertaking.[75] But eventually it did produce usable intelligence data and did so in only two and a half years. It succeeded as an "interim" program by producing data before its replacement. Its successes over the years were so great that the intelligence community called it "revolutionary."[76] Eisenhower was clearly happy with the program results, recognizing that the schedule slip was due more to the technological difficulties that had to be overcome than poor management or any other causes. Certainly one measure of success is how pleased the principal is with the outcome. Eisenhower was very happy.

SAMOS, by contrast, was a failure. The SAMOS flights that did occur were almost all failures, despite the fact that they had the CORONA experience to build upon. Even before it made its first flight, White House officials recognized that the program was technologically off track. They, not the Air Force, intervened and canceled the non-productive aspects of the program. White House officials also removed the program from

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[75] General Andrew Goodpaster interview by Dwayne A. Day, March 19, 1996.
[76] Kevin C. Ruffner, *CORONA: America's First Satellite Program* (Washington, DC: CIA History Staff, 1995).

Air Force control, placing it under a new management structure that was responsive to national interests, not Air Force interests.

The Air Force's approach to WS-117L and SAMOS is similar to its early approach to the ICBM, as well as its overall approach toward the procurement of strategic bombers: the Air Force continually demanded performance requirements beyond those which could be achieved with the state of the art. In the case of SAMOS, it demanded performance (such as near-real time intelligence delivery) that ultimately proved impossible to achieve at the time (and did not become possible until the mid 1970s). The SAMOS program also continued to grow over time to include more and more missions. Its goals moved. It clearly lacked focus. The Air Force was unwilling to lower its performance criteria and was simultaneously increasing the complexity of its program. Presidential intervention, first creating CORONA and later intervening with SAMOS, rectified this situation. It made it possible to achieve mission success.

Presidential intervention to create the CORONA program clearly moved satellite reconnaissance forward rapidly. The SAMOS program was essentially the Air Force effort with full funding, but lacking significant presidential intervention. Eisenhower's decision to make CORONA totally covert by managing it within CIA where he was the only principal with access to information on the program meant that congressional interference was nonexistent, as were leaks about the program. The CORONA program was a highly focused effort that operated under different rules than other satellite programs. The president was therefore able to exert control over the bureaucracy and achieve his policy goals. In the case of SAMOS, Congress never directly interfered with the program. But it still required updates on the progress of the effort and it still possessed the ability to interfere if it chose to do so.

The Secrecy Framework

President Eisenhower's decision to place first the U-2 and later the CORONA program under the control of the CIA was careful and deliberate. It reflected a distrust of the parochial interests of the Air Force and the ability of Air Force leaders to appeal to another principal—Congress—if they did not like what the administration was doing. Eisenhower felt that the Air Force could accomplish the missions, but that it would not conduct them in the best way possible. One of his primary concerns was the natural propensity of the Air Force to brag about its programs in public forums in order to build support for them.[77] He was distressed to open up a magazine and see an advertisement for an Air Force bomber. From his perspective, this lobbying for defense was distasteful and actually provoked an arms race with the Soviets. The services had an inherent bias toward exaggerating the threat. Placing responsibility for intelligence collection within a single branch of the service was dangerous. It could also lead to increased competitiveness with the other services. The end result would be multiple service-based intelligence agencies all competing with each other to accomplish roughly the same mission—strategic assessment of the Soviet Union.

The best example of how the president's control of information worked is apparent in testimony given by General Bernard Schriever in hearings before the Senate Armed Services Committee on February 2, 1960. This was a closed session, although an edited transcript of the meeting, containing many deletions, was released later. Schriever made only brief mention of the SAMOS program, confirming that it was a reconnaissance satellite. He then mentioned the Discoverer satellite program, which was the official unclassified cover for the CORONA reconnaissance satellite. Schriever stated: "In that

[77] General Andrew Goodpaster interview by Dwayne A. Day, March 19, 1996.

program we have orbited six out of eight attempts."[78] In reality, all eight missions had been failures of the CORONA program. Most of the cameras had failed in orbit. Congress, upset about Soviet advances in space, might easily have used this information to embarrass the administration, like it had after Sputnik. However, the president's use of secrecy worked well. Schriever's comment was technically accurate—the Discoverer program had indeed *orbited* a number of satellites, but he never told Congress about the classified problems.

Schriever's misleading testimony was not a typical case of an agent providing inaccurate information to a principal. This was a case where the president's structural control of information resulted in him receiving better and more accurate information than Congress on the status of a program. Congress received misleading information *by design*. There are other examples, but this incident with Schriever highlights how one principal can affect the information that flows to the other principal.[79]

There is little question that overhead reconnaissance in general, and satellite reconnaissance in particular, quickly became one of the most highly protected and highly respected government activities. The secrecy in which it was conducted was extreme. A massive bureaucracy with a budget that eventually ran in the billions of dollars and which was larger than any of the other acknowledged intelligence agencies (such as the CIA and the National Security Agency) did not publicly exist for 30 years.[80] The existence of the organization that managed satellite reconnaissance did not leak to the press for ten years and

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[78] General Bernard Schriever, U.S. Senate, *Missiles, Space and Other Major Defense Matters*, Hearings Before the Preparedness Investigating Subcommittee of the Committee on Armed Services, Eighty-Sixth Congress, Second Session, 1960, p. 60; 63.

