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Duck and Cover: How Print Media, the U.S. Government, and Entertainment Culture Formed America's Understanding of the Atom Bomb

Daniel P. Wright
Wright State University

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DUCK AND COVER: HOW PRINT MEDIA, THE U.S. GOVERNMENT,
AND ENTERTAINMENT CULTURE FORMED AMERICA'S
UNDERSTANDING OF THE ATOM BOMB

A thesis submitted in partial fulfillment of the
requirements for the degree of
Master of Arts

By

Daniel Patrick Wright
B.A., University of Cincinnati, 2013

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I HEREBY RECOMMEND THAT THE THESIS PREPARED UNDER
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FOR THE DEGREE OF Master of Arts

Jonathan Winkler,
Thesis Director

Carol Herringer, Chair History Department
College of Liberal Arts

Committee on
Final Examination

Drew Swanson, Ph.D.

Nancy Garner, Ph.D.

Robert E. W. Fyffe, Ph.D.
Vice President for Research and
Dean of the Graduate School

ABSTRACT

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Duck and Cover: How Print Media, the U.S. Government and Entertainment Culture
Formed America's Understanding of the Atom Bomb

This research project will explore an overview of the different subsections of American post-war society that contributed to the American “atomic reality” in hopes of revealing how and why the American understanding of atomic weapons did not slowly evolve over the course of a generation, but instead materialize rapidly in the years following the bombing of Hiroshima and Nagasaki. By analyzing government sources and programs, print media sources such as newspapers and magazines, and the American entertainment culture of the 1940s and 1950s, this research project will answer exactly why and how the American public arrived at its understanding of the atom bomb.

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I. INTRODUCTION

On a cool January evening in 1961, a B-52 bomber, flying a routine mission as part of the American strategic defense program, broke up over the skies of North Carolina. Along with its eight man crew, the American bomber was also carrying two “Mark 39” thermonuclear warheads. While one, slowed by a parachute, fell harmlessly to earth, the second plummeted into a field about twelve miles from the city of Goldsboro, North Carolina. “When Air-Force experts [rushed] to the North Carolina farm to examine the weapon after the accident, they found that five of the six safety interlocks had been set off by the fall: only a single switch prevented the 24 megaton bomb from detonating and spreading fire and destruction over a wide area.”¹ The explosive power of the Mark 39 would have been thousands of times larger than the warheads that were dropped over Hiroshima and Nagasaki and would have surely rendered much of the eastern seaboard uninhabitable. What could have been the most devastating nuclear accident in global history was largely averted by a great deal of good fortune and luck. Had the bomb detonated, the world as we know it would have been dramatically different, and with it, America’s understanding of nuclear weapons.

¹Parker Jones, Nuclear Weapons Safety Department, “Goldsboro Revisited”, October 22, 1969, 1, accessed January 15, 2015, <http://www.theguardian.com/world/interactive/2013/sep/20/goldsboro-revisited-declassified-document>. While the 1969 Parker F. Jones declassified document was originally acquired by Eric Schlosser for his book *Command and Control*, the document itself was published by the *Guardian* newspaper on September 20, 2013.

The bombs that fell over Goldsboro did not detonate and instead were recovered by the American government in the days following the accident. As time passed, the incident was largely forgotten and is remembered today by an almost purposely inconsequential sign which states that the area was involved in a nuclear accident. The manner in which the Goldsboro accident receded into the pages of history speaks volumes of American society's flawed understanding of nuclear weapons. Much like the paltry sign one might come across in a seemingly random North Carolina field, the legacy of atomic weapons in American society is too often one of misunderstanding.

THE BOMB'S CREATION

America's first encounter with the atomic bomb took place during the turbulent years following America's entrance into the Second World War. The secretive government program known as the Manhattan Project, established in 1942, included the development of three main research facilities in Oak Ridge, Tennessee, Los Alamos, New Mexico, and Hanford, Washington. While the vast majority of the workers at these facilities did not fully understand why they had been recruited to work in these rural communities, they were, in many cases, unwittingly participating in some of the most cutting edge and dangerous technological research that the world had ever seen. While describing the research as cutting edge and dangerous may conjure up images of enormous laboratories and perilous missile tests, in reality, the atomic frontier can more accurately be described as domestic and suburban. As Kate Brown observes in her book *Plutopia*, which examines the cities of Richland, Washington and Ozersk, Russia, two of the main plutonium producing cities of their respective countries during the Cold War,

the atomic frontier “generated happy childhood memories, affordable housing, and excellent schools in prize-winning model communities that became havens for the new nuclear families that inhabited them.”² The U.S. government went to great lengths to ensure that its workers had an idyllic lifestyle, in spite of the fact that they were told nothing of what it was that they were creating.

The Manhattan Project culminated in the world’s first successful test of an atomic bomb, known as the Trinity Test. The enormous investment in the Manhattan project paid off as the skies lit up over the New Mexico desert. Two other bombs were subsequently constructed and later dropped on the cities of Hiroshima and Nagasaki, Japan, displaying the awe inspiring power of the atomic bomb to the public for the first time.³ The months and years that followed the bombing of Hiroshima and Nagasaki spurred a cultural revolution in the United States and marked the dawn of the atomic age.

THE ATOMIC CULTURE

The “atomic culture” that emerged following the Second World War permeated every facet of American society and has indeed been covered by a multitude of authors. Much of the scholarly work dealing with America’s atomic culture deals with its transformation throughout the second half of the 20th century. While extensive research on the topic reveals an ever evolving society whose feelings toward atomic energy are constantly changing, what is often overlooked is the impact of the first two decades of

² Kate Brown, *Plutopia: Nuclear Families, Atomic Cities, and the Great Soviet and American Plutonium Disasters* (New York: Oxford University Press, 2013), 3.

³ While this brief description of the Manhattan project serves the purpose of this research project, a more thorough analysis of the history of the Manhattan Project can be found in Richard Rhodes, *the Making of the Atomic Bomb*, (New York: Simon and Shuster, 1988).

post-war America. As Dick Van Lente observes as editor of *The Nuclear Age in Popular Media: A Transnational History*, in the first two decades after the Second World War, there emerged “a deluge of texts and images, ranging from serious explanation to wild fantasy.”⁴ Such efforts at embracing nuclear technology came in the form of not only “newspapers, illustrated magazines, and exhibitions, but also novels, comic strips, and films.”⁵ Much like the old adage that we are most impressionable as children, so too was the American public during the early years of the U.S. nuclear program.

The manner in which a society comes to understand and ultimately embrace a technological innovation is always unique. At the time of its invention, the printing press was perhaps just as revolutionary as the atomic bomb, yet it lacked the awe inspiring, captivating display of a nuclear detonation so proudly portrayed to the American public in the weeks following the bombing of Hiroshima and Nagasaki. As Thomas Misa observes in his book *Leonardo to the Internet* “we tend to look at technology as cumulative and irreversible, permanent and for all time,” however, technology is far often more complex than this. “Machines invented in one time, or place, might well need to be rediscovered or reinvented” before they are accepted and utilized by their respected societies.⁶ In this way, American society’s understanding of the atomic bomb proved to be somewhat revolutionary. In addition to the revolutionary nature of the bomb itself, the secrecy surrounding it further contributed to the often misleading and in some cases, fairy tale narratives that emerged throughout the 1940’s and 1950’s. Despite the complexities

⁴ Dick Van Lente, *The Nuclear Age in Popular Media: A Transnational History, 1945-1965* (New York: Palgrave Macmillan, 2013), 2.

⁵ *The Nuclear age in popular media*, 2.

⁶ Thomas Misa, *Leonardo to the Internet: Technology and Culture from the Renaissance to the Present* (Baltimore: John’s Hopkins University Press, 2011), 26.

of nuclear fission, American society's reaction and subsequent acceptance of the atomic bomb was revolutionary because it materialized so quickly. While it took generations for the world to fully appreciate the societal impacts of the printing press, the U.S. public settled on its atomic reality within the first decade of the bomb's inception.

Long before the Cuban missile crisis or the Chernobyl disaster, the American atomic reality was shaped by forces that did not necessarily garner national headlines, nor did they initiate a national movement. A close analysis of print media, American post-war culture, and government records serve as the foundation for the central argument in the pages to follow, which is that in stark contrast to the theory that it takes generations for a society to fully comprehend a technological innovation, the American atomic reality was born and reached maturity within the first decade of its existence, due in large part to the bomb's saturation into American life, and the message it carried with it. The result was an American public wholly ignorant of the bomb's destructive capacity. While this research project does not seek to redefine some flawed chapter of American history, it does succeed in dispelling some common myths about America's past and refocuses analysis of U.S. nuclear history on the origins of American society's understanding of it.

II. Origins of the Atomic Reality

“Nothing in all the world is more dangerous than sincere ignorance and conscientious stupidity.” These words, spoken by Martin Luther King in 1963, help frame American society at the dawn of the nuclear age and while King’s words were originally meant to incite outrage at the injustice of segregation, they perhaps describe, just as well, the emergence and evolution of American society’s understanding of atomic weapons.

At the dawn of the nuclear age, the American people took a collective deep breath as the bloodiest war in human history drew to a close and the stress created by fear and uncertainty was replaced by the prospect of hope and revival. Post-war America offered its citizens an aura of global superiority punctuated by the emergence of a post-war society that was obsessed with innovation and driven by a collective love of all things technological. The technological innovation of the 1940’s had culminated in the creation of the world’s first atomic bomb, detonated first in the deserts of the U.S. Southwest and then subsequently put on frightening display over the heavily populated cities of Hiroshima and Nagasaki. “Fat Man” and “Little Boy,” as the bombs were affectionately named, represented the defining moment when a single technological breakthrough effectively ended a conflict and solidified in the minds of the American people that the atomic bomb was a source of good, instead of a tool of utter destruction.

