HAVERFORD COLLEGE


SENIOR THESIS
DEPARTMENT OF HISTORY

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HAVERFORD, PA
23 APRIL 2010
Abstract

This thesis investigates the increasing involvement of the non-military, non-governmental intellectual dubbed the civilian expert in government and policy in the early stages of the Cold War, 1945-1960. It will focus on the RAND Corporation at the prototype of the Cold War generation of think tanks and intellectual organizations that attempted to actively influence policy instead of acting in a solely research and advisory role. The thesis will provide a background of the escalation civilian expert involvement in the public realm by covering the Progressive-era think tanks, university liaisons with business and the military, and the massive upsurge in utilization of science and scientists during World War II. These developments provided a foundation for the proliferation of think tanks, advisory institutions, and laboratories during the Cold War known as the military-government-intellectual complex. The complex broke with previous paradigms of intellectual government advisors by becoming a central component of the government apparatus. The trend of intellectuals and academics becoming involved with government and military processes became more pronounced as the intellectual complex moved away from its traditional role as objective advisor and came to resemble a special interest group. The RAND Corporation was the prototype of the special-interest intellectual complex, as it took steps to get its own policies enacted, and attempted to influence the government and military to enact policies for its own benefit.
# Table of Contents

Title Page........................................................................................................... i
Abstract............................................................................................................. ii
Table of Contents.............................................................................................. iii
Introduction....................................................................................................... 4
Chapter 1: The Rise of the Civilian Expert from World War I to World War II 11
Chapter 2: The Cold War.................................................................................. 19
Chapter 3: The Formation and Nature of the Military-Government-Intellectual Complex ................................................................................. 30
Chapter 4: The RAND Corporation............................................................... 41
Conclusion......................................................................................................... 57
Bibliography...................................................................................................... 60
Introduction

In the aftermath of World War Two, a new variety of intellectual enterprise arose, composed of academics and intellectuals who devoted their time and knowledge to solving the problems posed by the postwar world. The advance of the Cold War contributed to the speedy development of this enterprise, which was funded and sponsored by the military, various branches of government, and industry. It was comprised of think tanks, laboratories, and research organizations. These could be independent nonprofit or for-profit organizations, or affiliated with universities, the military, and industrial concerns. The thesis investigates the development of this industry, and will argue that the RAND Corporation was the prototype of this new generation of intellectual advisors, who differed from their predecessors in that they sought to directly influence policy, and took steps to have their own policies implemented. In the investigation, the concept of the civilian expert will be explored. The thesis will also investigate the ways in which the advancement of science and technology and their increasing application to wartime and governmental pursuits resulted in increased respect and power for the individuals possessing expertise in those sciences. This increased respect and power allowed the civilian experts and the organizations to which they belonged to take a more proactive role in the implementation of policy, rather than occupying a strictly advisory role.

During the 20th century, civilian experts were increasingly utilized both in advising government and advancing policy in peacetime, and in the application of
their expertise to military concerns during wartime. While the establishment of public advisory bodies during peacetime laid the foundations for future intellectual involvement in policymaking, the wartime contributions of the civilian experts played a more important role in increasing respect for scientists and technological experts. World War Two wartime inventions such as radar, V-2 rockets, and lighter, faster bombers increased military appreciation for technological advances. The final step in the increase of respect for the uses of science was the creation and detonation of the atomic bomb. The recognition of the power that scientists could harness for American benefit caused the American government to place heavy emphasis on scientific and technological development in the next international struggle, the Cold War.

The mutually antagonistic relationship between the United States and the Soviet Union called the Cold War began almost immediately after the cessation of hostilities in World War Two. The Cold War and the intellectual enterprise hereafter referred to as the military-government-intellectual complex had a symbiotic relationship. The advent of the Cold War gave impetus to the developing intellectual industry of government and military advisors in the guise of funding and sponsors who wanted to apply scientific discovery to the Cold War effort. As the military-industrial-intellectual complex grew increasingly dependent on the hostile relations between the US and Soviet Union to provide funding and purpose to their studies, however, it became in the industry's best interest to provide intelligence and analysis that extended and deepened the Cold War. The intellectual enterprise
became to an extent a new interest group that advocated for policies that would benefit it.

Many people within academia objected to the application of academic knowledge for military purposes and government purposes, claiming that it was a misuse of their training and dedication to learning. However, others argued that experts had a duty to help the United States defend the world against Communism, and therefore engaging in research on behalf of the government was a moral and civic obligation for academics. This view can be found in social scientist Ithiel de Sola Pool’s 1966 article “The Necessity for Social Scientists Doing Research for Governments.” This disagreement serves to show that the trend of increased government involvement was not universal within the intellectual community.

The RAND Corporation was the prototype of the actively influential military-government-intellectual complex organization. It was created in 1946 at the behest of the commanding General of the Army Air Forces to be a technological and scientific advisory think tank for the Army Air Forces. It was established under the aegis of Douglas Aircraft Company, and RAND functioned as a sub department of the corporation until a mutual decision caused RAND to split from Douglas in 1948. Thus, RAND in its creation served to exemplify the post-war consolidation of wartime connections between industry and the military that would grow into the massive special interest that Eisenhower warned against in his speech about the “military-industrial complex”. RAND incorporated as a nonprofit organization in 1948, though it maintained its close ties to the Air Force. Over the next twelve years
RAND grew swiftly, expanded its sponsorship base (though remaining primarily attached to the Air Force), and published studies and reports that affected Air Force policy at the levels of Air Force Commanding General and the Air Force Chief of Staff.

There are several specific examples of RAND employees acting in the interest of RAND and deliberately contributing to heightened anxiety during the Cold War. Albert Wohlstetter's article "The Delicate Balance of Terror" and the concept of a missile gap, a fallacious concept that according to RAND documenter Alex Abella came directly from RAND both served to increase worries about American ability to keep the peace and keep up with the Russians.¹ The direct result of this increased worry was that more money was channeled into the Air Force, and thence to RAND.

The RAND Corporation itself is a source of controversy for historians. Fred Kaplan, the author of the RAND history The Wizards of Armageddon, argues that RAND was an organization of individuals who used their intellect to solve the major problems of the day, particularly defending the United States against the horrific specter of global nuclear war. While Kaplan admits that the world of nuclear strategy was akin to a "deep, dark pit," he lauds RAND for attempting to battle international chaos. This view of RAND is not universal. Alex Abella, author of the more recent Soldiers of Reason, portrays RAND and its members as arrogant, power-hungry and out of touch with reality, benefitting from the uncertainty of the Cold War and the fear inspired by the global conflict.² These two interpretations

² Ibid. 27.
represent the opposite ends of the spectrum of analysis of RAND. The reality of RAND existed in the middle of the two extremes. RAND was characterized by intellectual arrogance, and occasionally acted to further RAND interests and the interests of the Air Force at the expense of potential overall benefit to the United States. However, most RAND employees and efforts were motivated by a genuine desire to improve the United States' standing in the struggle against the Soviet Union.

This thesis illustrates the rise of the civilian expert in political influence and involvement in the early stages of the Cold War, focusing particularly on the RAND Corporation as the prototype of this development. It argues that the influence that RAND gradually accumulated and wielded in the 14 years following its inception, its status among political insiders, and the intellectual quality within RAND contributed to its status as one of the first among the Cold War think tanks of the time and paradigmatic example of such think tanks for historians today.

Chapter 1. The Rise of the Civilian Expert from World War I to World War II

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3 Ibid. 238.
The term 'civilian expert' is a key designation in the investigation into the rise in influence of the intellectual community. The term "expert" is needed to identify the individuals within the intellectual community because the civilians who became members of important advisory, research, and strategy-oriented organizations were not solely hard scientists. They were physicists, chemists, engineers, strategists, social scientists, and philosophers. The word 'expert' may cover a wide variety of knowledge and experience, and may be applied differently in different fields. For example, expertise implies advanced knowledge and comprehension of an area of social science, but expertise in the field of engineering requires experience as well as theoretical knowledge. A large number of strategic and research organizations during the Cold War were attached to universities, and an even larger percent of the 'experts' had histories in academia. However, certain fields, such as nuclear strategy, were created along with the atomic bomb and there was no formal academic training in that field to be had. Therefore, the definition of an expert will be taken to be an individual whose professional life is dedicated to the pursuit of a particular branch of knowledge, and whose command of their chosen field deserves and commands the respect of their peers within said field. This definition covers those with rigorous academic training in their subjects, such as chemists, physicists, and mathematicians, and those whose fields did not allow for academic training at the beginning of the Cold War, such as nuclear strategists. The requirements for being termed an 'expert' are generally applicable to individuals within the strategic community during the Cold War. The rise of the expert that

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4 For the purposes of the argument, the terms hard scientist and natural scientist will be used interchangeably.
culminated in the explosion of the military-intellectual complex and strategic community of the Cold War was an ongoing process that began before World War One.