[79] Another example concerned the loss of SAMOS 1 later in the year. This loss was fully reported to the Congress whereas CORONA's losses were not. U.S. House, *Science, Astronautics and Defense*, Committee on Science and Astronautics, Eighty-Seventh Congress, First Session, 1961, p. 63.

[80] In 1996, four years after the existence of the NRO was declassified, the budgets of U.S. intelligence agencies remained classified. Independent estimates of their budgets were: CIA—$3.1 billion; NSA—$3.3 billion; NRO—$6.4 billion. Thus, the NRO budget is equal to the *combined* budgets of both the CIA and the NSA.

the United States did not officially acknowledge the fact that it operated reconnaissance satellites until the late 1970s. Perhaps most startling is the fact that the existence of the satellite reconnaissance effort was not revealed to the full Senate Armed Services Committee until 1967, and then only at the discretion of the president. Presidents Eisenhower, Kennedy and Johnson never had to inform Congress of their successes and failures in this field or the expenditure of billions of dollars to run a space program entirely in secret.

It is not a new revelation that presidents have tried to keep certain operations secret from Congress. The entire history of covert action has included frequent cases where even very large military operations—such as the Bay of Pigs or the Iranian or Guatemalan covert actions—have been kept secret from the legislature. What is new is the revelation that this effort at concealment has not simply been an attempt to prevent presidents' plans from being thwarted for military operations. It has also been a management device and part of the political strategy by which presidents implement their policies.

Conclusion

The overall development of satellite reconnaissance closely follows a principal agent model of government decision making. It initially languished, underfunded and largely ignored until 1958. Although some Air Force officials showed interest in its potential, the leadership never supported the program. Similarly, it was not a mission that the CIA fought to obtain. However, once the president and his representatives intervened to create the CORONA program, it moved rapidly toward operation. The same scheme of events was largely repeated for the GAMBIT program that replaced the failed SAMOS—after presidential intervention in August 1960, a previously aimless and mismanaged program responded dramatically and ultimately proved highly successful.

Similar to the U-2 program, CORONA and GAMBIT were not handled by the traditional bureaucracy but were instead given to highly focused organizations that operated by different rules, including a highly streamlined hierarchy and no information ties to the Congress. The secrecy that was imposed upon the programs prevented the Soviets from knowing what the United States was doing. But it also prevented the more immediately visible leaks of information that flowed from congressional knowledge and oversight. Lacking this outside intervention, the agent was able to proceed with its mission unobstructed and to succeed dramatically. An agent responded to the priorities of the principal.

SAMOS, however, was an abject failure. The longer the program progressed, the more it seemed to stray from any coherent goals. It suffered a large number of failures. But even before these occurred, the president's advisors determined that the program was in trouble and in need of intervention. The explanation for this is that SAMOS was never carefully structured for success. It was never focused upon a single mission and isolated from external influences. Its wandering was not the result of congressional interference, but it represented what could happen when a principal did not pay close attention to the agents that carry out its policies.

Chapter 8
Conclusion

The previous cases have shown that structure can determine the success or failure of a mission. When President Eisenhower maximized the structure of certain programs, he increased his ability to successfully achieve his goals. The most successful programs—the Atlas ICBM, U-2, and CORONA—all exhibited very similar structural characteristics. They were all managed by single-mission agents. They were all managed by highly hierarchical agents with streamlined chains of command. And they all featured strict information control. In the U-2 and CORONA programs, information control was near absolute.

The IRBM program was less successful. Although it achieved its technical goals, the lack of information control that resulted from two competing programs caused problems for the president, requiring constant monitoring. The president was unhappy with the program's results because it created political problems for him and threatened his power.

The SAMOS and pre-1954 ICBM programs were least successful. In these cases, structure was not controlled by the principal. As a result, the goals of the programs were not clear and tended to wander. In addition, there were multiple influences on the progress of the programs. Although Congress never directly interfered with these programs, its general interests in defense did have indirect effects. For instance, in the case of the pre-1954 ICBM, Congress' interests in fostering the continued production of bombers encouraged the Air Force's predilection for bombers over the ballistic missile.

These cases all focused on a limited period of time and largely concerned a single president. The powers of the presidency have changed over time. Some argue that they diminished substantially, particularly after Watergate and Vietnam. Whether the absolute powers of the president have diminished or not, it is clear that the powers have changed.

Some of the tools that Eisenhower used in the 1950s are no longer available, or are available in different ways today. This study represents only a first step in the application of principal agency to the presidency and national security policy.

As the previous cases demonstrate, American national security policy can be explained by the principal agent model much better than it can be explained by the bureaucratic politics model. Agents—bureaucracies—*do* respond to direction from principals. Even when bureaucracies have shown resistance to the goals that the principal has established, they can be altered to produce the outcomes that principals desire. In fact, on occasion they can respond so surprisingly well, achieving such great results, that the principal may come to expect this superior performance in the future and be frustrated when he doesn't get it.

What these cases have demonstrated is that presidents, not simply Congress, can effectively serve as principals in a principal agent relationship. They can get bureaucracies to do what they want—to enact their goals essentially the way that they want them to, without substantial shirking by the agent. Furthermore, these cases demonstrated that presidents, like Congress, also use structure to control the bureaucracies that enact their policies.