In the immediate post-war years, as American society sought to grasp the enormous implications of the atomic bomb, they turned to sources of information like newspapers and magazines, not only to read about the incredibly complex technology, but to view pictures of its frightening power. What they found within the pages of print media sources like the *New York Times*, *TIME Magazine*, *Popular Science* and *Life Magazine* was a narrative of the atomic bomb that often downplayed its significant destructive capabilities and emphasized its potential for good. As we will see in later chapters, this approach not only served to mislead the American public, but further contributed to the widespread public acceptance of the atomic bomb and the emergence of what is today widely known as the “atomic culture.”

While print media played a large role in creating the atomic culture of the post-war years, the entertainment industry played a vital role in sustaining it. The atomic culture which began to take shape in the late 1940's and early 1950's encompassed nearly all aspects of American life. From children's toys like the “Atom Bomber” to drinks like the atomic cocktail, the atomic culture appeared in a variety of forms from coast to coast. Films such as *The Incredible Colossal Man* and *It Came from Beneath the Sea* offered their viewers a view of atomic weapons from Hollywood's perspective, and while numerous movies depicted the horrors of nuclear weapons, their routine appearance in films of the day so soon after the invention of the atomic bomb helped cement their acceptance as part of American life. In addition to films, some of the world's most popular comic books also emerged out of the atomic age. While Spiderman and the Incredible Hulk are household names today, they would not have been created were it not for the existence of the atomic bomb and they have an enormous following due, at

least in part, to their intimate connection with the American atomic culture. These few examples speak to how widespread the atomic culture was in post-war America, and while the atomic culture thrived, it could never have attained the level of acceptance that it did without the assistance of the U.S. government.

Like all cultural movements, legitimacy must play a central role and in the case of atomic weapons the U.S. government was central to that legitimacy. John Canaday observed, in his research on the atomic bomb in American society, that “nuclear weapons employ a recently discovered and ‘mysterious’ source of energy[,] most people do not understand how these weapons work—or even, despite exposure to these concepts in high school science classes, how atoms are structured.”⁷ Due to this lack of understanding the American public was forced to turn to a number of different sources to provide that legitimacy. While newspapers and magazines provided the public with a narrative about the atomic bomb, they turned to the U.S. government for answers about its life threatening dangers and how Americans could best keep themselves safe. What may seem as misplaced trust in the American government today was far from the reality in the 1940’s and 1950’s when American society both respected and trusted the U.S. government’s advice and opinions. This willingness to trust the U.S. government played a central role in shaping the American atomic reality in that it resulted in a public that was wholly ignorant of some the bomb’s potential dangers, dangers that the American government either failed to communicate, or in some cases intentionally veiled from the wider public.

⁷ Robert Jacobs, *Filling the Hole in our Nuclear Future: Art and Popular Culture Respond to the Bomb* (New York: Rowman and Littlefield Publishers, 2010), 12.

Indeed, the dawn of the nuclear age ushered in a technology that years prior seemed inconceivable, something only created in a work of science fiction. The sheer complexity and enormity of these weapons would further hamper American popular culture's representation of them simply due to the fact that "such destructive power defies self-defense and overwhelms imagination, frustrating our descriptive efforts."⁸ Thusly, print media, entertainment culture, and U.S. government propaganda all played important roles in shaping the American atomic reality and as the chapters that follow will explain, although these forces differed in exactly how they influenced American thought, they all worked collectively to create a flawed understanding of atomic weapons.

HOW AMERICA VIEWED THE BOMB

How was it possible for American society to not only willingly accept atomic energy with open arms, but to do so as quickly and with such little regard for the seemingly obvious dangers the technology posed? The answer can be found by looking at how the message of the atomic bomb was packaged and delivered to the American people in the years following their use. The creation of the atomic bomb meant many things. It meant that a weapon existed that fundamentally and forever changed the art of war, it created a panic for civil defense planners around the globe, and it further served as a crowning achievement during the most technologically advanced war in modern history. Indeed, in military and political circles the atomic bomb created a host of problems, yet in the eyes of the American public it solved one. The majority of American society saw the atomic bomb as a symbol of war's end, and the rise of America as an unrivaled world

⁸ *Filling the Hole in our Nuclear Future*, 11.

super power. Their understanding was not far from reality. American industrial output during and after the Second World War was staggering and the United States had taken a leading role in shaping the post-war world. Accordingly, it should come as no surprise that the American public had a very positive outlook in the wake the unconditional surrender of the Japanese and it was this very optimism that the U.S. government counted on to drum up support for further nuclear research in the post-war years.

DEFINING THE BOMB'S ROLE

The tactics used by the American government in the post-war years to raise support for further nuclear research paralleled many of those used on the atomic frontiers so poignantly described in Kate Brown's *Plutopia*. The idyllic lifestyles created out of thin air on the atomic frontier served to shield workers and their families from the dangers associated with nuclear research and many of these same tactics were used in the post-war world. Kate Brown's *Plutopia* serves as a perfect case study for understanding why and how American society developed such a flawed understanding of nuclear weapons in the post-war years. While Brown's work compares and contrasts the facilities at and surrounding the communities of Hanford, Washington and Ozersk, Russia, there are some startling similarities between her findings and how the broader American population viewed the bomb. As she observes, "the plutonium pioneers of Richland and Ozersk recall never having to lock their doors, children roaming safely, friendly neighbors, and the absence of unemployment, indigence, and crime."⁹ These highly desirable social characteristics were emerging from some of the most dangerous and

⁹ Brown, *Plutopia*, 3.

radioactive facilities in the world. “Of all the stops on the nuclear weapons assembly line, plutonium production is the dirtiest. In four decades of operation, the Hanford plutonium plant near Richland and the Maiak plant near to Ozersk each issued at least 200 million curies of radioactivity—twice what Chernobyl emitted—into the surrounding environment.”¹⁰ Such staggering statistics beg the question of how such an apparently menacing technology could have been so universally and positively accepted. In the case of Ozersk and Hanford, a type of idyllic life or “Plutopia” was created to entice workers and their families to pick up and move their lives.¹¹ As Brown notes, “the orderly prosperity of Plutopia led most eyewitnesses to overlook the radioactive waste mounting around them”¹² thus creating an understanding of atomic weapons that was, in large measure, disconnected from reality.

Much like Brown’s “Plutopia,” post-war American society suffered a similar fate, yet much further reaching. Due to the fact that atomic weapons dominated much of the early post-war conversation, it should come as no surprise that the topic permeated almost every aspect of American life. From box-office movies to the atomic cocktail, in the late 1940’s and 50’s, America’s largest population centers could seldom go twenty-four hours without coming face to face with some facet of the atomic culture. It should also come as no surprise to a student of history that certain revolutionary inventions, or extraordinary individuals, can not only influence a time period, they often serve to define it. The atomic bomb was no exception. While the emergence of an atomic culture was

¹⁰ Brown, *Plutopia*, 3.

¹¹ Brown, *Plutopia*, 4.

¹² Brown, *Plutopia*, 4.

not revolutionary in and of itself, the manner in which it was created is what one finds alarming.

A recent study of *Life* Magazine during the Cold War, by Scott Zeman, explores the influence of *Life* and its impact on the American atomic reality with what Zeman terms the “bright atomic future narrative” or, the calculated steps taken by the magazine to cast the complex nature of nuclear technology in a positive light while, at the same time, steering the American public away from the realities of its destructive capacity. Zeman states that this “bright atomic future narrative appeared immediately after the bombings of Hiroshima and Nagasaki and seemingly offered comfort to a people who had just unleashed the most destructive weapon yet conceived on two cities and raised the specter of future atomic devastation.”¹³ Such tactics employed by media outlets, “not only served as a cultural ‘anodyne to terror’, it also served the interests of the U.S. government and media by focusing attention on the beneficent atom (peace) not the malevolent atom (war).”¹⁴ By showcasing the positive aspects of the atom bomb, the U.S. government and various media outlets were able to captivate the hearts and souls of everyday Americans and in so doing, pour the foundation of what would become a flawed nuclear reality.

The following chapters will explore this fictional narrative and its roots. As stated previously, the atomic bomb saturated much of American culture in the post-war years, yet the three most significant factors influencing the American public were print media, popular culture, and government programs. These three elements were not simply

¹³ Scott C. Zeman, “To See... Things Dangerous to Come to: *Life* Magazine and the Atomic Age in the United States,” in *The Nuclear Age in Popular Media: a Transnational History, 1945-1965*, ed. Dick Van Lente (New York: Palgrave Macmillan, 2013), 61.

¹⁴ “To See... Things Dangerous to Come to,” 61.

contributing factors to a flawed understanding of atomic weapons, they were, in large part, responsible for creating it and in so doing, left generations of Americans wholly out of touch with their country's most powerful tool of destruction.

III. The Power of Print Media

On the morning of December 8th, 1941 the front page of every newspaper across the United States announced in big bold letters that America had been attacked by the Empire of Japan, followed by a story that detailed the events of that fateful morning. The thoughts and opinions of the American people on both the prospect of a looming war in Europe and the Pacific were largely formed through newspaper and magazine articles. In the late 1940's and early 1950's there was perhaps no greater way to disseminate information to the masses than through print media. Magazines and newspapers provided Americans with daily and weekly updates on the domestic and international news of the time. Magazines such as *LIFE*, *Time*, and *Popular Science* and newspapers like *The New York Times* and the *Chicago Tribune*, in many ways, served as the heartbeat of American culture by addressing the events and stories that its readers wanted to see and read. In a time before the widespread emergence of nightly news programs, when televisions were largely reserved for only the more affluent households, the American public relied on magazines and newspapers to keep up with current events.

While post-war American society was dominated by news of peace and prosperity, few stories garnered as much consistent attention as the atomic bomb. Images of its destruction were regularly printed in magazines like *Life* and speculation about its impacts in the future filled column upon column on the front pages of various print media across the United States. The scope and reach of print media in post-war America was

staggering, with *Life Magazine* alone reaching “21 percent of the entire population over ten years old, (around 22.5 million people).”¹⁵ Such a statistic truly speaks to the potential influence of print media in the post-war world, and by adding in the reach and influence of other magazines such as *TIME* and *Popular Science*, it becomes obvious just how much print media was responsible for molding the message of atomic weapons and, correspondingly, America’s understanding of them.