Within the military, the term civilian is used to describe an individual who is not a member of any branch of the armed services. The term 'civilian' can also be used as one who does not work directly for the government. Therefore, the term 'civilian' can therefore mean non-military personnel, non-governmental personnel, or both. The term 'civilian expert' as it will be used will mean an expert who is neither a member of the armed forces nor a member of the United States government. Therefore, the members of the RAND Corporation and other organizations who did research and studies for the Air Force, Army, or Navy remained civilians regardless of military support or funding, or the nature of their work.

In the first half of the 20th century, the intellectual and scientific communities became increasingly involved in issues of government, the military, and public policy. This increasing involvement paved the way for a significant portion of the intellectual community to become active participants and shapers of policy in the government and military. This participation became evident in the second half of the twentieth century, and began in the early years of the Cold War.

Civilian experts began advising government long before Cold War think tanks such as the RAND Corporation were founded. Policy research foundations and advocacy groups were established within the United States in the early 20th century. Early twentieth century advisory groups, or think tanks, included the Russell Sage
Foundation, the Brookings Institution, the Institute for Government Research, the Hoover Institution, and the Carnegie Endowment for International Peace.\(^5\) These organizations differed from later advisory bodies in that they emphasized social and humanitarian issues. Some of these organizations, such as the Russell Sage Foundation, attempted to have their research translated into government policies.\(^6\) However, the founders of these early institutions were determined to keep the intellectuals and scholars who worked for them isolated from partisan politics.\(^7\) Also, while these organizations laid the foundation for later think tank involvement in government, none of them were as deeply involved within the political and governmental apparatus as their later counterparts. Later think tanks became a part of the political structure, and operated from privileged positions of power and influence. Therefore, the early 20\(^{th}\) century think tanks and advisory/advocacy organizations, while establishing a precedent of civilian expert involvement in government, operated at a different level than the post-World War II think tanks. The argument that the Cold War trend of intellectual advisors who sought to directly influence policy and have their own policies implemented differed from previous was a new development differed from previous paradigms is therefore valid.

While independent government advisory organizations meant that policy experts were involved in public efforts, these represented a very small percentage of the intellectual community. The majority of academia continued to be isolated from

\(^6\) Ibid. 29.
\(^7\) Ibid. 3.
the public realm. However, increased scientific involvement in the business world served to bring intellectual endeavor more into the public sphere. Large firms increasingly used and came to depend upon scientific innovation to assist in the development of marketable materials and processes. Universities were an excellent source of research and researchers, and therefore businesses approached them and secured their assistance in business-related research projects. For example, in California in the 1920s power companies allied themselves with researchers at Stanford, the California Institute of Technology, and Berkeley to solve problems of hydroelectric power production and distribution. These universities were sponsored by and partnered with the Pelton Waterwheel Company in the development of hydroelectric power. The Sperry Company sponsored Stanford University in cooperation with its physics department, which developed a number of patentable, marketable products. The Massachusetts Institute of Technology was intended to work with industrial concerns, and to strengthen its ties with industry MIT established a Technology Plan in the 1920s. With this plan MIT developed a program for working on industrial projects within the university. This plan was intended give students and staff industrial experience as well as to help industry solve technical, manufacturing, and managerial problems. While involvement in the world of business served to acclimate academics to serving in the world outside of the university, they still worked in research and advisory positions. Scientific

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10 Ibid. 152
researchers had very little say in the applications of their research or in the management of the companies they worked for.

Despite the importance of scientific research to business, scientists became increasingly impatient with the limitations imposed on researchers by their industrial sponsors. Secrecy was necessitated by patent competition and marketing, and businesses imposed limitations on the direction and nature of research. Government sponsorship was an attractive alternative, with the potential for large grants and without the issues of patenting and marketability that restricted research. Though government-sponsored research only began to eclipse private and industrial sponsorship of research during World War II and the Cold War, scientific research was a concern to the government in the interwar period. For example, before 1940 the University of California at Berkeley received 62% of its operating budget from state and federal grants.

Federal sponsorship of science and technology was not limited to university grants and funding. The government also sponsored military research. For example, the Office of Naval Research employed scientists to improve submarine design and function, and these scientists developed the analogous torpedo data-computer to provide launch instructions to submarines with torpedoes. Such funding and sponsorship prove that federal and state governments and the military recognized the importance of intellectual endeavor and scientific advancement.

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11 Ibid. 3
12 Ibid. 3
However, this recognition stopped short of giving scientists and intellectuals a prominent role in the prosecution of governmental and military objectives.

World War II marked a serious change in the nature of the relationship between science and the government. In World War Two the scientific population played a direct and important role in the prosecution of the war. Operational research teams of scientists accompanied military units into war zones to oversee the technological equipment and supply quick fixes if there were any difficulties. The Manhattan Project was composed of scientists, as was the Allied team that cracked the German military codes. Research universities such as Cornell and MIT pledged their support to the war effort, and cooperated with the government and military in a number of their facilities and projects. The most prominent such facility was the MIT Radiation Laboratory, or Rad Lab, which assisted in the development of radar. The wartime relationship between universities and the government was mutually beneficial, as scientists provided needed research and development, and the government channeled funding into the sciences, eventually become the chief sponsor of scientific activity.\textsuperscript{14}

Federal organizations were set up to coordinate scientific advances and contributions to the war effort. For example, the President approved the establishment of the National Defense Research Committee (NDRC), an organization that coordinated and oversaw all scientific research conducted on behalf of the

\textsuperscript{14} Ibid. 184
military. The NDRC had jurisdiction over the research of all branches of the military, with the exception of the National Advisory Committee for Aeronautics.\textsuperscript{15} The membership of the NDRC included high-ranking military officials, the President of the National Academy, and several scientists.\textsuperscript{16} The chairman of the NDRC was Vannevar Bush, the former second in command at MIT. As the Chairman of the NDRC, Bush reported directly to President Roosevelt during World War II. Several memoranda exchanged between Bush and President Roosevelt show that the President trusted Bush and valued his suggestions.\textsuperscript{17} Therefore, though Bush acted in a purely advisory role to the President, his example shows that during World War II the scientific community became a part of the governmental apparatus.

The NDRC was one of the organizations that epitomized the confluence of government influence and scientific development and applied it to military material and development. Bush later said that World War Two "demanded a closer linkage among military men, scientists, and industrialists than had ever before been required."\textsuperscript{18} This wartime collaboration of necessity forged ties between industry, the scientific community, and the government that would later be institutionalized, creating the military-industrial-intellectual complex. According to Lloyd Berkner, a major player in post-war military-science collaboration, the "World War II

\textsuperscript{15} Henry E. Guerlac, \emph{Radar In World War Two: The History of Modern Physics 1800-1950, Volume 8} (Los Angeles, CA: Tomash Publishers, 1987), 245.
\textsuperscript{16} \textit{Ibid.} 245
\textsuperscript{17} Franklin Delano Roosevelt, "Memorandum for Dr. Vannevar Bush," 11 Mar. 1942, \textit{Franklin D. Roosevelt Presidential Library and Museum Website} [available from http://docs.fdrlibrary.marist.edu/psf/box2/a13w01.html; Internet; accessed 19 Jan. 2010]
\textsuperscript{18} Gallison and Hevly, 156.
enlistment of science for national defense as the necessary model for scientific life during the Cold War."\textsuperscript{19}

The organization of scientists on a federal level did not end with the NDRC. The Office of Scientific Research and Development (OSRD) was created after the dissolution of the National Defense Research Committee. The OSRD was a civilian organization whose mandate was similar to the NDRC, and Vannevar Bush headed the OSRD after his tenure with the NDRC. The OSRD was given control over wartime development of weapons for the military, control that had been the military's before World War II.\textsuperscript{20} The NDRC and OSRD established a precedent of scientific influence at the highest level of government that was continued into the post-war political atmosphere.