To date, the majority of research on principal agency has focused on congressional control of regulatory bureaucracies. But the examples of the ballistic missile and aerial and satellite reconnaissance demonstrate that principal agency can also explain the relationship between presidents and the military bureaucracy as well. Furthermore, these examples also demonstrate that structural control is used by the president in different ways and for different purposes than it is used by Congress. Whereas Congress often uses structure to enfranchise constituencies and to slow down policy making, the president often uses it to disenfranchise constituencies and focus the agent on a clear goal and speed up the policy

making process. He also uses structure to limit Congress' knowledge of agents, and hence its ability to control those agents.

In many of the previous cases, structure made it more difficult for Congress to affect outcomes. This was by design. It was the intention of the president to achieve this result. Congress had greater difficulty in affecting these various programs because it often did not know what was happening in them. The president wanted it this way. Congress' constitutionally delegated powers for controlling the military are substantial. The best strategy for the president to achieve his goals is to reduce Congress' ability to use the powers that it has. Any actions that avoid legislation or regulation are preferable to those that take the struggle to Congress' arena.

The U-2 airplane example is a perfect case in point. President Eisenhower could have briefed the relevant congressional committees after it was obvious that the Soviets were aware (and had protested) the U-2 overflights in summer 1956. Yet Eisenhower did not brief Congress on the aircraft during CIA or DoD budget authorizations in 1956, 1957, 1958, or 1959. In fact, he waited until after Gary Powers was shot down—four years later—before he had the Director of Central Intelligence inform a substantial number of congressmen about the existence and results of the program. Indeed, by this time, more members of the media than congressmen knew about the existence of the spyplane (and they kept quiet).[1] The Soviets also clearly knew about the aircraft, which they tracked repeatedly and tried to shoot down.

Why did Eisenhower keep the Congress in the dark? Because it is not to the president's advantage to supply the Congress with information. Congress' intentions and interests are public because the only way that Congress can act is in public. But the

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[1] Michael R. Beschloss, *Mayday: Eisenhower, Khruschchev and the U-2 Affair* (New York: Harper & Row, 1986), pp. 56-57.

president's interests and intentions, and even his actions, can be and often are hidden.[2] This is an advantage that the president often exploits.

In many of the previous cases, the president used new agents for his missions even though existing ones could have accomplished the mission. The Western Development Division which developed the ICBM was not simply a unit of the Air Force's existing R&D command supplied with more money and better people. It was an entirely new agent with only superficial ties to the old agent. The agent employed to develop the U-2 and later the CORONA reconnaissance satellite program was not simply the CIA (which, after all, had no inherent technical capabilities), but a special agent that reported to the highest levels of the White House and merely utilized aspects of the CIA, like its security, budget and personnel. Why did Eisenhower do this? He created these agents because it gave him greater control and increased the likelihood of success. The existing agents were not ideal for many reasons.

The electoral considerations of both Congress and the president define how they do their jobs and why they do what they do. Congress more often responds to regional incentives before strategic ones, whereas the president responds to strategic concerns before regional ones. This explains the certain degree of distance that Congress gives the president in enacting his national security policies. As long as Congress' regional and local interests can be satisfied—through the disbursement of defense contracts, for

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[2] According to Terry Moe, one of the reasons why principal agency so often focuses on Congress is that Congress' interests can be discerned by observing voting coalitions, whereas the president's interests are harder to discern (or accept at face value). But to date, little has been written on how this phenomenon may actually have an influence on policy making itself. Because nobody knows what the president is thinking or planning, the president can have an advantage over Congress. There are several examples of this. For instance, Fred Greenstein, in a highly-regarded book, noted that President Eisenhower exploited his reputation for being detached and uninterested in details. The extensive documentary evidence from Eisenhower's presidency reveals a man who was deeply knowledgeable about and active in the actions of his administration. Eisenhower, according to Greenstein, used his opaqueness to tactical advantage. Similarly, Richard Nixon pursued the "madman strategy" in the Vietnamese peace talks, trying to convince his enemies that he was crazy and unpredictable so that they would be more willing to grant him concessions. See: Fred Greenstein, *The Hidden Hand Presidency* (New York: Basic Books, 1982).

instance—Congress is willing to allow the president to make the major decisions concerning national security policy.

But the president is also interested in *taking* more autonomy than Congress is willing to give him. That is why, when possible, Eisenhower chose options that did not require legislation, congressional approval, or even congressional involvement. Why involve Congress at all if you can avoid it? Presidents often find Congress' admittedly limited interests in national security policy to be bothersome. They view budget appropriations and hearings as "micro-management" and "meddling." As a result, they seek to establish relationships with agents that limit congressional interference as much as possible. They are constantly looking for innovative means of avoiding dealing with Congress at all.

As David Lake has noted, the "foreign policy executive" exists at the intersection of domestic and international political systems and regulates interactions between the two.[3] This executive—headed by the president—attempts to redefine issues as foreign policy concerns and build transnational coalitions that support its preferred policies.[4] As Lake and others have argued, the president does not simply respond to societal demands, he acts strategically. The executive acts in the interests *for* society, not *of* society.[5] But doing so is not easy and part of the president's never-ending task is to look for means of making it easier to do what he wants to do in general.