One cannot overstate the far reaching influence of print media in post-war America. The words and images of *Life Magazine* had the ability to reach millions of people at a time and like many other popular magazines and newspapers, “engaged in constructing narratives about the meaning of the atomic age—in photographs and in text.” Such practices by major publications like *Life* “encouraged Americans to think about the meaning of the atom in formulaic ways.”¹⁶ In many ways, popular magazines and newspapers had a profound impact on American society and research based on the articles and photographs contained between their covers highlights the important trends and feelings of the time. In an article published in 2012, Scott C. Zeman argues that “American culture has long greeted technological developments such as the coming of the railroad or the use of electricity with utopian expectations [and] in this regard, atomic power was no exception.”¹⁷ At the end of the Second World War, the American public had peace and prosperity on their minds and while a technology such as the atomic bomb

¹⁵ Scott C. Zeman, “To See... Things Dangerous to Come to: *Life Magazine* and the Atomic Age in the United States,” in *The Nuclear Age in Popular Media: a Transnational History, 1945-1965*, ed. Dick Van Lente (New York: Palgrave Macmillan, 2013), 54.

¹⁶ “To See... Dangerous Things to Come to,” 54.

¹⁷ “To See... Dangerous Things to Come to,” 61.

had no business being associated with the idea of peace, it nevertheless became synonymous with it.

POPULAR MAGAZINES AND THE BOMB

While during and after the second World War the American public subscribed to a multitude of popular magazines, few are more appropriate when discussing an issue as complex as the atomic bomb than *Popular Science*. *Popular Science* magazine was capable of explaining complex scientific discoveries to a broad audience spanning the full spectrum of social classes. This is an important point because it explains why a close examination of *Popular Science* articles in the years following the end of the Second World War can aid in understanding how American society came to view scientific discoveries at that time. While the post-war world was a proverbial hotbed of scientific discoveries, few garnered the amount of long lasting attention in magazines than the atomic bomb. Magazines such as *Life*, *Time*, and *Popular Science* “represented the meaning of nuclear power and the atomic age”¹⁸ and a close look at some of these articles reveals how.

Popular Science magazine, while not as well known today, was one of the fastest growing magazine brands in 20th century America. Described as a “true reflection of humankind’s progress” the magazine covered a wide range of scientific stories from the invention of the telephone to the first automobile.¹⁹ Though *Popular Science* lacked the enormous subscription numbers boasted by magazines like *Time* and *Life*, it stood alone

¹⁸ *The Nuclear Age in Popular Media*, 74

¹⁹ “The History of Popular Science,” *Popular Science*, July 23, 2002, accessed February 9, 2015, <http://www.popsoci.com/scitech/article/2002-07/history-popular-science>.

as the voice of scientific intrigue to over 1 million Americans throughout the 1950's.²⁰ At the heart of *Popular Sciences* technologically inspired articles during the 1940's and 50's was the atom bomb, a singular technological development that revolutionized how the scientific community and more broadly, the American public viewed the world in which they lived. *Popular Science* seized this opportunity and essentially took control of the narrative of atomic weapons and in so doing, emerged as one of the foremost voices for the atomic age in American society.

One example of this emerging narrative can be found in the May 1949 issue in an article entitled "So A-Bombs Aren't So Bad?" which provided readers with quotes from R. E. Lapp, a physicist who worked on the Manhattan Project, and P. M. S. Blackett, who had recently won the Nobel Prize in physics. These two prestigious scientists were of the opinion that the fear created by atomic weapons was unwarranted and they sought to dispel some of the myths of their time.²¹ Setting aside the content of the article, the title "So A-Bomb's Aren't So Bad" served to seriously mislead any potential reader because it misrepresents the destructive capacity of atomic weapons which had been displayed only four years earlier and had been responsible for the deaths of over 130,000 people. The title further served to misrepresent the argument of the two scientists in question. Blackett and Lapp based much of their argument on the immediate threat posed by atomic weapons as well as the defensive obstacles created by a weapon of this magnitude.²²

While the article's title, which was most likely penned by a magazine editor rather than

²⁰ "The History of Popular Science."

²¹ Volta Torrey, "So A-Bombs Aren't So bad?" *Popular Science*, May 1949, 124. Accessed 14 February, 2015, <http://www.popsci.com/archive-viewer?id=ZiQDAAAAMBAJ&pg=2&query=So%20A%20Bombs%20Aren%27t%20so%20bad>.

²² "So A-Bombs Aren't So bad?" 124-125.

the authors themselves, succeeds in grabbing one's attention, it falls appallingly short of accurately representing the contents of the subsequent story. The title serves as a perfect example of the positive narrative often constructed in post-war American print media and is but one of many articles that succeeded in purposefully misleading its readership.

While the title of the May 1949 article in *Popular Science* was troubling enough, the contents of the larger article present an entirely different problem. While Blackett and Lapp are certainly qualified to speak with authority about atomic weapons, their words serve to trivialize the deadly technology in a way that serves to further promote a narrative that atomic weapons are not as dangerous to Americans as they are to other nations.²³ While such an observation would have been difficult to determine in 1949, the notion that the citizens of a city like Los Angeles would have been more prepared for a surprise nuclear attack in 1949 is absurd and only served to placate the fears of the American public while doing nothing to further their understanding of the technology. The article goes on to discuss the effect of the atomic bomb on brick structures using Hiroshima and Nagasaki as its case study. Blackett suggests that while initial reports stated that the atomic bombs dropped in August of 1945 contained the equivalent of 30,000 tons of TNT, in actuality it was closer to 3,000 tons.²⁴ In reality the bombs dropped over the cities of Hiroshima and Nagasaki had been around 11 kilotons, yet, despite the author's rebuttal of such an observation, the debate about the power of the atomic bombs and the efforts by men like Blackett to essentially lowball their destructive capacity, only further belittled the American perception of the technology. Historian Paul

²³ "So A-Bombs Aren't So Bad?" 125.

²⁴ "So A-Bombs Aren't So Bad?" 124.

Boyer further argues that to associate a nuclear weapon with such a conventional term as a “bomb” only further obscures the understanding of the technology and that “the use of the word ‘bomb’ carries with it a completely inaccurate picture of what this [device did],” and claiming otherwise would be like comparing how “the first feeble flight of the Wright brothers contrasts with the performance of today’s aircraft.”²⁵

An article such as this in *Popular Science* contribute to our understanding of how the narrative of atomic weapons was shaped using print media. While publishing stories that question the destructive capacity of atomic weapons is one way to change the atomic narrative in post-war America, another strategy that garnered as much attention were stories that suggested that atomic energy could be a source of good in the world.

Programs such as Atoms for Peace and Operation Plowshare sought to paint atomic weapons with a peaceful brush, suggesting that while atomic weapons could be used as a weapon of war, they could also be a catalyst to spreading peace and prosperity around the world. An article written in *Popular Science* in December of 1952, while addressing the recent invention of the Hydrogen bomb, states that “if the H-bomb can be made of peaceful and industrial use, there is a chance that it will be a blessing instead of a curse upon civilization.”²⁶ While it is worth noting that nuclear technology was in its infancy, so too was science’s understanding of its potential benefits: to even suggest that hydrogen bombs could serve as a blessing to the world, while ignoring the potential for abuse, was a reckless approach to informing the general public. By 1949, the Soviet Union had

²⁵ Paul Boyer, *By the Bomb’s Early Light: American Thought and Culture at the Dawn of the Atomic Age* (Chapel Hill: University of North Carolina Press, 1994), 66.

²⁶ Hartley E. Howe, “Peaceful use for H-Bomb Seen,” *Popular Science*, December 1952, 246. Accessed February 10, 2015, <http://www.popsci.com/archive-viewer?id=mSEDAAAAMBAJ&pg=246&query=Peaceful%20Use%20for%20H%20bomb%20seen>.

already successfully tested an atomic bomb and most scientists agreed it would only be a matter of time before America's biggest security threat had tested a hydrogen bomb. To suggest that the creation, emergence, and proliferation of nuclear weapons could serve as a blessing for civilization would be similar to postulating that the invention of automatic weapons would simply make hunting more efficient and further reinforces how print media, such as *Popular Science*, sought to change the narrative of atomic weapons in American society.

Print media's propensity to adopt a positive narrative on nuclear weapons was pervasive in the post-war years and these narratives were far from unique to *Popular Science*. *TIME* magazine also followed the trend of highlighting the prospects of a "bright atomic future." A quick search of the words "atomic bomb" in the *TIME* magazine digital archives returns over 1,000 results in the first decade and a half after the Second World War, one of which is an article published in 1947 entitled "Taming the Atom." Written just over two years after the bombing of Hiroshima and Nagasaki in the science section of *TIME*, this September article teases the reader with the positive potential of atomic weapons, and states that "atomic energy may yet do more good than harm."²⁷ While such a statement is purposely vague, it leaves a lasting impression on the reader that by 1947 the atomic bomb presented more hope than it did potential danger. Nearly a decade later, long after the Soviet Union not only acquired its first atomic bomb but had also detonated its own hydrogen bomb, *TIME* magazine and many others in the print media continued to

²⁷ "Taming the Atom," *TIME Magazine*, September 8, 1947. Accessed January 30, 2015, <http://content.time.com/time/subscriber/article/0,33009,804198,00.html>.

write about the positive side of nuclear weapons, this time, in the business of earth moving.