The new weapons of World War Two had an enormous affect on the war and on the military, governmental, and public view of science and its practitioners. The invention of the radar, the V-1 and V-2 rockets, and the atomic bomb were the most obvious weapon innovations of the war. However, other scientific advances included the B-29 bombers that allowed the US airplanes to out fly the Japanese bombers and proved crucial to the war effort; napalm, upon which was based the firebombing of Tokyo; and radio-jamming techniques that disrupted the German bombing effort. Scientific experts also contributed to the war effort by cracking the German military code. This was accomplished by Allied mathematicians, and proved invaluable in the winning of the war.

\textsuperscript{19} Freedman, 14.
\textsuperscript{20} Ibid. 156
The most important World War Two development for the rise in governmental and military influence of scientists was the creation of the atomic bomb. The atomic bomb capped the development of scientific influence in business, military, and the government by influencing the development of a new sector of business, that of nuclear strategy, which included organizations such as the RAND and MITRE Corporations; confirming beyond question the utility of scientific development in military affairs; and uniting scientists in their effort to influence the governments' use of the bomb.

The importance and influence of science in the areas of the military, business, and the government grew steadily from the time of World War I until the end of World War II. It was the collaboration of research universities and industrial scientists with the government and military during World War Two, however, that laid the groundwork for government and military sponsorship of research after the war ended. The wartime experience of funding research within universities established a precedent that was extended into the postwar era as the government turned to the universities for scientific help in dealing with the difficulties posed by the post-war world. A similar precedent caused the establishment of government-sponsored research facilities with ties to big business. The combination of this familiarity with the precedent set by the NDRC and OSRD of scientists reporting to highly placed government officials and having an active stake in government policy was the foundation for the creation of think tanks such as the RAND Corporation, who aggressively pursued the implementation of their policy and strategy recommendations. However, it was the advent of the Cold War and the global
struggle against Communism that brought about the arms race and obsession with technological superiority that allowed for the swift creation of the military-intellectual complex.

Chapter 2: The Cold War
The decades-long Cold War against the Soviet Union was the dominant consideration of military and foreign policy from the end of World War Two until the dissolution of the USSR. The Cold War was predicated on the existence of two inimical world powers, the United States and the Soviet Union. The ideologies and national interests of the two countries were diametrically opposed to each other, and therefore the two countries struggled for dominance in various ways for over fifty years. The Cold War was so called because it was a war waged without direct military conflict between the two participants. Initially, military action was not taken because the two nations had just ended a long and costly war; later, once both sides possessed nuclear weapons, such action would have been tantamount to national suicide.

As well as having an effect on politics, the Cold War spawned what President Dwight Eisenhower described as the “military-industrial complex” in his farewell address. The wedding of military and industrial interests during the Cold War created a powerful and massive interest group, one whose purposes were served by continuing and fanning the Cold War. As long as the Cold War continued and the Soviet Union was seen as a definite threat to America, then the military would continue to be influential and receive considerable funding, and the industries and interests groups that assisted the military either in providing materiel or strategy would continue to receive the benefits of the military paycheck. The RAND Corporation was in the middle of the military-industrial complex, directly benefitting from the continuance of the Cold War and contributing to its continuation with the studies, reports, and articles they produced.
The Cold War officially began with former British Prime Minister Winston Churchill's famous "Iron Curtain" speech. In the speech he speaks of the need for a particular alliance between Great Britain and the United States, calls for international collaboration and cooperation in the United Nations, and speaks of the universal desire to "guard the homes of the common people from the horrors and miseries of another war." However, his calls for peace and cooperation serve mainly as a prelude to the main thrust of his speech. In dramatic terms he stated, "A shadow has fallen upon the scenes so lately lighted by the Allied victory. Nobody knows what Soviet Russia and its Communist international organization intends to do in the immediate future, or what are the limits, if any, to their expansive and proselytizing tendencies."

In this one statement, made approximately nine months after the end of World War Two, one may see how immediately after the conclusion of the hostilities in which the Soviet Union and the Western powers by necessity colluded against a mutual enemy, the West begins to revert to pre-World War Two trends of anti-Soviet sentiment. Churchill states that the "Russian-dominated Polish government has been encouraged to make enormous and wrongful inroads upon Germany", a statement that demonstrates the extent to which the USSR has taken Nazi Germany's place as the European villain. Condemning an ally for "making inroads" upon a defeated enemy that was wholly responsible for the extraordinarily

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22 Ibid. 5

23 Ibid. 4
destructive war that had ended less than a year previously is deliberately turning upon the ally.

Once the Cold War began, the United States and the Soviet Union constantly competed for strategic and ideological ascendancy. However, the American perception of and reaction to the Cold War and Soviet Russia changed from the beginning of the Cold War until 1960. This development is best shown in three documents. These include diplomat George Kennan’s article “The Sources of Soviet Conduct”, published under the pseudonym X in *Foreign Affairs* in 1947; NSC-68, the National Security Council’s 1950 report on the status of the Soviet Union, the United States, and the Cold War; and RANDite Albert Wohlstetter’s article “The Delicate Balance of Terror”, which was published in 1958. Though many other documents that depict the American stance on the Cold War exist, these documents are the most helpful in constructing the evolution of the Cold War from an American standpoint.

George Kennan, an American diplomat stationed in Russia, wrote the 1948 article “The Sources of Soviet Conduct”. It is the distillation of his famous “Long Telegram”, which was one of the most influential documents of the Cold War. However, “The Sources of Soviet Conduct”, since it was published in *Foreign Affairs*, reached a greater percentage of the political world and therefore had more effect on the official American attitude towards the Soviet Union. As a result, the article set the tone for the early period of American strategy regarding the Soviet Union. In “The Sources of Soviet Conduct”, Kennan displays a marked antipathy towards Communism and its implementation in the Soviet system. He demonizes
communists as power-mad fanatics who betrayed the trust of the populations under their care by "[placing] far down on their scale of operational priorities the comforts and happiness of the peoples entrusted to their care."24 He identified the main causes of Western worry regarding the USSR in the line "[their] ideology, as we have seen, taught them that the outside world was hostile and that it was their duty eventually to overthrow the political forces beyond their borders."25

Kennan's prevalent worry in the Cold War was the concern over Soviet expansionism, a concern that was defined by Kennan in this article and seemingly confirmed by the Eastern European states falling to Communism in quick succession.

Kennan states that once the Communist government was effectively established within the Soviet Union and all major interior dissent was crushed, "it became necessary to justify the retention of the dictatorship by stressing the menace of capitalism abroad."26 The Soviet leadership, therefore, in a sense created an enemy to justify the continuance of the Party dictatorship, dominated by Stalin.

While there was historical resentment between the Soviet Union and Western countries, Kennan argues that the extremity of the perceived Soviet hostility was due to the combination of the necessity to the regime of a dangerous enemy and the Marxist ideology that stated that the capitalist world was hostile and inimical to the Communist. Kennan argues that this hostility and the foreign policy that it

25 Ibid. 3
26 Ibid. 4
characterizes are “there to stay, for the foreseeable future.” Kennan argues for a policy of “containment”, that is a “long-term, patient but firm and vigilant containment of Russian expansive tendencies...such a policy has nothing to do with outward histrionics: with threats or blustering or superfluous gestures of outward ‘toughness’.”

Two main elements of Kennan’s “Sources of Soviet Conduct”, his belief in the continuance of the hostility of the USSR to the capitalist world and his opinion that the United States needed to institute a policy of containment of the Soviet Union and its program of communist expansion, were accepted and canonized within American Cold War thought and strategy. However, one important point in “The Sources of Soviet Conduct” was discarded in the evolution of American Cold War thought. This was the idea that the Soviet Union was not planning to immediately embark upon a crusade to rid the world of the Western capitalist societies. He elucidates this idea when he says, “we are going to continue for a long time to find the Russians difficult to deal with. It does not mean that they should be considered as embarked upon a do-or-die program to overthrow our society by a given date.” The lack of an immediate Russian threat to American lives and civilization was dropped from American policy by 1950 in favor of a more militant stance that assumed the implementation of Russian plans for world domination was imminent.

The NSC-68 report of 1950 represented a step to the right in Cold War thought and policy. The report was undertaken at the directive of the President.

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27 Ibid. 5  
28 Ibid. 7  
29 Ibid. 6
The National Security Council members wrote it with assistance from consultants such as Paul Nitze, who also served as a consultant for the RAND Corporation. The report was intended as an overview of known Soviet and American objectives and military capabilities. The official purpose of the document was,

"A reexamination of our objectives in peace and war and of the effect of these objectives on our strategic plans, in the light of the probable fission bomb capability and possible thermonuclear bomb capability of the Soviet Union."