Unfortunately for presidents, they cannot always avoid Congress. In some ways the cases which were discussed in the previous chapters were exceptional. They represented issues that were so important to the president and his advisors that the president was willing to expend considerable time and effort seeking ways of avoiding congressional

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[3] Felix Gilbert, ed., *The Historical Essays of Otto Hintz* (New York: Oxford University Press, 1975).
[4] David A. Lake, "The state and American trade strategy in the pre-hegemonic era," in G. John Ikenberry, David A. Lake, and Michael Mastanduno, *The State and American Foreign Economic Policy* (Ithaca, NY: Cornell University Press, 1988), Lake, p. 39.

influence. This is not always possible, or necessary. For the primary activities of the defense bureaucracy—budgeting major programs, directing policy—the president cannot simply write Congress out of the equation. Congress may in general be willing to give the president leeway in managing the national security bureaucracy, but it can and will oppose him on some issues. But the attributes that these cases demonstrated—the president's desire to avoid Congress as much as possible and the use of structure to reduce Congress' influence—are always present no matter what the issue.

This represents the next major step in developing a more comprehensive principal agent model of national security. It raises some new questions. First, how does the Congress attempt to get what it wants from the defense bureaucracy? Second, what does Congress do when its goals and the president's goals directly conflict? Is it still possible for one side or the other to prevail when they are at odds with each other, or is the inevitable result a stalemate?

Where both the bureaucratic politics and principal agency models of behavior have fallen short is by portraying the political struggle as a clash primarily between elected officials and bureaucracies. This tends to elevate the importance and independence of the bureaucracy at the expense of the elected officials. Both of these theories have inherent biases in the way they view the political environment. Bureaucratic politics too often focuses upon the executive branch at the expense of the legislature. Principal agency almost exclusively focuses upon the legislature at the expense of the executive. Both, in other words, generally ignore the role of one or the other elected bodies. This results in a flawed portrayal of American government.

The struggle of politics is not primarily between elected officials and bureaucracies, but between elected officials *through* the bureaucracy. Once the principal agent model is refined to take this into account, some of its assumptions begin to change. How is it

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[5] Ibid., p. 36.

possible to tell if a bureaucracy is shirking (i.e. not doing work) rather than following the direction of another principal which desires that it resist the first principal?

One thing that is apparent from the preceding case studies is that the less influence that principals exert directly over agents—the less they try to control them—the more the agents' actions look like the bureaucratic politics model. This is not to say that bureaucratic politics is what happens when elected officials are not paying attention. But what it does indicate is that the principal agent relationship is heavily influenced by the degree of intervention by the principals. If a principal is actively involved in directing and monitoring an agent's activities, it is more likely that the agent will be responsive to that principal—at least until the other principal also begins to get involved. If neither principal actively directs an agent, that agent can revert to its default settings—its own interests and biases. If the goals of the principals conflict, or if they are merely muddled and unclear, the result will be something that superficially looks like the bureaucratic politics model.

Principals do not want to be actively involved in directing and monitoring agents. They want them to do their bidding with minimal effort. They want to "hard-wire" in success to the agents that they create. By doing so, they can minimize their own costs of monitoring and directing the agent once it is created. They want bureaucracies that behave like wind-up toys—turn them on and let them go. This way the principal can turn its attention to all of the other issues that it faces.

As the U-2 and CORONA cases demonstrated, one of the best ways the president has of hard-wiring an agent is to create a small, focused agent that not only is not directed by the Congress, but never reports to the Congress. If the president can dramatically restrict the amount of information from this agent which reaches the Congress, he will improve his chances of getting the agent to do his bidding unimpeded. Because this is a structural factor, it works not simply once, but repeatedly. (In 1960, when Eisenhower created out of the wreckage of the failed SAMOS program what became the National

Reconnaissance Office to manage both aerial and satellite reconnaissance, he created an agency to which future presidents could assign tasks with the sure confidence that they would be conducted.) Although much of what this agency has accomplished remains classified, it is clear that it proved to be a valuable and prized source of intelligence for American presidents for nearly forty years. It satisfied them even when internal relationships became strained.

Information Warfare

Information is a key aspect of any relationship among actors in a principal agency relationship. The principal agent model has long recognized that information flow from agent to principal is a key factor in determining how well an agent can be controlled. The model has acknowledged that principals are aware of their lack of information and try to alleviate this. What it has not focused upon is the possibility that poor information flow (i.e. information asymmetry) may be *caused* by another principal.

Control of information has long been a conscious part of how the president employs his executive powers of implementation in virtually all aspects of government, not simply national security. For instance, virtually every government agency has a dedicated congressional liaison office and many require that any employee contacts with Congress go through these gatekeepers. These offices are often staffed with political appointees—chosen by the executive and often selected for their loyalty. Thus, the executive is directly controlling the information that reaches the Congress. The advent of "whistle-blower" legislation in the late 1980s highlighted the existence of working environments in which bringing information to the Congress had long been discouraged and punished, at the encouragement of the executive.

Considering that information is controlled even in entirely public, domestic agencies, it is not surprising that classification is also a valuable tool for the executive.