In an article published in March of 1958 entitled “Peaceful Atomic Blasting,” the editors of *TIME* postulate the potential benefits of nuclear weapons in road and canal construction.²⁸ While the mere suggestion of such an idea today renders one utterly astonished, American scientists and engineers in the 1950’s and early 60’s felt as though the ever growing American nuclear stockpiles could be put to positive use and actively used print media to communicate its intentions, going as far as saying that “now it appears that within a few years [atomic bombs] may become man’s most powerful tool for fitting the earth to his use.”²⁹

These stories from *TIME* magazine are but a small sample of the hundreds of articles published in the years after Hiroshima and Nagasaki, and while not all of *TIME* magazines articles in the decades after the Second World War contained such a positive narrative about the atomic bomb, the stories discussed above helped lend legitimacy to the bright atomic future narrative that was emerging through a multitude of sources. While magazines like *TIME* and *Popular Science* offered their readers numerous articles about the atom bomb, they fell far short of covering the number of topics that Newspapers could with their daily issues and seemingly endless list of subscribers. Indeed, if popular magazines sparked the interest of the American public in the peaceful use of atomic weapons, the newspaper industry solidified their belief in it.

²⁸ “Peaceful Atomic Blasting,” *TIME Magazine*, March 24, 1958. Accessed January 30, 2015, <http://content.time.com/time/subscriber/article/0,33009,868346,00.html>.

²⁹ “Peaceful Atomic Blasting.”

NEWSSTANDS AND THE BOMB

While magazines were extremely popular in post-war America, the availability of newspapers, often on a twice daily basis, served as one of the most efficient means of informing the public and accordingly must be discussed in any conversation about American society's understanding of atomic weapons. Magazines offered Americans a wide range of stories on a weekly or monthly basis, but newspapers offered their readers the latest and greatest stories as they happened. It was newspapers that first informed the greater public about the attack on Pearl Harbor and it was newspapers that headlined the end of the Second World War. What set newspapers apart from popular magazines was their widespread availability. From the local grocery store to the corner of Main Street, if the average American did not have a newspaper delivered to their house, they certainly had every opportunity to read one. It was the newspapers widespread availability and acceptance as a source of factual information that made the newspaper's impact on the American atomic reality so significant in molding America's understanding of the atom bomb.

One of more widely read newspapers in post-war America was the *New York Times* where there exists a multitude of stories that deal with the atomic bomb. One story in particular, published in the 27 October issue of 1957 entitled "The Great Promise of the Atomic Age" discusses the potential good that atomic technology could bring to the world. While stories that discuss the potential benefits of the atomic bomb cannot be summarily categorized as a detriment to America's understanding of the technology, when they are discussed in such a way as to only highlight the positives, or at times, greatly exaggerate the potential benefits, they only serve to misinform the public. The

headline used to grab the reader's attention in this October issue states that "the peacetime atom can make the wartime atom obsolete, and if it does it offers all mankind the hope of harmony, plenty and a longer life to enjoy them."³⁰ While the headline serves to comfort its readers, it summarily ignores the potential dangers of atomic weapons and over-simplifies their potential for peaceful use. The invention of gunpowder initially offered cities a tool to expand roads and move mountains, though in reality, the invention's peaceful uses were dwarfed by its more sinister applications. In this respect, atomic weapons were no different. While splitting the atom offered the world a new source of energy whose power was unmatched, to assume that global society would only embrace such a technology for its potential benefits is evidence of a seriously flawed view of human nature and ignores the often impractical mindset of some world leaders. It may be human nature to either see the potential for good or to be predisposed to believe that good will come of every technological advance: such is not always the case.

While the *New York Times* piece on atomic weapons is introduced by a misleading headline, what is perhaps more troubling is the content of the article itself. The second paragraph of the article, while contrasting the potential power of nuclear weapons, states that "man could build an industrial civilization with a standard of living that would satisfy all his material wants to an extent never dreamed of."³¹ Such a statement, which serves as the broad thesis of the article, not only suggests that nuclear weapons could potentially be a good thing, but quite plainly states that atomic energy can

³⁰ William L. Laurence, "The Great Promise of the Atomic Age," *New York Times*, October 27, 1957, accessed January 29, 2015, <http://search.proquest.com.ezproxy.libraries.wright.edu:2048/hnpnewyorktimes/docview/114113265/17D5EAB431BA4346PQ/8?accountid=15141>.

³¹ "The Great Promise of the Atomic Age."

supply the reader with all the material wants they could ever need or imagine. Such a sentiment is dangerous not only because it is misleading, but also because it aids in creating a state of mind that associates atomic energy with a technology of limitless potential, instead of limitless destruction. While atomic energy was indeed revolutionary in the 1940's and 50's, and had untapped potential as a source of energy, to suggest in 1957 that the technology could fulfill all of the American public's hopes and dreams serves no other purpose than misleading those who chose to read about it.

The 21st century and the emergence of the U.S. nuclear program brought with it the promise of an infinite amount of power. As was stated in the previous *New York Times* article, by splitting the atom the United States had harnessed the greatest potential for power in the world and because the positive spin often associated with nuclear power, military and civilian leaders were calling for its expansion. In an article published in July 1956, Admiral Hyman G. Rickover testified in front of the House Appropriations Committee, urging them to finance nuclear power.³² While his testimony should come as no surprise from a man who was the chief of the naval reactors branch of the Atomic Energy Commission, the suggestion of atomic expansion was, at the time, nothing much more than a Cold War strategy to match the Soviet Union's nuclear expansion. Lewis Straus, chairman of the Atomic Energy Commission, "expressed concern that the Soviet Union would outstrip the United States unless this country 'did something drastic immediately.'"³³ Looking back on such statements today, it is easy to see how the United

³² "More Atom Power for Peace Urged," *New York Times*, July 20, 1956, accessed January 28, 2015, <http://search.proquest.com.ezproxy.libraries.wright.edu:2048/hnpnewyorktimes/docview/113781158/17D5EAB431BA4346PQ/13?accountid=15141>.

³³ "More Atom Power for Peace Urged."

States often used the Cold War competition between the U.S. and the U.S.S.R. to gain funding in certain areas like nuclear research without having to address some of the more pressing problems that such research unearthed.

The articles discussed above are evidence of two things. First, print media was often used as a podium to construct a positive narrative of the atomic bomb. Indeed, in the first decade after the bombing of Hiroshima and Nagasaki, the *New York Times* published over 1,000 articles that make reference to the atomic bomb and peace, which speaks to not only the amount of coverage that the atomic bomb received, but the peaceful message that was often associated with it. In the immediate aftermath of the Second World War and the decade after, the *Times* printed countless articles detailing the potential good of nuclear weapons to both stem the fears of war wary Americans and associate the technology with peace and prosperity in hopes of pleasing the populous.. Secondly, these articles serve as perfect examples of how America's misunderstanding of atomic power could prove to be beneficial in attaining both government funds and public support. While the atomic bomb technologically possessed incredible power, the influence it carried, and the culture it spurred throughout the United States, proved equally powerful. It would be a historical leap to assume that the construction of this bright atomic narrative was intentional on the part of the *Times*, yet the sheer number of articles speaks volumes of a corporation that was churning out stories that it thought the public would like to read, further perpetuating a flawed atomic reality.

IMAGERY IN PRINT MEDIA

While the written word offers the most literal way of understanding how print media manipulated America's understanding of atomic weapons, the images used in newspapers and magazines also played a vital role in shaping the American atomic reality. The impact of an image varies from person to person: the images that emerged from Japan in the days following the bombing of Hiroshima and Nagasaki quite rightfully had a lasting impact on the American psyche. The enormity of the destruction had seemed incomprehensible when one read about them in newspapers and magazines, but the images from Japan that emerged in the weeks and months after the bombing spoke to the true destructive capacity of atomic weapons. As Paul Boyer reveals in his research on the American atomic reality "all of the major elements of our contemporary engagement with the nuclear reality took shape literally within days of Hiroshima."³⁴ Ironically, the America public was best informed about the atomic bomb in the days and weeks after the bombing: its understanding of the deadly technology were manipulated in the years after.

While Hiroshima and Nagasaki were the only two occasions the world had to experience the utter destruction of atomic weapons on a civilian population, in the decade after the dust settled in Japan, the two cities began to serve as examples of what atomic bombs were not. Fat Man and Little Boy, the two bombs dropped over Hiroshima and Nagasaki, in terms of yield, were two of the smallest atomic bombs that the United States manufactured and were a mere fraction of the size of the bombs that inadvertently fell to the ground over Goldsboro, North Carolina. The images in *LIFE* magazine in October 1945 showed the indiscriminate destruction of Hiroshima: four years later, in October

³⁴ *By the Bomb's Early Light*, xxi.

1949, they showed the same landscape resurrected from the dead³⁵ and served to mislead the public with respect to how atomic weapons generally work. Fat Man and Little Boy were detonated high above their intended targets, causing utter destruction, but simultaneously limiting the amount of radioactive fallout. While Hiroshima and Nagasaki were completely destroyed, they were quickly rebuilt into two of the most beautiful cities in the world. The photos from *LIFE* associated atomic weapons with temporary destruction, something characteristic of all contemporary bombs, yet it is the long lasting and invisible killer of radiation that makes atomic weapons so uniquely devastating. Despite years of nuclear testing and an ever evolving understanding of atomic weapons throughout the Cold War, the American public still today clings to the only use of the atomic bomb on an actual civilian target, and have consequently been unable to fully distinguish between the atom bombs used in Hiroshima and Nagasaki, and the larger thermonuclear bombs developed in the 1950s.

While the preceding paragraphs highlight some of the misleading narratives of nuclear technology that were often pursued by the American print media, one must be careful not to cast print media as being completely one sided. There were numerous articles published in both newspapers and magazines that spoke of the true nature of nuclear weapons, and in the case of an August 1959 story in *TIME* magazine, offered readers a fair and balanced assessment of the realistic risks associated with the atomic bomb. Entitled “Atomic ABC’s,” the article addresses a number of common questions associated with the bomb and offers honest, and in some instances, blunt responses.³⁶

³⁵ Carl Mydans, *LIFE Magazine*, October 10, 1949, accessed February 1, 2015, <http://images.google.com/hosted/life/2b4f5439805b55ec.html>.