The report covered the background of the "Present World Crisis", the purposes of the USSR and United States, intentions, capabilities, and atomic capabilities of both sides, and possible courses of action for various scenarios.

The language of the NSC report portrays the tone of Cold War thought at the time as slightly hysterical. The second paragraph of the document characterizes the Soviet Union as "animated by a new fanatic faith, antithetical to our own...[which] seeks to impose its absolute authority over the rest of the world". Thus the portrayal of global Soviet intentions is immediately moved from Kennan's description of a long-term and non-confrontational belief in the eventual superiority and dominance of communism to active pursuit of world domination. This idea of the Soviet quest for world domination is repeated six times in the first nine pages, three times using the term "world domination". The repetition shows the intensity of the concern over Soviet expansionist tendencies, as well as the hyperbolic nature of the NSC-68 document. The struggle between the United States and the Soviet Union is painted in terms of black and white, right versus wrong, and good versus bad.


31 Ibid. 3
evil. The writers manage to simultaneously portray the United States as a fortress of freedom and a beleaguered world guardian fighting the "evil" of the Kremlin.\textsuperscript{32} The report maintains Kennan's idea of Soviet hostility towards the United States and the capitalist world, but instead of setting this hostility in terms of Soviet internal politics or ideology, the report claims that

"The United States, as the principal center of power in the non-Soviet world and the bulwark of opposition to Soviet expansion, is the principal enemy whose integrity and vitality must be subverted or destroyed by one means or another if the Kremlin is to achieve its fundamental design."\textsuperscript{33}

Soviet hostility was therefore perceived to be due to the United States foiling its designs for world domination.

The transformation of the American perception of the Soviet Union from Kennan's interpretation of hostile police state whose policy can be affected and explained by politics and history was accomplished by the NCS-68 document. The official United States attitude was now that the Soviet Union stood as monolithic enemy to freedom and the foremost threat to the free world. Kennan's characterization of the Soviet Union as economically weak was altered as well; though the report states the "total economic strength of the U.S.S.R. compares with that of the U.S. as roughly one to four", it adds that "So long as the Soviet Union is virtually mobilized, and the United States has scarcely begun to summon up its forces, the greater capabilities of the U.S. are to that extent inoperative in the struggle for power."\textsuperscript{34} Therefore, while reassuring the reader that the total potential American strength is greater than that of the U.S.S.R., it deliberately inspires deep

\textsuperscript{32} Ibid. 9  
\textsuperscript{33} Ibid. 4  
\textsuperscript{34} Ibid. 11
worry that the United States has not mobilized its forces, and therefore in real economic and military terms lags behind the Soviet Union.

Finally, the NSC-68 report amended the idea of containment. The report states that it is “not an adequate objective merely to seek to check the Kremlin design...this fact imposes on us, in our own interests, the responsibility of world leadership.” Therefore, the US policy was expanded to include both containment and “attempting to develop a healthy international community.” This adds the basic idea of the 1948 Truman doctrine to the Kennan’s 1947 elucidations of containment. In the idea that to protect the world and its own interests from the designs of the Soviet Union, one can see the seeds of the current view of the United States acting as an international police force, a view that the past decade has proved both controversial and dangerous.

Albert Wohlstetter’s 1958 article “The Delicate Balance of Terror”, is more a treatise on nuclear strategy than an overall look at the status of the Cold War. However, it is useful in showing the continuation the trend of increasing the conception of danger in the Cold War. Wohlstetter’s article is dispassionate, without the dramatic tone of NSC-68. However, the argument he makes for the possibility of thermonuclear war is all the more chilling for being delivered in deliberate tones. In “The Delicate Balance of Terror” one sees the culmination of the development of Cold War thought until 1960, from Kennan’s conception of the Soviet Union as hostile but militarily harmless, to the NSC-68 report characterizing the Soviet Union as an evil monolith of slavery bent on world domination, to Wohlstetter’s “The

35 Ibid. 6
36 Ibid. 1
Delicate Balance of Terror" which attributed to the Soviet Union the definite possibility of initiating thermonuclear war. The capabilities and intents of the Soviet Union become increasing awful as the Cold War lengthens.

The Cold War benefitted those who profited from climate of fear and the increased military expenditure that it caused. These included the military, its dependents, and the sectors of industry that produced military materials. The competition between the United States and the Soviet Union included competition in armaments, weapons, and the scientific advances that allowed new and potentially better versions of both. The NSC-68 report warned, "Our military strength is becoming dangerously inadequate," and cited the statistic that “the military budget of the United States represents 6 to 7 percent of its gross national product (against 13.8 percent for the Soviet Union).” The document argues that the Soviet mobilization of industry and weapons development is far more advanced than the United States’, and to catch up with the Soviet Union the United States and the Western European nations must increase military spending and mobilize industry immediately. The idea that the United States needed to mobilize immediately meant that as long as the Cold War continued and the fear of Soviet might prevailed among the American population and in Washington, the military and industry would receive massive funding. These interests, which Eisenhower called the "military-industrial complex", had a vested interest in the continuation of the Cold War.

The RAND Corporation was one of the interests that directly profited from the Cold War. It was the Cold War that allowed RAND to acquire the importance and

37 Ibid. 8
38 Ibid. 3
influence that it eventually developed. The Cold War afforded RAND the opportunity to conduct research and development for the most important military service in a time when military strength was imperative to ensure domestic security and support American interests abroad. RAND employees usually made certain to promote the Air Force in their studies, and generally erred on the side of overestimating the danger of the Cold War. Both supporting the Air Force (their main sponsor) and emphasizing the danger of the Cold War acted to assure the continuing relevance of their research and ensure future funding. For example, on page 4 of "The Delicate Balance of Terror" when Wohlstetter describes the possible weapons systems that could have “genuine capability in the realistic circumstances of a war.” He included in the list the B-47E and B-52 bombers, which were already in existence, and went on to list an impressive array of air-based strategic weapons. This includes the

"Mach 2 B-58A bomber...the Mach 3 B-70 bomber...the Dynasoar, a manned glide-rocket; the Thor and the Jupiter, liquid-fueled intermediate range ballistic missiles; the Snark international cruise missile; the Atlas and the Titan intercontinental ballistic missiles."

This list, which is one of several in the document, represents hundreds of millions of dollars for the military and military industries. It would be impossible to excuse this expenditure in times of peace and without a looming Soviet threat; it was the circumstances of the Cold War that made immense military expenditure possible, and articles like Wohlstetter’s relevant. The actions of the RAND Corporation in

40 Ibid. 4
furthering the Cold War exemplified the trend of civilian experts in advisory roles acting as a special interest in using their influence to promote policies that would benefit themselves.

Chapter 3. The Formation and Nature of the Military-Government-Intellectual Complex

Technological innovations such as the radar, rockets, tanks, and bombers were essential to the Allied victory in World War Two. The explosion of the atomic bomb confirmed the importance of scientific and technological assistance to military
endeavor. The usefulness of these inventions caused the recognition of science as essential to the war effort and thus to American security. This recognition did not end with the Allied victory. The wartime emergency relationship between the government and the scientific community was continued and broadened to ensure the continued international dominance of the United States and to combat the threat of Communism. The formalizing of the wartime relationships created the military-government-intellectual complex. Research universities, independent organizations, and in-house research organizations were hired and supported by the government and military and retained for research for those entities.

The importance of technological and scientific advances during World War II created the belief that advanced technology and scientific discovery were essential to maintaining national security. The idea that scientific development was necessary for military preparedness in the postwar world was widespread amongst both the government and military. It was the combination of this idea and Cold War anxiety that contributed the most to the development of the military-governmental-intellectual complex. A major part of the competition between the US and USSR was the arms race, and therefore keeping weapons technology and material up-to-date required an increase in scientific research and industrial contracts. The military supported these endeavors, and organizations such as the

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CIA and the State Department supported psychology, sociology, and propaganda research to help fight Communism at the level of "hearts and minds."  

Increased military activity was directly related to the expansion of academic activity, as military exploitation of academic research brought a cut of the massive military budget to the universities, funding grants and fellowships. Cold War necessity also created new fields of study, such as Kremlinology and nuclear strategy. Military and governmental grants for research became the mainstay of the intellectual community, and served to increase academic activity and to bind academia more tightly to military and governmental concerns.