Whenever secrecy is discussed, it is usually in terms of national security. But its role in political struggle, as a weapon used by bureaucracies, has not been explored in much detail. As Senator Patrick Moynihan has observed:

> "In the United States, secrecy is an institution of the administrative state that developed during the great conflicts of the twentieth century. It is distinctive primarily in that it is all but unexamined. There is a formidable literature on regulation of the public mode, virtually none on secrecy. Rather, there *is* a considerable literature, but it is mostly secret. Indeed, the modes of secrecy remain for the most part—well, secret. On inquiry, there are regularities: patterns that fit well enough with what we have learned about other forms of regulation. But there has been so little inquiry that the actors involved seem hardly to know the set roles they play. Most important, they seem never to know the damage they can do. This is something more than inconveniencing to the citizen. At times, in the name of national security, secrecy has put that very security in harm's way."[6]

How this policy works operationally is evident in the secrecy agreements that federal employees sign when they undertake highly classified work. These agreements state that they are to make "no unauthorized disclosure" of classified data. Although the agreements usually do not state it explicitly (although some may), Congress is not authorized to receive such data from the employee. All contacts with Congress must be through the congressional liaison office, which acts as a gatekeeper. It decides what information does and does not reach the Congress—often justified in terms of secrecy—and enforcing the standards of conduct that will be tolerated among employees. The message is that revealing classified information to Congress does not simply threaten the organization, it jeopardizes national security. Violating these rules is a guaranteed way to destroy a career and be labeled a renegade at best, a traitor at worst. As one former CIA employee stated, "There is also a lot of verbal enforcement. The standard semi-joke in my days being that, given the choice of talking to the KGB and the Congress, the KGB was the safer choice."

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[6] Moynihan, *Secrecy*, pp. 59-60.

As Senator Moynihan noted, secrecy is a form of regulation, of achieving presidential goals by limiting congressional involvement.[7] There are many examples of it being used to achieve goals that a president either does not want to attempt through legislation, or knows he is incapable of achieving through legislation. In July 1999, Congress reported that the Pentagon had spent hundreds of millions of dollars on military projects that lawmakers had never approved. Money had even been spent on a program that Congress had ordered shut down. As one House committee chairman commented, the Pentagon had done this with the belief that Congress would never notice it.[8] Thus, the president continues to exert power in the shadows even today and the end of the Cold War has changed little.

The Power of the Executive

There are many contemporary examples of the president acting as a principal in a principal agent relationship. Furthermore, there are many contemporary examples of the president acting as an effective principal in areas other than national security policy. Some of these examples provide indications that occasionally the president may act in ways that mimic Congress' actions according to traditional principal agency theory.

On September 2, 1999 President Clinton doubled the range around American coasts in which the Coast Guard and federal law enforcement officers could enforce American law

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[7] "Here we have government secrecy in its essence. Departments and agencies hoard information, and the government becomes a kind of market. Secrets become organizational assets, never to be shared save in exchange for another organization's assets. Sometimes the exchange is in kind: I exchange my secret for your secret. Sometimes the exchange resembles barter: I trade my willingness to share certain secrets for your help in accomplishing my purposes. But whatever the coinage, the system costs can be enormous. In the void created by absent or withheld information, decisions are either made poorly or not made at all." Daniel Patrick Moynihan, *Secrecy* (New Haven, CN: Yale University Press, 1998), p. 73.

[8] Tim Weiner, "Pentagon Misused Millions in Funds, House Panel Says," *The New York Times*, July 22, 1999, p. A1.

and board foreign ships.[9] Clinton took this action—in effect adopting the provisions of an international treaty that had not been ratified by the Congress—entirely on his own. His action took effect immediately and with little opposition. Indeed, a broad range of groups, from environmentalists to commercial fishermen, supported the president's action. The Vice President even trumpeted the act's importance for the war on drugs.

Clinton chose to do this on his own, without seeking authority or approval of Congress. The president asserted power in a substantial way, with international implications, and essentially subverting the intent of the Constitution (which stipulates that only the U.S. Senate can ratify treaties). Furthermore, if Congress wished to reverse this action, it would have to do so through legislation, and would likely have to override a presidential veto in the process. Because the act was immediate, Congress would be fighting rules and procedures that had become formalized. Arrests would have to be overturned and drug dealers set free.

This was certainly not the first time that President Clinton exerted his executive authority in a broad-reaching manner. In late 1996, Clinton redesignated as a federal wilderness area 1.7 million acres of land in south-central Utah—an area the size of Rhode Island and Delaware combined. This action prevented or restricted mining, commerce, and road-building because such wilderness areas are protected under various environmental laws. He did this for two reasons: to impress environmentalists in an upcoming election and to stop a proposed Utah mining operation in the area.[10]

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[9] Previously, the United States, like most countries, claimed territorial waters extending 12 nautical miles from shore, and also claimed a 12 mile "contiguous zone" in which it could enforce its laws. (Twelve nautical miles is equal to about 13.8 common miles.) A 1982 United Nations treaty, which was not ratified by the United States Senate, allowed countries to claim a 12 mile territorial limit and a 24 mile exclusion zone. The U.S. adopted the 12 mile territorial limit in the 1980s, but Clinton's action effectively adopted the United Nations treaty limits as its own. Philip Shenon, "U.S. Doubles Offshore Zone Under Its Law," *The New York Times*, September 3, 1999, p. A13.

[10] If the Secretary of the Interior, Bruce Babbitt, had proposed the change, it would have required public notices and congressional involvement. But instead, through creative bureaucracy, the Department of the

Congress later rejected a bill that would have limited the president's power to make such changes. It then essentially ratified Clinton's action by passing legislation that accepted the new boundaries of the wilderness area and appropriated money for it.[11] A federal judge later noted that neither the executive or legislative branches of government had operated within their constitutional authority. But once again, the president had taken an action, and by establishing his goals as fact, made it difficult for his actions to be reversed. He established rules that would have to be overturned and constituencies that would have to be fought if Congress opposed the action. Furthermore, opposing Clinton's action would require significant work on the part of the Congress—not merely a simple majority in an appropriations bill.[12] He did all of this quickly, and with relatively little effort compared to Congress.