³⁶ “Atomic ABC’s,” *TIME Magazine*, August 21, 1950, accessed January 28, 2015, <http://content.time.com/time/subscriber/article/0,33009,812983-4,00.html>.

When addressing the question of what one could do in the event an atomic bomb exploded nearby, the author states “for those directly under an air burst there may be no warning; there is nothing they can do.”³⁷ Articles such as “Atomic ABC’s” are proof that print media sought to alert the American public to the danger of atomic weapons, it was much more productive to espouse the many advantages to embracing nuclear technology instead of demonizing it.

While print media played an integral role in shaping America’s flawed understanding of nuclear weapons, they did not do so by themselves. The “atomic culture” that emerged out of the Second World War took several years to develop and there were many contributing factors that will be discussed in later chapters. The preceding paragraphs are not suggesting that all newspaper and magazine articles about the atomic bomb portrayed only the positive narrative, but rather draws attention to the influence that these articles had on the American populace. The manner in which the American public embraced the atomic bomb in the post-war years was not passive, but continually active. While print media played a vital role, American’s infatuation with the atomic bomb could not have spread as widely, nor affected so many without the entertainment culture that formed around it.

³⁷ “Atomic ABC’s.”

IV. POPULAR CULTURE

Atomic Cocktail

Ingredients	Directions
1 ½ ounces vodka 1 ½ ounces brandy 1 ½ ounces sherry 1 ½ ounces Brut champagne	Stir the vodka, brandy and sherry well with cracked ice, then strain into a chilled cocktail glass and add 1 ½ ounces cold brut champagne.

38

The atomic cocktail serves as just one of many examples of the impact the atomic bomb had on American culture in the 1940's, 50's, and 60's. Indeed, there are numerous scholarly works that address the rapid emergence of what has been termed an "atomic culture" in post-war America.³⁹ From feature films and comic books to children's toys and popular drinks, the atomic bomb played a vital role in shaping post-war American society and culture and consequently, played a central role in fostering an inherently flawed atomic reality. While print media and visual images of the atomic bomb served as reactionary sources of how the United States understood the technology, as time passed

³⁸ David Wondrich, "Atomic Cocktail," *Esquire*, November 5, 2007, accessed February 21, 2015, <http://www.esquire.com/drinks/atomic-cocktail-drink-recipe>.

³⁹ Margot A. Henriksen, *Dr. Strangelove's America: Society and Culture in the Atomic Age* (Los Angeles: University of California Press, 1997); Robert Jacobs, *Filling the Hole in our Nuclear Future: Art and Popular Culture Respond to the Bomb* (New York: Rowman and Littlefield Publishers, 2010); Douglas Field, *American Cold War Culture* (Edinburgh: Edinburgh University Press, 2005); Paul Boyer, *By the Bomb's Early Light: American Thought and Culture at the Dawn of the Atomic Age* (Chapel Hill: University of North Carolina Press, 1994).

and the influential tide of those images began to slowly recede from the American consciousness, a semblance of normalcy returned to a country ready for peace and prosperity. It was this collective hope for prolonged peace, coupled with an entertainment industry which saw tremendous monetary potential in nuclear technology that produced the atomic culture in American society. A close look at the different ways in which the atomic bomb and associated technology were universally revered by a large cross section of American society will aid in understanding not only why Americans so readily embraced the atomic bomb, but more importantly, how that embrace contributed to an almost willing ambivalence to its destructive capacity.

THE ATOMIC BOMB AND AMERICA'S YOUTH

We begin this examination of the atomic culture in the United States by exploring how it catered to the youngest cross section of the U.S. population. While the awe inspiring power of atomic weapons captivated the minds of all ages, its complexity was quite understandably lost on young children who served only to benefit from the emergence of the technology. In the years following Hiroshima and Nagasaki, numerous toys and games began to appear on store shelves and under Christmas trees. As early as 1947, the atom bomb was being used for commercial gain by the Kix Cereal Company which began marketing the Lone Ranger Atomic Ring. This small gold colored ring had a plastic atomic bomb clipped to the top of it with a small lens with which one could look through and view images of split atoms. The advertisements that ran for this ring were

accompanied by cartoons entitled “How Tommy Thwarted the Enemy Agents.”⁴⁰ While these rings, marketed by one of the largest cereals brands in America, instilled a sense of joy and wonder in the minds of American children by themselves, they had the added appeal of being associated with the Lone Ranger. First appearing before American audiences in the mid 1930’s the Lone Ranger captivated the minds of America’s youth with its themes of adventure and heroism. Such appeals to young children is alarming: if America’s youth grow up without any sense of worry about the atomic bomb, they will likely carry those feelings into adulthood, thus generationally creating a cross section of society conceivably out of touch with reality. While representing an obvious attempt by the Kix Cereal company to exploit the awe inspiring power of the atomic bomb with childhood action hero’s, the Lone Ranger atomic ring of the late 1940’s was one of the more benign examples of how American toy manufacturers exploited America’s apparent fascination with nuclear technology to their advantage. While the atomic ring did inevitably contribute to the emerging atomic culture, bigger and larger toys that began to appear in the 1950’s and 60’s carried with them a much more malignant message.

The reason that children’s toys play such a central role in shaping the American atomic reality is that they aid in legitimizing the society’s collective embrace of atomic weapons. Associating something with fun and games inevitably causes people to fear it less. It should come as no surprise that the atomic culture catered to young children, who represented a subsection of the American populous that were not only extremely impressionable, but also intimately linked to their arguably less impressionable parents.

⁴⁰ “Lone Ranger Atom Bomb Ring Spinthariscopes,” *Oak Ridge Associated Universities*, last modified May 10, 2011, accessed March 1, 2015, <http://orau.org/ptp/collection/spinthariscopes/ring.htm>.

While one may find toys such as “the atomic ring” and other small trinkets difficult to link to the wider flow of America’s atomic reality, some of the larger, more complex toys that began to emerge in the late 1940’s and early 1950’s did not merely result in cheap thrills, they also represented a direct appeal to the younger generation’s imagination.

The atomic bomb ushered in a new era for America’s youth and in the years following its debut, there was little doubt about how young people would associate with the atomic bomb. One example of this can be seen with the “atomic bomb game” that emerged in the 1940’s. This game included a cardboard map of Japan with holes representing the cities of Hiroshima and Nagasaki. The object of the game was to drop small replicas of atomic bombs from above and have them land in the holes in order to score points.⁴¹ Another very similar game encouraged children to “practice bombing, improve your score [and] be the ace of your own air corps.”⁴²

While toys were undoubtedly the most common ways in which the youth of America identified with atomic technology, popular children’s books and comic strips also jumped on the atomic bandwagon, perhaps the most popular being the Tom Swift book collection. The first series of Tom Swift was published in 1910 and ran up until the beginning of the Second World War. The second series, which was first published in 1954, featured plots centered around the scientific and technological breakthroughs of the second half of the 20th century, and, in many instances, quite accurately predicted the technology of the future. However, Tom Swift children’s novels captivated the minds of its young readers with page turning adventure, the themes found within its pages are even

⁴¹ “12 Nuclear Toys from the Dawn of the Atomic Age,” *Gizmodo Blog*, October 15, 2011, accessed March 1, 2015, <http://www.gizmodo.com.au/2011/10/12-nuclear-toys-from-the-dawn-of-the-atomic-age/>.

⁴² “Atom Bomber,” *Vintagescope Blog*, November 7, 2013. Accessed March 1, 2015, <http://blog.vintagescope.com/post/66286846028/rogerwilkerson-atom-bomber>.

more “instructive in their depiction of the growth of American technology and the corporate industrial system.”⁴³ While many of the Tom Swift books published before the 1940’s often sensationalized the potential of scientific endeavor, the emergence of the atomic bomb ushered in a new era of scientific potential on par with the invention of electricity and the telephone. Books such as “The Atomic Earth Blaster” and “In the Caves of Nuclear Fire” serve as perfect examples of how the Tom Swift series used atomic and nuclear technology to captivate the imagination of its young audience and use the newly discovered technology to legitimize what in years prior would have been idol fantasy. “The Atomic Earth Blaster” was described by the author as a “machine that looked like a gigantic torpedo and was comprised of three main parts. Mounted to a heavy swivel base was a long gleaming steel cylinder which could be tilted in any direction [and] housed a compact atomic pile to power the implement.”⁴⁴ The enormous machine was “armed with a pair of revolving discs which could chew into the hardest rock.”⁴⁵

The atomic earth blaster, just one of the genre’s many scientific inventions that fueled the imaginations of America’s youth, is of specific importance because of the underlying message it conveyed. While children’s toys and games often glamorized atomic technology, it was a technology that was already in existence. The Tom Swift collection went a step farther by imagining the potential good that future atomic inventions could offer. Tom Swift Jr., the protagonist of the novel, is cast as a hero,

⁴³ Fred Erisman, “Tom Swift and his American Adventure” *The Social Science Journal*, 20 no. 4 (1983), 16.

⁴⁴ Victor Appleton II, *Tom Swift and His Atomic Earth Blaster* (New York: Grosset & Dunlap Inc., 1954), 1.

⁴⁵ *Tom Swift and His Atomic Earth Blaster*, 2.

someone who uses his inventions to better the world and by associating atomic technology with his inventions, one begins to view atomic technology in a positive light. Tom Swift Jr. is even celebrated at the end of the book when his father tells him that he will be “swamped with newsreel and television cameramen.”⁴⁶ This celebration of atomic energy was not unique to the Tom Swift novels and as will be shown, was indicative of the wider acceptance of atomic technology by the American public.