Many of the institutions that characterized the military-government-intellectual complex of the early Cold War arose out of emergency wartime projects, continuing the entrenchment of civilian experts in military concerns that began in World War II. For example, the Research Laboratory of Electronics (R.L.E.) grew out of the wartime Massachusetts Institute of Technology Radiation Lab. Nine universities had substantial wartime contracts with the Office of Scientific Research and Development, including the Massachusetts Institute of Technology, Harvard, the University of California at Berkeley, Princeton, and others. After the war most of these universities established research organizations within them that were overtly or covertly supported by military or governmental agencies, such as the Lawrence Livermore Laboratory at the University of California, the Russian Research Center at Harvard, and the Center for International Studies (CIS) at the Massachusetts Institute of Technology.

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43 Ibid. xix.
Institute of Technology. The Massachusetts Institute of Technology CIS was the most prominent of these organizations, and therefore it was to the Massachusetts Institute of Technology that major projects such as Project Charles, Project Hartwell, and Project Troy were commissioned. These projects were commissioned and supported by entities such as the Air Force and the State Department, and further served to solidify the relationship between academia and the military and government. In doing so, these academic think tanks and laboratories departed from past models of academic involvement in government. Instead of acting as an entirely separate entity in a temporary advisory capacity, academia now played an active role in the pursuit of government aims. Thus, the role of the academic advisor evolved at the same time as the newer non-academic think tanks emerged and began to play an active role in policy-making.

The development and solidification of the relationship between academia, the military, and government was encouraged by many, but was also viewed with alarm by some members of the academic elite. During the war, the leaders of the scientific community believed that the organizations such as the Office of Scientific Research and Development and the Radiation Laboratory were temporary, and their creation was an emergency measure that would be concluded with the end of the war.\textsuperscript{44} To these individuals, such as Office of Scientific Research and Development director Vannevar Bush, it was important that these organizations were temporary so that after the war they would not usurp the power of those organizations traditionally at the head of the American scientific community, such as the

\textsuperscript{44}Gallison and Hevly, 290.
philanthropic foundations, advisory institutions, and private academic institutions.\textsuperscript{45}

The belief that wartime government-science collaboration should be temporary was not universal. Scientists and social scientists such as Lloyd V. Berkner, an influential member of the postwar academic environment, came out of World War Two believing that these organizations and the alliance between government and the scientific community that they represented should continue.\textsuperscript{46} These two camps within the academic community both contained influential academics, administrators, and other members of the wartime scientific effort. While they disagreed over the direction government involvement should take, and whether the government should play a role in the sciences at all, both groups acknowledged that the post-war setup of the armed services had to allow for the creation and incorporation of new weaponry to continue.\textsuperscript{47} Whether or not Bush and his associates realized it, this meant that scientific research would have to be integrated into the armed forces.

There was little question in the minds of those concerned with national security that science would be a useful tool in maintaining American dominance abroad, as well as in the fight against international communism. Political, military, and industrial leaders agreed that to maximize scientific potential, traditional organizations would have to be restructured to allow for the continuing connection

\textsuperscript{45} Ibid. 290
\textsuperscript{46} Ibid. 296
\textsuperscript{47} Ibid. 296
of the traditionally separate entities of the military, industry, and academia. This restructuring would allow for the maximum possible preparation for war in peacetime. In the belief that such preparation was necessary one can see the mark of Cold War anxiety, the anticipation of a major future war that would in all probability be dominated by technologically advanced weaponry. Many academics share the idea that peacetime preparation was necessary; Lloyd Berkner is quoted as saying, "In order to defend this country adequately, it is imperative that we think not in terms of the last war, which even now are largely obsolete, but in terms of the weapons of the next war." 

The effort to synchronize military and scientific efforts began almost immediately after the war. In 1947 the Department of Defense was created to oversee the national military establishment and the Joint Research and Development Board of the Department of Defense (JRDB) was established soon after. The Board was to oversee the scientific and technological research in process in the various branches of the military, such as that done by the newly created Office of Naval Research. However, it was only over military research that the JRDB had jurisdiction. Research conducted at the behest of the State Department, for example, existed outside of the JRDB’s purview. The role of the JRDB was to ensure that no two branches of the military were conducting identical research and thus wasting resources, cataloguing and keeping informed about military research, and advising the Joint Chiefs of Staff and the new Secretary of Defense about which weapons

48 Ibid. viii
research to focus on. This board was very similar in function and influence to the wartime Office of Scientific Research and Development. The fact that a retired president of the Massachusetts Institute of Technology became the chief of the JRDB is an example of the greater integration between the scientific community and the military, and the degree to which old notions of the proper distance between academia/the sciences and government had disintegrated.

The traditional distance between academia and government collapsed further as the government and military established connections with universities. The diminished distance between universities and the military and government were a result of several factors. Wartime research funding established a basis of communal experience and connection between the three entities prior to the Cold War era. A large number of scientists and social scientists had taken part in the war effort and then returned to academia, bringing with them experience with government and military work and the connections that they had established during that time. The academics that had done government work during the war wanted to retain the influence and support that they had enjoyed during the war years, and continuing to do government work was the only way to assure that the support and influence remained.50 Establishing university relations with military and governmental agencies allowed academics to pursue a career in academia and contribute to the national security effort at the same time.

In many cases, governmental organizations did not fund the university or programs directly. There was a great deal of covert funding of social science

50 Gallison and Hevly, 296.
organizations by the State Department and various intelligence and security organizations. An alternative to official (or unofficial) sponsorship of an organization was to simply underwrite specific studies. The more covert method of funding can be seen in American University's Behavior and Social Sciences Research (BSSR) study of torture of prisoners of war, and in more benign forms in organizations such as the RAND Corporation, which though not university-affiliated did receive grants for specific reports and studies.

The burgeoning industry of Cold War research flourished outside of the university and purely military organizations. Some of the independent organizations were for-profit organizations, such as the Abt Corporation, which applied interdisciplinary social sciences and systems analysis methods to the problems of government and industry.⁵¹ Others included Human Sciences Research Incorporated and Psychological Research Associates. Nonprofit Cold War organizations included the RAND Corporation, which though associated with the Air Force performed interdisciplinary research for a number of clients, the MITRE Corporation, the Brookings Institution, the Carnegie Endowment for International Peace, the Franklin Institute, and others.⁵²

Research in both the hard sciences and social sciences were undertaken in the military-governmental-intellectual complex. Postwar hard scientists engaged in research concerning weapons development, defense, and the creations of new technologies that could be applied to weapons systems. An example of the use to

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⁵² Donald Abelson, American Think Tanks and Their Role In US Foreign Policy (New York: St. Martin’s Press, 1996), 4.
which social science was put during the Cold War is the SORO project Prosymns, which was short for "propaganda symbols". The researchers at SORO provided the military with culture-specific propaganda handbooks for soldiers who were going to enter contested territory. The army drew on the knowledge of political scientists, historians, sociologists, and linguists to develop the Prosymns handbooks, which demonstrates how social science could be directly useful to the Cold War effort. Studies such as Project Prosymns also show how the civilian expert was deeply involved in government and military world during the Cold War. However, SORO and other military think tanks were still acting in advisory and research roles. While they furthered government objectives, they did not attempt to affect the policies behind the objectives. The first think tank to attempt to affect policy in a major way was the RAND Corporation.

Of the sectors affected by the creations of the military-government-intellectual complex, the universities and academia were the most profoundly influenced. Military and government funding of academic endeavor allowed the sponsors a large share in determining the course of research, reduced objectivity within academia spheres, and impinged upon academic freedom. University administration and the government both encouraged political orthodoxy in institutions, as the universities with questionable faculty or researchers would receive less funding. Academia, traditionally a source of leftism and questioning of authority, was brought into the politically conservative fold by the dual threat of Communist witch-hunts and the loss of funding. Governmental inter-service

53 Ibid. 105
rivalries, particularly between the branches of the military and the State Department and intelligence community (CIA, etc.), could cause problems for universities and research centers that took on projects for specific organizations. This particular question was raised at MIT, where administrators worried that taking on projects for one agency would seem like a mark of favoritism and cause the other agencies (potential sources of funding) to turn to other organizations. The fact that the academic community had to take into account military politics while deciding which projects to undertake, which before would have been a matter of indifference, is an indication of how the close ties between the government, military, and scientific community profoundly affected the latter.