Hundreds of executive orders are issued by each president and are never challenged in the courts or by Congress. They can have long-lasting effect and in many cases are so ingrained in the political culture that they are virtually overlooked. For instance, in November 1979, President Carter declared a national emergency during the Iran hostage crisis—an emergency which is still in effect today, along with 13 other national emergencies. These emergencies have permitted sanctions and export controls for various countries, including Iran, Iraq, Libya, Afghanistan, Burma, Sudan, Yugoslavia, Angola and Cuba. They have also included non-national entities, such as Colombian drug-

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Interior had the president request that the Secretary study it, and then, upon Babbit's recommendation, Clinton issued his order.

[11] Kenneth Smith, "Monumental Mistake," *The Washington Times*, August 26, 1999, p. A15.

[12] What is ironic about the 1996 Utah wilderness decision is that a previous administration had dealt with a similar situation and determined that it did not have power to act. In 1982, President Reagan wanted to block the designation of a wilderness area. He was informed by his Assistant Attorney General that: "Only Congress has authority to determine whether an area should or should not be designated as wilderness. Obviously, 14 years later, with no change in the fundamental statutory basis of the designation of wilderness areas (the Antiquities Act of 1906), a different administration determined otherwise.

runners, terrorists, and proliferators of weapons of mass destruction.[13] But most executive orders concern domestic issues that do not require a national security justification.

Fast and Efficient vs. Good and Democratic?

The ICBM, U-2 and other cases demonstrated that one reason that these methods of bureaucratic control were so attractive to the president was because they were so successful. Indeed, each of these weapon development programs tended to serve as an excuse for repeating the structured principal agency approach: The successful atomic bomb led to a Manhattan Project approach to the ICBM. The U-2 experience later served as an example for both the SR-71 spyplane and the CORONA and GAMBIT reconnaissance satellites. Success encouraged the president to use the same approach again. Over the years, the secret bureaucracy expanded significantly. Agents themselves attempted—with varying degrees of success—to emulate these examples in other programs as well.

But does the decisive use of executive power automatically equal better policy making? No. It does not—at least not inherently. What it does equal is *faster* policy making, and faster policy making is desirable for the president because it gives him an edge against Congress. In the mind of the president, faster is often better, even if the outcome later requires tweaking.[14]

Naturally, what the president is trying to do when he engages in non-legislative policy making is exclude as many outside actors as possible. He wants no leaks, no opposing voices, no one strategizing against him. But it is entirely possible that while formulating policy under tight controls, he and his aides may miss key flaws in their plans.

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[13] Frank J. Murray, "Clinton's Executive Orders Still Are Packing a Punch," *The Washington Times*, August 23, 1999, p. A1;A10.

[14] It is worth remembering that one of the things that so irked Eisenhower and his immediate advisors about the IRBM was not that the missile did not work, but that the program had become publicly embarrassing and had attracted congressional attention. What they regretted was the mess, even though they got what they wanted.

These flaws may only become apparent after the bureaucratic machinery has started, placing it in motion for failure. Furthermore, by acting too quickly or in too much isolation, the president and his aides may overlook their need to build consensus for later stages of the policy.

Moving too quickly is not uncommon for military programs. Indeed, it seems to be a major unnoticed problem throughout the history of weapons procurement. There are dozens, if not hundreds of examples of weapons programs being rushed to production—for whatever reason—before their problems have been sufficiently understood and addressed. One nuclear historian has noted that:

> At least 28 different stockpiled U.S. nuclear warhead designs out of 40 MARK-numbered systems developed since 1958 have had either unexpected surprises during developmental nuclear testing, unexpected difficulties following modification, problems with new production, or post-deployment stockpile problems.
>
> Almost all of the problems cited above were caused by rushing weapons into production without adequate pre-stockpile testing (both nuclear and non-nuclear) for likely "aging," delivery environment, component interaction, and production and assembly effects. All too often military paranoia following misinterpreted intelligence or incidents, political demands from both inside and outside the labs, budgetary constraints which limit materials choices, engineering oversights, inadequate quality assurance, and over-accelerated development schedules have led to costly problems in terms of time and money after weapons were deployed; there often seems to be more time to re-design weapons than to build them properly in the first place.[15]

This happened in areas other than nuclear weapons as well. As Michael Brown argued in *Flying Blind*, and Robert Coulam noted in *Illusions of Choice*, during much of the Cold War the military services, particularly the Air Force, had a tendency to rush aircraft to production before they had been properly tested. This often led to initial production batches of aircraft being removed from service early on (as happened with the

B-52A and B bombers), or required extensive redesign after the aircraft had already entered limited production (as in the TFX/F-111).[16] These were not necessarily cases where the problems were *caused* by the president pushing the program too fast. But they demonstrate that speed in policy making in and of itself is not always a good thing. Certainly, in the cases of Air Force aircraft and even nuclear weapons, Congress possessed oversight abilities and they also apparently failed to catch problems early on.

A major complaint about government is that too often bureaucracies impede progress rather than facilitate it. One can argue that speed is good for its own sake—that Congress's attempts to slow down decision making to its own pace hurt the country by preventing problems from being addressed quickly. The president believes this to be true when it comes to national security issues.