THE ATOMIC BOMB IN AMERICAN LIFE

The idea that children were desensitized to the wider dangers of the atomic bomb and nuclear technology is by itself not all that alarming. However, at the dawn of the nuclear age, it was not merely children who were affected by the ever growing cultural boom of post-war America, adults also became all too comfortable and were more than willing to associate the atomic bomb with a sense of joy and wonder. Thousands of people traveled to Las Vegas in the early 1950’s not only to enjoy the allure of its many casinos, but also to catch a glimpse of an atomic detonation. The United States performed 1,030 nuclear tests throughout the Cold War,⁴⁷ the majority of which took place at what was formerly an air force bombing range 100 kilometers north of the famed Las Vegas Strip.⁴⁸ Onlookers flocked from all over the country to catch a glimpse of the revolutionary technology and in doing so created a popular stop for Americans on the atomic frontier. Postcards were created depicting a mushroom cloud in the backdrop of

⁴⁶ *Tom Swift and His Atomic Earth Blaster*, 208.

⁴⁷ U.S. Department of Energy, *United States Nuclear Tests: July 1945 through September 1992*, Nevada Operations Office, December 2002, accessed March 25, 2015.
http://www.nv.doe.gov/library/publications/historical/DOEN_V_209_REV15.pdf

⁴⁸ Stephen Cass “Mushroom Cloud Memories: Las Vegas’s National Atomic Testing Museum is a Shrine to Cold War Ingenuity,” *IEEE Spectrum* 52, no. 4 (April 2014).

the Las Vegas skyline as the theme of atomic weapons began to expand exponentially. While the blasts themselves posed little risk to those watching from such a great distance, the droves of individuals who consistently traveled to the Las Vegas strip to see the detonations highlights just how accepting the American public had already become of atomic weapons as early as 1951. Not only was the average American unconcerned about the potential risk associated with witnessing an atomic detonation, in some cases they expended exorbitant amounts of money to witness one. The Nevada test site and its many atomic and nuclear tests were but a small stop on the atomic frontier, and as will be seen, the theme of atomic weapons only continued to grow throughout the second half of the 20th century to penetrate nearly every aspect of American life.

One of the better known, if seldom understood, aspects of the atomic age was the emergence of bomb shelters. In an effort to challenge the emerging threat of the Soviet Union and its plan of global supremacy through nuclear destruction, the U.S. government created the Federal Civil Defense Administration (FCDA) in 1951. While the emergence and motivation of the shelter program will be discussed in greater detail in chapter four, it is important to address it in a cultural respect due to the way in which it affected the everyday lives of American society.

If the goal of the civil defense authorities was to construct a large number of air raid and fallout shelters across the United States, it fell markedly short. Due to a lack of funding, the U.S. civil defense program served largely as an advisor to the American public, providing information on how to construct, stock, and manage bomb shelters. The American government, as well as popular print media sources, actively promoted plans aimed at protecting the American public from a potential nuclear strike. In the post-war

years this do-it-yourself mentality was marked by very stark gender roles. For men, it provided an opportunity for them to demonstrate their masculinity, taking a central role in protecting their families from the dangers of the atomic bomb.⁴⁹ Indeed, the prominence of the male role in the atomic age is not all that surprising, yet what one finds truly fascinating are the traditional gender roles that emerged through the creation of the civil defense authorities and how such roles served to domesticate the atom bomb.

“During the 1950’s and early 1960’s the atomic bomb was largely feminized and domesticated” which in many ways contributed to a decidedly deficient understanding of the risks that it posed.⁵⁰ In a 1999 article Susan Stoudinger observes that often times families were given specific roles to play to ensure the safety and security of their home in the event of a nuclear attack. While men were tasked with jobs such as building the shelters and maintaining their structural integrity, women were assigned specific tasks such as keeping the shelter tidy and neat, as well as keeping it well stocked with canned goods and water. The message conveyed to the American family through the civil defense authorities and numerous popular magazines and newspapers was a simple one; “if simple instructions are followed, most citizens will be saved.”⁵¹ This narrative of a bright atomic future that was being shaped by the civil defense authorities and willingly propagated by numerous print media sources associated incredibly simplistic tasks with nuclear safety and in so doing, erected a façade, shielding families from a more realistic understanding of the dangers that atomic weapons and nuclear technology posed.

⁴⁹ “Do-It-Yourself Security,” 40.

⁵⁰ Susan Stoudinger, “Women and the Bomb: Domestication of the Atomic Bomb in the United States,” *International Social Science Review* 74, no. 3, 1.

⁵¹ “Women and the Bomb,” 7.

The domestication of the bomb during the 1940's and 50's placed women at the head of the household, alongside their husbands and sons. While the bomb had initially emerged "as a symbol of overwhelming strength and power in a world of competition and contest," the emergence of the U.S. civil defense program of the early 1950's served to feminize the bomb by "mobiliz[ing] the domestic world of women."⁵² While men were often depicted as the one's constructing the shelters, "women, on the other hand, are depicted engaged in domestic tasks such as tending children, stocking the pantry, or decorating."⁵³ One particular advertisement, published in *TIME* magazine "depicts the typical division of labour promoted by shelter literature: Mr. Smith and his son cement the shelter wall while his daughter decorates it by painting a 'picture window.'"⁵⁴ Such examples not only reveal how traditional gender roles became associated with shelter construction, but also how the bomb itself became domesticated to the point that it became a normal part of American life. This domestication of the bomb and the U.S. governments' goal of enlisting women as a primary fighting force alongside men on the home front served to further obscure the real threats the atomic bomb posed. It was the goal of the (FCDA) to enlist as much of the population as possible to embrace the idea of atomic safety, yet, in many ways it fostered a population wholly ignorant of it.

⁵² "Women and the Bomb," 8.

⁵³ "Do-It-Yourself-Security," 48.

⁵⁴ "Do-It-Yourself-Security," 48.

MOVIES, TELEVISION AND THE BOMB

As scholars have noted, “In the years following World War II, television came of age and became an important force in forming public opinion.”⁵⁵ While televisions were not embraced by a large cross section of the American public in the first few years after the war’s end, “during the 1950s, as television sets became more affordable and programing more varied, millions of Americans brought televisions into their homes, making it the dominant mass media.”⁵⁶ Perhaps one of the most interesting aspects of the atomic age was the seemingly endless list of movies and television series which incorporated atomic technology into their plot lines or, in some cases, had an atomic theme at their core. Films such as “Split Second,” a story about several escaped convicts who seek shelter in a ghost town where the government intended to test an atomic bomb, featured atomic technology as a way to make the film more exciting. If audiences were not captivated by the escaped convicts fight for survival, they most certainly would be transfixed by the impending glimpse of an atomic bomb.⁵⁷ Movies like “Split Second” and others feature the atomic bomb as an enticing bonus to the plot: movies such as “Godzilla,” “Attack of the Crab Monsters,” “It Came from Beneath the Sea,” and “The Magnetic Monster” lean on the use of atomic technology as a justification for their otherwise implausible plots.

Perhaps the best known film from the atomic age, if not one of the best science fiction films of all time was Ishiro Honda’s 1954 classic “Godzilla”. Originally filmed and released in Japan, the film was later adapted for American audiences in 1956.

⁵⁵ Barbara Diggs-Brown, *Strategic Public Relations: An Audience Centered Approach* (Boston: Wadsworth Publishing, 2012), 53.

⁵⁶ *Strategic Public Relations*, 53.

⁵⁷ *Split Second*, directed by Dick Powell (RKO Pictures, 1953).

“Godzilla,” measuring over 150 feet tall, was born out of the U.S. nuclear tests in the Bikini Islands which had tragically killed several Japanese fishermen and sparked global outrage about the potential dangers of nuclear radiation. The film’s plot centers on the giant monster’s rampage of Japan and as Steve Ryfle observes in his 2005 article on the subject, the monster’s destruction of Japan represents a broader metaphor of a nuclear holocaust.⁵⁸ The film’s producer, Tomoyuki Tanaka, states that “the theme of the film, from the beginning, was the terror of the bomb. Mankind had created the bomb and now nature was going to take revenge on mankind.”⁵⁹ While this sub-plot was most likely lost on the film’s millions of viewers, it, and a seemingly endless list of films like it, used the atomic bomb and nuclear technology to captivate audiences and rationalize the emergence of otherwise implausible science fiction films.

Films such as “Godzilla” and “The Magnetic Monster” dominated box offices around the world, however, they largely referenced atomic technology as a secondary element to the main story. Atomic technology had been responsible for the creation of the great beast that was Godzilla, yet it is seldom discussed or referenced in the latter half of the film. In stark contrast, films such as “The Atomic Kid” and “The Incredible Shrinking Man” incorporated atomic technology as the a primary driver of the films’ plot lines and use the technology as a crutch from the opening credits to the final scenes. The 1954 comedy “The Atomic Kid” features Mickey Rooney as a young bumbling buffoon who unknowingly wanders into a fake town which is scheduled to be blown up as part of a nuclear test. After receiving large amounts of radiation, he is recruited by the F.B.I. to

⁵⁸ Steve Ryfle “Godzilla’s Footprint,” *Virginia Quarterly Review* 81, no. 1, (Winter 2005).

⁵⁹ “Godzilla’s Footprint.”

break up a spy ring.⁶⁰ Along a similar plot line, “The Incredible Shrinking Man” featured Grant Williams, whose character is shrunk down to the size of a small bug after exposure to radiation.⁶¹ Conversely, the film “The Amazing Colossal Man” features a protagonist who is exposed to a nuclear test and while being burned on over ninety percent of his body, begins to grow to enormous proportions. Films such as these used the atom bomb and the dangers associated with it, such as radiation, as the central theme of their respective plots. If the atom bomb had never been invented, movies like “The Atomic Kid” and “The Incredible Shrinking Man” would not and could not exist in their present form, and serve as examples of how even the most destructive and cynical technologies can be viewed in a positive light.