Worries about the effect of inter-service politicking were not the only questions plaguing scientists and universities that collaborated with the government and military. Administrators worried that such relations would jeopardize their organization's independence, and that eventually the only research being done would be that sanctioned and requested by the government. In addition, there were increasingly loud accusations from social scientists that claimed that working with the government compromised an academic's professional integrity and objectivity. Though in the 1950s and early 1960s military and government-funded research was accepted by the academic community as legitimate, this attitude waned as American righteousness began to be questioned. For example, in

54 Galison and Hevly, 302.
1960 SORO was attacked for legitimating a cynically manipulative foreign policy, and American University severed its ties with the organization soon after.\textsuperscript{55}

The conflict over the morality and legitimacy of social science in government reflected some moral qualms within the research industry being called the military-government-intellectual complex. The misgivings of some scientists about using science and social science to support the actions of a government at war, even a Cold War, was exemplified on the morning of the first test of the atomic bomb, when Oppenheimer quoted from the Bhagavad Gita, saying "Now I am become death, the destroyer of worlds." The destruction of Communism and the upholding of American values and patriotism seemed the very pinnacle of accomplishment. However, scientific research was being used to build better bombs, faster bombers, and more efficient ways to kill. The atomic scientists' movement after the end World War II illustrates the problems that some scientists had with the use of their creation. The purpose of this movement was to educate the public about the dangers of the atomic bomb, and to ensure that the bomb would never again be used as a weapon of war. While the movement disbanded by 1950 with many of their goals unrealized, the determination with which many of the Manhattan Project scientists attempted to make reparations for what they had created shows that scientists did have moral qualms about the way their inventions were used by the government. The atomic scientists' movement was also the first large-scale attempt by civilian experts to influence American public and military policy.

\textsuperscript{55} Ibid. 101
The potential for misuse of the social sciences was subtler than potential for misuse of the natural sciences. In researching ways to dominate contested populations such as those in Afghanistan and Korea and encourage development in developing countries, which often took place without regard to the wishes of the population, many social scientists were operating within a morally gray area. Social scientists also conducted studies on the torture of prisoners or war, and on the psychological effect of nuclear bombing. Many scientists and social scientists struggled to reconcile their work with both their consciences and their professional and ethical standards. However, the prevailing paradigm was that of the Cold Warrior with absolute belief in the rightness of the American cause, and to whom in was inconceivable that activities and policies that supported the fight against communism and upheld American superiority and national could be wrong. The belief in American righteousness was often coupled with a belief in and emphasis on pure rationalism, and an intellectual arrogance. Nowhere was this paradigm more prevalent than within the RAND Corporation.

Chapter 4. The RAND Corporation

The RAND Corporation was founded at the behest of General Henry Harley “Hap” Arnold, the five-star general commanding the Army Air Forces during World War Two. Before the war the Army Air Forces had not been a particularly formidable part of the armed services; however, the war had won the Army Air
Forces and Arnold a great deal of respect and political clout, due to the fact that the air forces were viewed as having an essential role in fighting and winning the war. General Arnold knew that scientific research and development had played a vital role in winning the war and enhancing the prestige of the Army Air Forces. He came to the conclusion that his branch of the service would need ready scientific research at their disposal he wanted the preeminence of the Air Forces to continue. The impact of the atomic bomb confirmed Arnold’s belief in the importance of science in the Air Force, evidence of which can be found in a speech given by Arnold in 1945 to Air Staff officers in which he announced his belief that a successful Air Force of the future must be centered around a technologically adept core.\textsuperscript{56}

In 1944 General Arnold asked an aide, Theodore von Karman, to pursue the idea of science in the Air Force, and Von Karman returned a report called “Toward New Horizons” in which he strongly recommended that the Army Air Forces establish its own research base in the form of a community of scientists working strictly for the air force. Such a community would take advantage of the political economy set in motion by World War Two, which consisted of organizations and professionals outside of military service, but who had the technical knowledge and experience that were essential to the creation of new weapons.\textsuperscript{57} His recommendation required that the Army Air Force extend and formalize their connections to the universities, research institutions, and the aircraft craft industry thus ameliorating Arnold’s concerns about losing the availability of technological

\textsuperscript{56} Collins 12.
\textsuperscript{57} Ibid. 15.
advances that had given the United States and the Army Air Forces the edge during the war.\textsuperscript{58}

In 1946 General Arnold, his civilian advisor on technology Edward L. Bowles, Don Douglas, the head and founder of Douglas Aircraft, Arthur Raymond, Douglas's chief engineer, and Raymond's assist Frank Collbohm met to discuss the founding of an Air Force think tank to be implemented as an attachment of Douglas Aircraft, thereby cementing the ties between the military, scientific community, and industry. General Arnold promised to provide funding, which amounted to about ten million dollars left over from the Army Air Force wartime budget.\textsuperscript{59} Raymond suggested the name RAND, to stand for "Research and Development", and Frank Collbohm took the position of temporary head of the organization while he looked for a permanent successor. On March 1, 1946, Army Air Force contract number MX-791 was signed and Air Force Project RAND was formed.

Upon its inception, Air Force Project RAND was immediately put under the supervision of General Curtis LeMay, the head of the Strategic Air Command (SAC) and new Air Force deputy Chief of Air Staff for Research and Development. LeMay oversaw the establishment of the RAND charter, which stated

"Project RAND is a continuing program of scientific study and research on the broad subject of air warfare with the object of recommending to the Air Force preferred methods, techniques, and instrumentalities for this purpose."\textsuperscript{60}

\textsuperscript{58} Ibid. 1
\textsuperscript{59} Abella, 13
\textsuperscript{60} Fred Kaplan, \textit{Wizards of Armageddon} (Stanford: Stanford University Press, 1983), 59.
LeMay ensured that RAND effectively had autonomy in deciding what projects to accept and research to pursue. Thus, LeMay protected RAND from undue interference on the part of the Air Force, and also demanded and received results from RAND's research.

RAND was initially established as an organization that focused entirely on solving scientific problems for the Air Force. The only full-time employees at RAND in the beginning were Frank Collbohm, who had assumed the position of permanent head of RAND; J. Richard Goldstein, an associate director; James E. Lipp, the head of the missiles department; and L.E. Root, an engineer. There were a number of consultants on the RAND payroll, and RAND hired subcontractors such as Bell Telephone, Boeing Aircraft, and Collins Radio Company to work on the technical aspects of the Air Force's contracts. By the fall of 1947 RAND's employees numbered 150. The employees and consultants were predominantly physicists, chemists, mathematicians, and engineers. In 1947 RAND leadership decided to add the social sciences to the RAND repertoire, and the leaders of RAND set up a conference in 1947 to identify possible recruits for the new social science departments. As a result of the conference economics and social science divisions were created. John Williams, the head of the mathematics division, offered the position of director of the social science division to Hans Speier and the position of head of the economics division to Charles Hitch. Both men accepted, and the new divisions began to operate in early 1948.

61 Abella, 24
The introduction of social scientists into RAND was not the only change made in the set up and operation of the organization between 1947 and 1948. In 1947 RAND changed its internal organization to create more of an academic feel. Divisions became departments, and the departments grew to include a large number of disciplines.\textsuperscript{62} This change was instituted in order to attract more academics to RAND, and to encourage a more freethinking and less regimented atmosphere. The various divisions in RAND had liaisons to facilitate interdepartmental communication; for example, RAND employee Sam Cohen was the aircraft division’s liaison in the physics division\textsuperscript{63}. However, there was no such strict division between the departments, as the institution of a liaison would indicate. The only official departmental segregation that existed within RAND was according to security clearance.

By 1960 there were eleven research departments within RAND, including Aero-Astronautics, Computer Sciences, Cost Analysis, Economics, Electronics, Logistics, Mathematics, Physics, Planetary Sciences, Social Science, and System Operations\textsuperscript{64}. Each department was administered differently according to the whims of the departmental directors. The differences manifested in the degree of organization, top-down direction, and lines of authority that operated within each department.

The Air Force used the establishment of RAND as an opportunity to strengthen ties with industry by co-establishing RAND with the Douglas Aircraft

\textsuperscript{62} Ibid. 33.
\textsuperscript{63} Kaplan, 221.
\textsuperscript{64} The RAND Corporation. \textit{The RAND Corporation: The First Fifteen Years} (Santa Monica, CA: The RAND Corporation, 1963), 3.
Company. By 1948, however, both RAND and Douglas Aircraft were unhappy with the arrangement. Project RAND was having difficulties gaining access to confidential information that was necessary for their defense analyses, as contractors were wary of sharing information that might be leaked to Douglas, a competitor. Some outside analysts were hesitant to associate with RAND, as they believed that RAND could not be objective as long as Douglas Aircraft sponsored the think tank.  