But regulation and government deliberation (using the latter word in all its definitions) can serve a public good. The person who feels that the long wait at the Department of Motor Vehicles is bad represents only one part of the equation. Government rules in themselves exist for certain reasons and they will require time to operate. Drivers licenses serve a public good. Their goal is to prevent reckless and dangerous people from getting behind the wheel of a car. For the most part they accomplish this goal—fail the eye test and you will not be allowed to drive. While delays and long lines might be the result of government inefficiency and incompetence, there is an inherent government (and, by extension, *public*) interest in not rushing government actions (like issuing motor vehicle licenses or car registrations) to assure that they operate properly. Regulation has its value.

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[15] Chuck Hansen, *US Nuclear Weapons, The Secret History* (Arlington, TX: Aerofax, 1988), p. 220, fn 315.

[16] The TFX decision appears to be an example of a principal simply behaving stupidly. Secretary of Defense Robert McNamara chose to ignore the advice of all of his top military officials repeatedly. He even overrode their selection of a prime contractor for the aircraft. See: Robert J. Art, *The TFX Decision* (Boston, MA: Little, Brown and Co., 1968), p. 34.

A certain amount of deliberation is useful to decrease the likelihood that policies will be poorly implemented.

But it is also worth noting that presidents can benefit even from quickly made, poorly implemented policy decisions. The president is always interested in preserving his overall power as the primary decision maker in national security affairs. Even flawed decisions can be useful to the president if they have the effect of symbolically "planting the flag" on an issue and making it his own. If the president has staked out his authority to act in certain situations, then he has the benefit of precedent in future similar situations, which may be more important to him than complete success.

Finally, in the midst of this debate, it is important to remember that there are physical limits to what can be done even assuming a streamlined, highly efficient, and magnificently managed program without outside interference. The best run development program in the world, with the most money, the best scientists, managers and engineers, will not produce a perpetual motion machine.

Beyond the questions of good and bad policy is the question of what presidential manipulation of the bureaucracy means to democracy itself. This is a trickier question, for it highlights the difficulty of defining democracy. As Brehm and Gates noted, perhaps somewhat cynically, there can only be democratic elections, not democratic government.

The president and the Congress are both subject to regular elections, at which time the people declare their will. But obviously both the Founding Fathers and contemporary opinion view the democratic process as more than simply free and fair elections. The democratic process includes the ability of the people to know the actions of their elected representatives and to voice their opinions of these actions. Democracy requires that the public be able to exert pressure upon their representatives at times other than elections. Congress uses structure in ways that acknowledge this. Congressmen attempt to enfranchise constituencies to exert pressure on Congress itself.

Various critics have charged that secrecy undermines American democracy in subtle, often unnoticed ways. For instance, Steven Aftergood has noted that the classification of the CIA budget is a prima facie violation of the Constitution. Article 9, Section I of the Constitution states: "No Money shall be drawn from the Treasury, but in Consequence of Appropriations made by Law; and a regular Statement and Account of the Receipts and Expenditures of all public Money shall be published from time to time." Aftergood has argued that this endows the public with a right to know how its money is being spent, at least in the aggregate.[17]

But the CIA's budget is hidden within the budget of the Department of Defense in order to maintain its secrecy. Therefore, in effect, the public DoD budget is false, a lie. It is a deliberately misleading "Statement and Account of the Receipts and Expenditures of all public Money." The federal government is undermining the Constitution. It is also doing this with the acquiescence of both the executive and legislative branches. Is this democratic? Certainly, this one incident does not invalidate American democracy, but it allows us to establish boundaries for what democracy is and to ask how American democracy may be plagued by inconsistencies and contradictions and flaws.

The use by the president of his executive powers in secret raises some even more disturbing questions. As I noted in the introduction, presidents seek to act like kings. They are most powerful when they act like kings. Congress, for various reasons over two centuries of American government, has allowed them to act like kings at certain times. But kings are not democratic. Is American democracy undermined by the president's ability to operate major parts of the government with little or no public accountability?

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[17] Steven Aftergood interview by Dwayne A. Day, September 22, 1999.

The Future of the Principal Agency Model

I have presented several case studies on the use of principal agency by the president to achieve his policy goals. I specifically focused upon one president who I felt best typified some of the extremes of this exercise of power. These examples demonstrated that the president can act as a principal and can achieve startling results. The ability to establish a classified bureaucracy largely outside of the purview and control of the Congress and to allocate billions of dollars to this bureaucracy over decades, with practically no real congressional involvement or oversight, demonstrates that presidents have had powers that are impressive and virtually ignored by government scholars. I have also provided examples of other areas, far from the national security field, where the president has exerted his executive power. These too have received scant attention from political scientists.

Certainly, what is needed is more research to expand the scope and understanding of the president as principal. There are other examples in the national security field similar to the ones that I have discussed which require further attention. There are other secret bureaucracies and other cases where the normal operating rules of an agent have been changed substantially to achieve the president's goals. The next major step would be to explore the Congress' actions and role as principal in national security affairs and to examine cases where the president and Congress came into direct conflict over national security goals.

A good test of the direct struggle between Congress and the president over national security would be President Reagan's Strategic Defense Initiative. In this case Reagan, operating as a principal, clearly attempted to use structure to achieve some of his goals. He created a single-mission bureaucracy separate from the existing bureaucracies. But he also encountered a Congress that was willing to strongly challenge his efforts and to block them legislatively. The result was that the SDI program spent billions of dollars, but failed to

achieve the goals that Reagan had in mind when he created it. What explains this failure? Were the goals unrealistic to begin with (i.e. a perpetual motion machine)? Was structure poorly employed to achieve the goals? Or did the active and focused interest of Congress as a second principal serve to thwart the efforts of the president?