The film industry was far from the only way electronic media capitalized on the emergence of atomic energy. Numerous television shows featured the atomic bomb in hopes of exploiting the latest trend in American culture. Perhaps one of the most famous examples of the atomic bomb infiltrating American television was the Twilight Zone episode “Shelter.” The episode revolves around a friendly dinner party that is suddenly interrupted by a civil defense warning of a possible nuclear attack. The previously friendly party guests turn against one another as they desperately attempt to enter the homeowner’s air-raid shelter. Upon realizing the shelter could not hold all of the guests, the family is forced to turn against them and lock them out. As the half-hour show came to its climactic conclusion, it is revealed that the potential threat was nothing more than space debris and in fact, not an atomic bomb. As the show ends, the characters are left

⁶⁰ *The Atomic Kid*, directed by Leslie H. Martinson (Republic Pictures, 1954).

⁶¹ *The Incredible Shrinking Man*, directed by Jack Arnold (Universal International Pictures, 1957).

wondering if the atomic bomb had not destroyed their physical lives, had their fear of it destroyed their relationships.⁶² The Twilight Zone episode “Shelter” raised some uncomfortable questions among its viewership and serves to highlight just how much the American people did not wish to actually think about the dangers of the bomb.

MUSIC AND THE ATOM BOMB

While television and movies provided the American public with visual representations of the atomic bomb, the music industry further defined the atomic culture in the United States through a seemingly endless list of atom bomb themed music. Popular songs were being steadily created in the early to mid-1950s as the music industry began to explore genres that would define the post-war world and cater to the emerging atomic culture of the late 1940s and 1950s. One song by The Five Stars, written, in 1957 perfectly framed the atomic age with a lyrical tone associating atomic and nuclear technology with everyday conversation.

Got a doll, baby, I love her so
Nothing else like her anywhere you go
Man, she's anything but calm
A regular pint sized atom bomb

Refrain: Atom bomb baby, little atom bomb
I want her in my wigwam
She's just the way I want her to be
A million times hotter than TNT

Atom bomb baby loaded with power
Radioactive as a TV tower
A nuclear fission in her soul
Loves with electronic control⁶³

⁶² *The Twilight Zone, season 3, episode 3, “The Shelter,”* directed by Lamont Johnson, aired September 29, 1961, on CBS.

⁶³ The Five Stars, “Atom Bomb Baby,” recorded in 1957.

By comparing his woman's nature to an atom bomb, the song writer is able to create a catchy tune that simultaneously appeals to an American society who could not get enough exposure to the new technology. Another musical number performed by Little Caesar and the Red Callender Sextette entitled, "Atomic Love," uses the awesome power of an atomic detonation to describe the feelings and emotions associated with love.

Booom!
Something exploded down inside
And rushed tears up in my eyes
Oh yes, I have that funny feeling
I guess it's my atomic love for you
Crash!
Something shattered in my mind
And sent cold chills right down my spine
Oh yes, I have that funny feeling
I guess it's my atomic love for you

I can't realize,
But I will apologize
For all that I've done wrong
There's no need of pretending
Our love will have no ending
I'll dream 'til every day is done⁶⁴

While the lyrics from the songs above and the many others that played over radios and televisions across post-war America did not necessarily shape the American understanding of atomic weapons by themselves, they nevertheless served to further saturate American society with a feel good celebration of atomic technology.

As was noted at the beginning of the chapter, the atomic bomb infiltrated nearly every aspect of American society in the first decade after the bombing of Hiroshima and Nagasaki. Alongside the bomb's presence in the entertainment industry, it could also be

⁶⁴ Little Caesar and the Red Callender Sextette, "Atomic Love," recorded in 1953.

readily found in the beverage industry. The creation of the atomic bomb sparked a nationwide obsession with the technology, fueled somewhat by fear, but more so by hope for the future. Restaurants and bars accordingly took advantage of this atomic fascination by creating a series of drinks centered around the new and dangerous technology.

“Although it was a short-lived fad, the Atomic Cocktail was used to elevate the spirits of Americans who were buoyed by postwar optimism, but still made edgy by the dark cloud of East-West conflict. With time, the prospects for peace improved and the good time rolled”⁶⁵ as drinks such as the “Rocket Man” and “Apricot Fission”, which, while offering little that was new in the way of taste, contained fun descriptions and provided people with an outlet for their atomic fix. The most famous drink from the atomic age, the atomic cocktail itself, even spawned a famous blue’s song which celebrated the drink’s ability to stimulate its owner’s taste buds.

It's the drink that you don't pour
Now when you take one sip you won't need anymore
You're small as a beetle or big as a whale-BOOM-Atomic Cocktail.

Splashes ice all around the place
When you see it coming, grab your suitcase
It'll send you through the sky like airmail-BOOM-Atomic Cocktail.

You push a button, turn a dial
Your work is done for miles and miles
When it hits-it's bound to shake 'cause it feels just like an earthquake.

That's the drink that you don't pour
When you take one sip you won't need anymore
You're small as a beetle or big as a whale-BOOM-Atomic Cocktail.⁶⁶

⁶⁵ Karen Brooks, Gideon Bosker and Reed Darmon, *Atomic Cocktails: Mixed Drinks for Modern Times* (Vancouver: Raincoast Books, 1998), 8-9.

⁶⁶ Slim Gaillard Quartette, “Atomic Cocktail,” recorded in 1946.

The emergence and spread of atomic cocktails in the 1950's serve as proof of two things. First, it demonstrates that the American beverage and advertising industry recognized the American fascination with atomic and nuclear weapons in the first decade after the Second World War and secondly, willingly took advantage of this newly realized atomic fixation as a way to profit. The existence of atomic cocktails also serves as proof of just how well integrated the atomic bomb had become in American society in the mid-1950's.

The preceding paragraphs serve to highlight just how pervasive and far-reaching the atomic culture was in the United States. Viewing the atomic age as a Cold War phenomena is misleading because it also leads one to assume that the atomic age in American society emerged gradually over the course of a Cold War that lasted nearly half a century. In reality, while the atomic culture of the United States was constantly evolving throughout the Cold War, it's genesis and fundamental form emerged in the late 1940's and 1950's and only picked up speed and grew in size as the American public's love of atomic technology continued to grow. Our current understanding of the atomic age in American society centers around the way in which it shaped and molded U.S. culture: what is too often ignored is just how detrimental and counter-productive that culture was to the development of a well-informed understanding of the bomb and the technology associated with it.

For decades, the atomic bomb penetrated every facet of the average American's life. From the newspapers and comic strips one read during breakfast, to the drinks one shared with clients after work, to the toys and games young children played with. This brief analysis of the atomic age in American culture serves as clear and convincing evidence with respect to how and why the American people formed such a flawed atomic

reality in the immediate aftermath of the Second World War. The atom bomb had become so ingrained in the psyche of the United States that people simply stopped consciously thinking about it. Whether it was seeing the actual technology's awesome power from the Las Vegas strip or seeing it simulated in the ever growing number of movies and television shows, the atom bomb had been transformed from America's best kept secret to its most profitable commodity.

V. THE U.S. GOVERNMENT AND THE ATOMIC BOMB

While the previous chapters have shown how integrated the atom bomb was in American culture throughout the first decade of the Cold War, merely documenting the differing ways in which it impacted American society does not sufficiently explain how and why the American public formed such a flawed understanding of it. While it is indeed true that newspapers and magazines, movies, and television shows served to collectively numb the U.S. public to the greater complexities of the atom bomb, to understand why the public felt comfortable making such assumptions, we must look to the U.S. government and its extensive propaganda campaign of the late 1940's and 1950's.

In the years following the bombing of Hiroshima and Nagasaki, the U.S. government found itself in a unique situation. It had just successfully created and detonated the world's first atomic bomb and was now faced with the difficult task of selling the most destructive device in human history to the American public as a force for good. While such a task may seem daunting to us today, it is important to understand that in stark contrast to the 21st century, post-war American society had a great deal of trust in its government. While President Harry Truman's approval rating dwindled by the end of his second term, his successor Dwight Eisenhower enjoyed some of the highest presidential approval ratings of the 20th century, with an average of 65% of the American

population rallying behind Eisenhower in the early to mid-1950s.⁶⁷ In addition to the high approval ratings, by the mid 1950's, the United States had established itself as the supreme industrial superpower. The American public did indeed have a great deal of trust in its government and it was this misplaced confidence that enabled the American government to carefully shape the American public's perception of the bomb.

It is no secret that during the immediate post-war years the American government had a vested interest in how the American public felt about atomic technology. Not only did the atom bomb contribute to ending the war in the Pacific, it put to rest any doubt that the United States was the unrivaled military power in the world. Before the last fires were put out in the cities of Hiroshima and Nagasaki, the American public had already begun formulating opinions on the atomic bomb, most of which were positive. In the first months and years after the bombing, the U.S. government saw a tremendous opportunity to control the narrative of this new, complex technology. This narrative came in many forms, whether it was the U.S. shelter and duck and cover programs, which knowingly mislead the public about the dangers posed by atomic weapons, or the atoms for peace initiatives, aimed at promoting the potential benefits of the atom bomb. It is abundantly clear that in the first decade of the Cold War, the American government designed and implemented an extremely effective propaganda campaign aimed at creating a flawed understanding of atomic weapons on behalf of the American public.

It may make sense to postulate that the American government should have cared little about how the public felt about the atomic bomb. It would have been safe to assume

⁶⁷ "Presidential Approval Ratings: Gallup Historical Statistics and Trends," *Gallup*, accessed, April 3, 2015, <http://www.gallup.com/poll/116677/Presidential-Approval-Ratings-Gallup-Historical-Statistics-Trends.aspx>.

that it was viewed in somewhat of a positive light, even if such a view carried with it a degree of fear and uncertainty. In the eyes of most Americans, the atom bomb represented an unrivaled bargaining chip towards post-war supremacy, a crowning achievement marking the end of war and the rise of America's scientific and technological prowess globally. Yet, a close look into key declassified government documents from 1947 reveals just how closely the American government tracked and controlled how its wider population felt about the atom bomb.