Douglas Aircraft had come to see RAND as a source of heavy expenditure with little value to Douglas itself. Also, Douglas Aircraft had lost Air Force contracts due to RAND's presence, as the Air Force went out of its way to avoid the appearance of favoritism. In 1948, Collbohm asked San Francisco lawyer H. Rowan Gaither to find an acceptable way to sever RAND's ties to Douglas Aircraft. After some debate, it was decided the best choice was for RAND to incorporate as a nonprofit corporation. Gaither advised Collbohm and the other RAND leaders that they would need about $1 million dollars to start a corporation. With Gaither as a backer, the Wells Fargo Bank of California promised them a $600,000 line of credit as long as RAND came up with the other $400,000. Gaither then advised RAND's leadership to apply for a grant from the Ford Foundation. A meeting was arranged with Henry Ford II, who endorsed the plan and awarded RAND a $100,000 interest-free loan as well as a $300,000 credit guarantee. Foundations had historically been sources of funding for think tanks and intellectual organizations, and in receiving

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65 Ibid. 30  
66 Ibid. 30  
67 Kaplan, 61.
money from the Ford Foundation RAND was maintaining the traditional relationship. With the funds in place, RAND then applied to the Air Force for permission to incorporate. After discussions with the RAND leadership, Air Force Chief of Staff Carl Spaatz signed off on the rebirth of the organization. On May 14, 1948 RAND became an independent, nonprofit corporation. The incorporation of RAND brought about greater independence for the corporation. RAND no longer had to answer to the Douglas Aircraft Company, and since it was no longer an Air Force project RAND could undertake projects for more clients, and begin to build a base of influence outside of the Air Force.

The new RAND Corporation was governed by its Board of Trustees, which included members of industry, academia, and the president and two vice presidents of the RAND Corporation. The Board of Trustees established general policies for the corporation, reviewed its fiscal affairs and client relations, and appointed officers. The Board of Directors of RAND consisted of highly placed persons in the realms of academia and industry. By 1960 these included the Presidents of Cornell, Rice, the Massachusetts Institute of Technology, and the California Institute of Technology; presidents of the Carnegie and Ford Foundations; and chairmen and presidents of various industrial concerns. RAND therefore continued to participate in the cooperation of the academia and industrial communities even after it severed its ties to Douglas Aircraft. The membership of such importance and influential people on the Board of Trustees also argues that RAND was a significant player in the Cold

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68 Abella, 31.
69 Kaplan, 61
70 The RAND Corporation. The RAND Corporation: The First Fifteen Years (Santa Monica, CA: The RAND Corporation, 1963), 12.
War political world, as such people would not have served on the board of a nonentity.

The Air Force letter no. 80-10 detailed the official policy towards the new RAND Corporation. It included the line,

"The Air Force expects to continue its working arrangement with the new corporation." 71

This arrangement consisted of RAND and its employees working for the Air Force on a contractual basis. Air Staff members and other members of the Air Force assigned studies and projects to RAND, and paid RAND based on the volume, quality, and usefulness of the resulting papers and reports. Though initially all of RAND's contracts came from the Air Force, eventually RAND began to diversify its clientele to include such entities as the State Department and the Joint Chiefs of Staff. 72

However, the Air Force remained RAND's main sponsor. The Air Force benefitted from having a think tank and informational network working almost exclusively for them- not only did RAND's suggestions and reports occasionally improve military effectiveness, but it also shored up the Air Force's position in the inter-service rivalry between the Air Force, Army, and Navy. RAND could also use its usefulness in the Air Force-Army-Navy rivalry to pressure the Air Force into providing more funding.

RAND undertook a large number of projects for the Air Force, ranging from studying the physics of nuclear fallout to studying labor productivity in Soviet and

American industry. A list of project studies, reports, and publications was put out by RAND was published at the end of every year. The only publications that were not included in the list were those that were categorized as highly classified. The existence of highly classified RAND studies is significant because it indicates that RAND studies contained sensitive information, either by using sensitive data or because the conclusions drawn and suggestions made in the study were going to be implemented or revealed too much about American secrets. Either way, that RAND documents were classified (some until this day) argues that RAND had access to insider information that was only shared with those in central strategic or policy-making positions.

As the size of RAND increased, so did its yearly budget. RAND spent less than $1 million its first year of operation, and most of the expenditure was on subcontracts. By 1950 the budget had increased to around $5.6 million. Even after incorporation, RAND was a part of the Air Force's budget, and the Senior Officers Board of the Air Force decided the amount of money allotted to RAND for any given fiscal year. While the primary source of RAND expenditure was the studies that the Air Force requested and it was the number and size of studies that RAND conducted for the Air Force that determined their funding, Collbohm and other RAND leadership occasionally had to fight for the funding necessary to keep abreast of the Air Force's requests. In 1950, for example, military budget cuts had reduced the general research allotment of the Air Force's budget to $20 million. RAND's projected budget was 5.6 million, which as one fourth of the research budget was

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73 Collins, 190.
unacceptable to a number of the Senior Staff Officers, who suggested allowing RAND a budget of $3 million. Collbohm had to imply that RAND might turn to the Army or Navy for work in the event of such a limit, thus undercutting the Air Force’s scientific advantage in the competition for funding and prestige. The combination of Collbohm’s implications and the situating of RAND’s usefulness within the paradigm of inter-service rivalry was sufficient to cause the Senior Officers Board to grant RAND a $5 million budget for that year.

RAND’s budget was necessary to support the personnel hired to deal with the Air Force’s requests and to attempt to come up with answers to the military question of the day. RAND’s employee roster went from 4 to 150 in the time between its inception and its incorporation in 1948. Many RAND employees and consultants gained employment at RAND through connections with current RAND employees. For example, physicist (and later strategist) Herman Kahn got his start at RAND through his friend Sam Cohen, who had just been hired at RAND himself.75 The intellectual status of RAND employees was impressive—between 1946 and 1960 RAND employed 18 future Nobel Prize laureates, 5 of whom would receive the honor during their time at RAND. Some of these laureates include John Nash, Jr., Kenneth Arrow, Leonid Hurwicz, and Maria Goeppert Mayer. RAND also employed or was connected to a number of ex-Manhattan Project scientists. Robert R. Bacher, head of the bomb physics division at Los Alamos, and Ernest O. Lawrence, chief of electromagnetic separation work at Oak Ridge, were both on the Board of Trustees.

74 Ibid. 191
75 Abella, 97.
at RAND. Luis Alvarez, the Los Alamos detonation group leader, was an employee at RAND, as was Los Alamos theoretical physicist John von Neumann.

RAND employees worked in a very encouraging environment. According to the memoir of RAND employee Raymond Garthoff, "Pay and working conditions were very attractive, particularly the opportunity to think in a freewheeling way...Imagination was welcomed." Part of the unrestrictive climate can be attributed to the freedom of research enjoyed by those at RAND. According to RAND employees, researchers were free to explore new and unconventional ideas without dealing with the bureaucracy of getting permission that stifled the creativity of many other research organizations. The creativity at RAND was also encouraged by not constraining results to fit or support particular policies or plans. The RAND operational ethos among its researchers, regardless of department, was that a researcher was free to arrive at any conclusion the facts might warrant.

In addition to intellectual stimulation, RAND provided a strong sense of camaraderie-RANDites were an extremely tight-knit group. Several factors contributed to this closeness. The majority of RAND employees were relatively young, averaging in their thirties and enjoyed political influence without having to deal with Washington bureaucracy. The physical distance from Washington or the Pentagon to Santa Monica reinforced the feeling of living as a group apart and aloof, yet still operating within the metaphorical corridors of power. According to Garthoff, "We had a privileged position, both 'in' on government affairs, and yet 'out'
of government bureaucracy." The consciousness of their intellectual superiority created an arrogance that they visited upon those less gifted than themselves. Their contempt was particularly reserved for military and political officialdom, though they knew that they were operating as technical employees of that group. The Board utilized the arrogance and intellectual superiority complexes within the organization to encourage original, exacting thinking. Papers were circulated among colleagues for comments, and panels of colleagues reviewed projects via "murder boards", in which they shot down unsupported or shaky ideas.