Another major step would be to examine the role of the president as principal concerning largely domestic issues. The president enjoys substantial power because he sits at the juncture between international and domestic issues. But what about instances where he is unable to exploit this strategic position? What about issues that are entirely domestic? There are certainly many other domestic areas where Congress' role as principal has been relatively unexplored. What about the principal agent relationship in areas such as health care and disease control? Congress has the substantial power to fund agencies such as the Centers for Disease Control, but the president still implements the policies. Can he lead the agency in directions other than the ones Congress wants it to go? Can he thwart Congress' intent?

This raises all kinds of additional questions. For instance, does the president use structure differently for domestic issues than national security ones? What are the constraints upon him for doing this and how do they differ? This dissertation has demonstrated that information denial is a useful structural tool for presidents. But what about deliberate *disinformation*? Can the president benefit from making an agent provide inaccurate information? Can he even do this? The cases in the previous chapter demonstrated that structural control could be used to accomplish goals. But what about using structural control *to deny Congress' goals?* Certainly, Congress uses structure to impede the president. Does the president do the same to impede Congress? Clinton's actions concerning the Utah wilderness and the expansion of the coastline zone of control also demonstrate that the president can use executive powers to enfranchise

constituents—just like Congress has used structure to enfranchise constituents. Does the president sometimes use structure for the exact same purposes as Congress does?

Conclusion

All theories of governmental decision making attempt to define and hopefully explain the struggle for control in American government. By characterizing it, they attempt to provide predictive capabilities—so that future struggles can be explained and outcomes can be predicted. This is by no means a well-defined science and many would say that it is little more than an art.[18] One of the measures of a theory's value is its ability to explain *and* to predict.

The example of the president as a principal for national security policy provides substantial explanatory and predictive power. It provides numerous conclusions that can be generalized to other cases to explain behavior and predict outcomes. Some of these are summarized below.

> *The more that the president can structure an agent, the more likely he will be able to achieve success.*
> Structural attributes like the number of missions that an agent performs, its internal rules and hierarchy, and its transmittal of information to the principals, all matter in determining its success. If the president maximizes these structural attributes, he increases his ability to successfully achieve his goals.
>
> *Isolating agents is a means of engaging in political struggle.*
> Agents do not operate in a political vacuum. They are the means through which principals seek to enact their policies. As a result, they are also the means through which principals oppose each other. If a president can isolate an agent, he automatically makes it more responsive to him than to Congress.
>
> *When possible, presidents seek to enact their policies in ways that do not require legislation or substantial interaction with Congress.*

[18] The inability to predict the outcome of elections even a day or so before they occur still demonstrates the limitations of attempting to apply analytical tools to politics. For proof, one need look no further than the Republican congressional upset of 1994 or the Democratic congressional upset of 1998, when predictions of outcomes were dramatically at odds with reality.

Because they can act without congressional involvement and because doing so has benefits (for instance, it can be relatively easy), presidents will use the executive tools at their disposal when they can. Admittedly, there are limits to how much they can do short of actually resorting to the legislative process.

The more important a mission is to a president, the more likely it becomes that he will attempt to use structure to shape an agent to accomplish that mission.
Because structure itself increases the chance of success, missions where success is an important factor (for instance, where the safety of the state may be at stake) will encourage presidents to treat them differently and with care.

Presidents will use information denial as a means of limiting congressional control of agents.
Whereas the traditional view of structure revolves primarily around the number of missions an agent performs (i.e. one or many) and its operating rules, how it reports to an agent can also be a structural factor. This can become something that presidents try to control. They will try to limit the amount of information that an agent supplies to Congress, thereby limiting how much effective oversight and control Congress exercises over that agent.

Presidents will employ secrecy for non-strategic reasons.
Because secrecy can be a very effective means of limiting Congress' control of an agent, presidents will utilize it even if it is largely unnecessary for international purposes. Classification of missions and bureaucracy can be highly useful for entirely domestic purposes such as eliminating congressional interference or public opposition.

Individuals are less important in determining success than the rules and structures that constrain their actions.
This factor holds true for both agents and principals. It is important that agents be staffed by competent people. But rules and structures exist in order to regularize performance no matter who staffs a bureaucracy.
Similarly, one of the problems with the study of the presidency is that it has often been merely a study of presidents, not their office. But the overall structure and practice of American government plays a major role in shaping how presidents have acted. For instance, the fact that they inherit the powers developed by their predecessors (like presidential directives and classification), plays a major role in what they can accomplish and how they do it. Admittedly, some presidents can use these rules better than others, but the existence of the rules is the most important thing.

Congress' difficulties in monitoring agents may be due to the president's influence.
The moral hazard problem, whereby the agent reports on only what the Congress is monitoring rather than the actual goals, may be caused by the president.

Policies may fail not simply on their own, but because they are being sabotaged from within.
Because the political struggle continues after the legislative phase through the implementation phase, presidents may seek to stop, reverse or alter policies that they have to implement. This effort may be too subtle to notice. It may be interpreted as "bureaucratic drift" when it is actually the efforts of the president.

The ironic thing about presidents is that they can be most influential when they are least visible. Hopefully, by shining a light on their use of power in the shadows we can better understand the way American government works.