Among the various departments of the corporation, the nuclear strategists were the golden boys of RAND. They were the ones who dealt directly with the questions raised by the atomic and hydrogen bombs, ranging from their impact on military strategy to their proper deployment and storage overseas. From RAND came many of the most important nuclear strategies of the Cold War era, including deterrence and counterforce. Military historian Bernard Brodie developed the theory of deterrence during his time at RAND, and Albert Wohlstetter wrote his groundbreaking paper on nuclear war entitled "The Delicate Balance of Terror". Herman Kahn, called the "Jester of Death", was a highly visible nuclear strategist who held public talks on nuclear warfare and wrote a massive book on the subject entitled On Thermonuclear War. These and other men composed the RAND circle of "nuclear mandarins". Wohlstetter, with a dedicated circle of disciples and access

79 Ibid. 21
80 Abella 34.
81 Ibid. 34
82 Ibid. 95.
to the highest reaches of political and military power, was an acknowledged (though not universally supported) leader among this prestigious group.

RAND was able to impact government and military policy because of its importance within the military-government-intellectual complex. RAND was important relative to its contemporary organizations for a number of reasons. First, RAND was constantly in contact with the highest echelons of the military, particularly within the Air Force. RAND was conceived and founded by General Hap Arnold, the five-star general who was the head of the Army Air Forces during and after World War Two, and prior to the establishment of the Air Forces as a separate military service. Air Force Project RAND was put under the oversight of General Curtis LeMay, who was the head of the SAC and therefore an important member of the Air Staff. RAND received requests for studies from highly placed members of the Air Staff and from such organizations as the Joint Chiefs of Staff. RAND was also backed to an unheard of degree by the Air Force as a whole. Proof of the Air Force's support of RAND is found within the Air Force letter No. 80-10, which stated "The Air Force will support project RAND to the fullest possible extent" as official Air Force policy after RAND's incorporation. Few other organizations had such a high degree of official backing and involvement from their sponsoring organizations, particularly without undue interference in the research process. One of the most significant indications of the RAND's greater influence and importance compared to

its contemporary organizations was that the Soviet publication Pravda referred to RAND in the late 1950s, famously calling it “the academy of science and death.” No other think tank or similar organization received such notice from the titular enemy.

While RAND provided intelligence and scientific expertise, RAND was not originally intended to make decisions reserved for Air Force staff. RAND's intended function as that of a solely advisory body was made clear in Air Force Letter No. 80-10, “Air Force Policy for the Conduct of Project RAND”, which states,

“Investigations undertaken by RAND will normally not be carried beyond the point of obtaining the information necessary to prove of the validity of the theoretical assumptions made and the relative value of the instrumentality or technique to intercontinental air warfare or the background information necessary to prepare a type specification which can be used by the Air Force in negotiating a product development program.”

In other words, RAND supposedly existed to support Air Force ventures and to provide technical and military suggestions and advice, and their official role did not include acting to implement any of their suggestions. However, RAND did not abide by the intended restrictions of their function.

RAND's impact on military and government policy was exercised through its studies, projects, and the concepts that RAND employees developed and disseminated through the strategic community. An example of a RAND member taking measures to get their recommendations or policies implemented is the case of the overseas base study. Albert Wohlstetter conducted a study on overseas bases, which pointed out the dangerously vulnerable position of Air Force bases and recommended building bomb shelters for the planes in case of an attack. General

85 Ibid. 92
LeMay dismissed Wohlstetter’s findings. However, Wohlstetter was convinced of the importance of his findings, and presented his study to General LeMay’s superior.\(^{87}\) He approved the studies findings, and on Wohlstetter’s recommendation initiated the overhaul of the strategic air base structure, which made the bases and their contents far more resistant to potential Soviet surprise attacks.\(^{88}\) Since the bases were a crucial part of the American air strategy, this study confirmed RAND’s status as the leading civilian policy adviser group to the U.S. government and military, and made Wohlstetter’s reputation.\(^{89}\)

RAND also affected policy through the development of important strategic concepts. One such concept was “fail-safe”. Fail-safe was designed to prevent nuclear attacks going off by mistake, thereby setting off an unintended global nuclear war. Fail-safe worked by having checkpoints at which bombers would either have their missions on confirmed, or return to base.\(^{90}\) This concept was immediately adopted by the Air Force and is recognized as have prevented nuclear catastrophe a number of times.\(^{91}\) The existence of RAND, therefore, and the opportunity it afforded Albert Wohlstetter to develop and recommend this concept, can arguably be credited with saving the world.

The nuclear strategy concepts “counterforce” and “deterrence” were products of RAND. Counterforce, or second-strike capability, became the accepted nuclear strategy of the U.S. government within a few years of its development.

\(^{87}\) Kaplan, 105.
\(^{88}\) Abella, 73.
\(^{89}\) Ibid. 63
\(^{90}\) Ibid. 86
\(^{91}\) Ibid. 86
Deterrence, or making it strategically nonfeasible for a rational foe to attack because the repercussions of such an attack for the attacker would be greater than the benefits accrued, was proposed by Bernard Brodie soon after the detonation of the first atomic bomb. Deterrence was the basis of most accepted nuclear strategies between 1945-1960, including massive retaliation, counterforce, and first strike-second strike.

RAND's direct interference in policy before 1960 was in response to the military policies of President Eisenhower. After General Eisenhower became the President, he instituted a cutback in military spending called the "New Look". This reduction in military funding threatened the resources of the Air Force and therefore the RAND Corporation. At the same time, Eisenhower commissioned a working group called the Gaither Committee to study the state of American preparedness with regards to the Soviet Union. The committee's report, which many RAND employees assisted in writing, determined that the United States was far behind the Soviet Union in military preparedness. The concept of a "missile gap" particularly emphasized within the report. Though the Eisenhower Administration attempted to bury the report, it was leaked to the press and caused a massive uproar. Democratic politicians accused the Republican president of putting the United States in danger with his military cutbacks, and the missile gap was a concept that these politicians rallied around. After an investigation ordered by Eisenhower, it came to light that the idea of a missile gap originated from RAND. The President was forced by public outcry to increase the military budget, and RAND's funding was again secure.
Conclusion

The civilian expert became increasingly involved in government, the military, and policy throughout the first half of the 20th century. However, they were for the most part restricted to advisory and research positions. Even when civilian expert organizations attempted to get policy implemented, they did so from a position outside of the government apparatus. The status of the civilian expert began to change during World War II and into the Cold War. Academics and other members of the intellectual community became a part of the governmental system through their involvement in think tanks, government-sponsored laboratories, and other
organizations that conducted research and development or acted as advisors for the government and military, and thus gained political influence.

An example of the increased political influence of the civilian expert was the creation of the Presidential Science Advisory Committee and the appointment of a Special Assistant to the President on Science and Technology. President Eisenhower created the committee and appointed a Special Assistant after the Soviet launch of Sputnik 1 in 1957. Eisenhower appointed James R. Killian to the position of Special Advisor. By these actions, President Eisenhower civilian expert advisor to the level of the White House, the highest level of political influence possible in the United States government. The only civilian scientist to have a comparable relationship to the President was Vannevar Bush during his tenure as head of both the OSRD and NDRC in World War II, and his role of scientific advisor to the President was not official.

There was a definite movement within the intellectual community towards a greater involvement with government and governmental policy. This trend became more pronounced over time, until the community of civilian expert advisors became more of an interest group than a disinterested and scientifically objective enterprise. The RAND Corporation was the first think tank to operate as a special interest group in any significant way. Because of the RAND Corporation's heavy involvement in the prosecution of the Cold War, it was in RAND's best interests to ensure that the Cold War continued and that the Soviet Union was perceived as

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perhaps more dangerous than it actually was. RAND used its influence and intellectual clout to further US involvement in the Cold War, and therefore it's own profits.

RAND did not act solely out of its own interests and to push its own policies. RAND still operated as a research organization, and the incidences of RAND furthering its own policies were the exception rather than the norm. It is the existence of these incidences that makes RAND the prototype of the special interest think tank that later organizations built on. This development resulted in the RANDite Whiz Kids of the McNamara era, and the politically motivated research think tanks that advised presidents Nixon, Carter, Reagan, and Clinton, such as the Economic Policy Institute, the Heritage Foundation, and the Progressive Policy Institute.93

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93 Abelson, 1.
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