Less than two years after the bombing of Hiroshima and Nagasaki, the U.S. government commissioned a study by Richard S. Crutchfield of Swarthmore College concerning the public attitudes about the atomic bomb. The report stresses "the critical importance of more adequate knowledge of the thinking of the American public on matters relating to the development of the atomic bomb" and as a result of this need to understand, "the Social Science Research Council proposed early in 1946 that a study of public opinion and attitudes in these areas be undertaken."⁶⁸ The report aimed at resolving several questions in regards to public opinion. First, it sought to determine the significance of the Bikini island naval test on the formation of opinions among those who were surveyed. To accomplish this, the questionnaire was given to 3090 individuals before and 2894 individuals after the Bikini test, in hopes that a stark difference of opinion might emerge with the appropriate size for the post-war U.S. navy. A second goal of the survey was to explore just how informed the average American was about issues such as the atomic bomb and international relations. Finally, the survey sought to

⁶⁸ ⁶⁸ Richard Crutchfield, "Public Attitudes on the Atomic Bomb," June 10, 1947, Decimal File 334.0 Foreign Policy Information Subcommittee, *Microfilm Publication M1195: Documents of the State-War-Navy Coordinating Committee* (Washington, D.C.: National Archives and Records Administration, 1982), Reel 9.

reveal how safe the American public felt in regards to atomic attack, and more specifically, if civil defense measures could and would be effective at keeping America safe.⁶⁹

While not all of the findings in Crutchfield's 1946-47 report improve our understanding of the development of public opinion on the atomic reality in America, several key sections reveal how misinformed the American people were in the immediate aftermath of the Second World War and how the U.S. government was advised to use such a lack of understanding to its advantage. The Bikini Island test serves as a perfect baseline in understanding how the American public understood atomic weapons at the dawn of the atomic age. Operation Crossroads, as it was known to those involved in the 1946 test, was designed to test and analyze the impact that an atomic detonation would have on warships at sea. The test consisted of two bombs that were detonated underwater and surrounded by warships of varying sizes and at varying distances away from the blast center. Crutchfield's study was intended to ascertain how much the population knew about the Bikini island test both before and after it was conducted. The 1946 study revealed that while a majority of Americans were aware of the Bikini island tests, "a majority expressed their feeling that the Bikini test did less damage than they had expected it to do."⁷⁰ While Crutchfield's report addresses a variety of questions ranging from the bomb's construction, to its international control and prevention it emphasizes that "the most prominent effect of the Bikini test seems to be that concerned with the fact that the majority of people expected the test to do more damage than they think it did."⁷¹

⁶⁹ "Public Attitudes on the Atomic Bomb," (Forward).

⁷⁰ "Public Attitudes on the Atomic Bomb," 3.

⁷¹ "Public Attitudes on the Atomic Bomb," 12.

Such findings by the Crutchfield study are telling in that they reveal that the American public lacked an appreciation and understanding of the true power of atomic technology. While a majority of respondents felt that the atom bomb would someday represent a threat to the United States, and even went further by advocating that the technology be strictly controlled by the U.S., the study also revealed that the American people were of the opinion that the bomb that was far from apocalyptic and instead were both positive and hopeful. These positive associations can be seen in the section of the report dealing with civil defense. When respondents were asked if they “believe that the U.S. will be able to develop a defense against the atomic bomb,” the majority of those polled believed that the U.S. government would be able to develop an adequate civil defense program that would keep Americans safe in the event of a nuclear war.⁷² It should really come as no surprise that Americans believed their government could protect them against atomic weapons. While it was widely known that the atomic bomb was the pinnacle of modernized warfare, it does not seem unreasonable that the nation who split the atom, could develop a form of protection against its awesome power.

CIVIL DEFENSE AND THE SHELTER MOVEMENT

While there are seemingly countless primary documents available that highlight the inherent flaws of the U.S. civil defense movement of the late 1940's and early 1950's, the most well-known and appropriate example was the 1951 Anthony Rizzo directed film “Duck and Cover” starring Bert the turtle. Intended to be used as an educational tool directed at America's youth, the video depicted Bert the turtle being followed around by

⁷² “Public Attitudes on the Atomic bomb,” 3.

a stick of dynamite on a string, symbolic of the constant threat of atomic destruction at any time.⁷³ Ducking and covering became a cultural symbol of the 1950's, and has served as the bedrock for much of the academic work on the atomic age in American culture. While Bert the turtle hiding in his shell appealed to America's younger generation, the movie as a whole served to communicate the message that there existed real and concrete steps one could take to survive an atomic detonation. A scene depicting a family enjoying an afternoon picnic at the time of a nuclear attack show a mother and her children hiding under the picnic blanket, and the father shielding himself with a newspaper.⁷⁴ This civil defense strategy widely known as "ducking and covering" was commonly known across the United States as Bert the turtle's story was regularly told to classrooms all across American.

The flaws in such strategies strike one as comedic in retrospect. Indeed, it should be noted here that the majority of America did not believe that ducking and covering would actually save their lives in the event of a nuclear attack, yet Bert the turtle played a vital role in influencing American thought about the bomb in the early 1950's. While America knew that hiding under a cotton blanket would not save one's life from an atom bomb, it served to further convince the American public that civil defense was practical. Civil defense drills became regular practices in elementary schools across the United States, on par with modern day fire or tornado drills, and as Kenneth Rose observes, in the first decade after the Second World War, "a period of optimism prevailed that nuclear weapons had not greatly changed the basics of protecting the civilian population."⁷⁵

⁷³ *Duck and Cover*, Directed by Anthony Rizzo (Archer Productions, 1951).

⁷⁴ *Duck and Cover*.

⁷⁵ Kenneth Rose, *One Nation Underground: the Fallout Shelter in American Culture* (New York: New York University Press, 2001), 23.

Consequently, as millions of American families pondered whether or not to construct a bomb shelter, the U.S. government began to take steps to further obscure the dangers of the atomic bomb, by emphasizing the hope that shelters provided.

While civil defense programs and shelter construction served to mislead the American public in regards to their relative safety in the event of a nuclear attack, the way in which the U.S. government contributed to the domestication of bomb shelter construction, and in some circumstances, assigned specific gender roles to aspects of its civil defense philosophy, contributed greatly to America's flawed understanding of atomic weapons. In the early 1950's "men and women conformed to traditional gender roles despite the growing pressures of consumerism, technology (especially applied to food and household products as well as to reproduction), and women's emancipation."⁷⁶ At the core of late 1940's and early 1950's American society was the family and its home, "the family seemed to be the one place where people could control their destinies and perhaps even shape the future."⁷⁷

The centrality of the American home in the 1950's, and the role of women as caretakers and homebodies is vital to understanding how the atomic bomb's message was shaped by the U.S. government. The early civil defense campaign "was designed to inform the general public about the perils of atomic attack and about the ways and means to counter its effects. In consequence, homes and families became involved in atomic planning, catapulting women (as wives and mothers as well as household managers) to the forefront of civil defense."⁷⁸ As a result of this domestication of the U.S. shelter

⁷⁶ Susan Northcutt, "Women and the Bomb: Domestication of the Atomic Bomb in the United States," *International Social Science Review* 74, no. 3 (January 1999), 3.

⁷⁷ "Women and the Bomb," 3.

⁷⁸ "Women and the Bomb," 5.

program, the American public bought into civil defense as a realistic defense to the atomic bomb, when in reality, it served largely to provide comfort and acceptance to a nation facing the constant threat of a nuclear attack.

The U.S. shelter program designed and implemented by the civil defense authorities lacked funding and never achieved the lofty goals set by its practitioners. The post-war U.S. civil defense program never truly got off the ground as a full-fledged government-run shelter program, but it did serve as a beacon of hope and optimism to the American public during the atomic age. There were many reasons for its shortfall yet perhaps the most significant reason for its failure was that it simply could not keep pace with modern technology. Laura McEnaney explains in her book *Civil Defense Begins at Home* that “policymakers and citizens found it difficult to assimilate the new scientific realities of the era.”⁷⁹ Margot Henriksen took it a step further by specifically pointing to the Russian development of Intercontinental Ballistic Missiles as blowing into “limbo not only our present concept of civil defense, but the whole civil-defense idea.”⁸⁰ While it is now widely known that most civil defense measures would never and could never have worked as they were designed and communicated to the American public in the late 1940’s and early 1950’s, what is often overlooked by historians, is just how deceitful the U.S. government was while communicating its civil defense advisements and how such a program succeeded more as a tool of propaganda than it did as a practical defense measure.

⁷⁹ Laura McEnaney, *Civil Defense Begins at Home: Militarization Meets Everyday Life in the Fifties* (Princeton: Princeton University Press, 2000), 153.

⁸⁰ Margot A. Henriksen, *Dr. Strangelove’s America: Society and Culture in the Atomic Age* (Los Angeles: University of California Press, 1997), 105.

Indeed, watching programs like *Duck and Cover* and reading pamphlets discussing how to best tend your yard to avoid atomic destruction serve as obvious examples of a U.S. government only concerned with propagating a bright atomic narrative, yet using those as examples serves only as conjecture and leaves plausible doubt. Indeed, it was in the best interest of the U.S. government to keep its citizenry holding on to some semblance of hope in the face of a nuclear attack. The alternative would be a public driven either by mass aggression demanding the annihilation of its primary threat, the Soviet Union, or a passive response that more or less accepted its fate, thus surrendering to the Soviets. There is little debate that the U.S. government actively kept some of the true horrors of the atomic bomb from its wider public, yet what is open to interpretation is whether that deceit was propagated to shape the American understanding of the atom bomb, or simply a strategy to quell public anxiety about a technology that was indefensible.

Regardless of where one comes down in this debate, a close look at how the U.S. government approached issues such as radioactive fallout and a populace woefully misinformed of all of the dangers associated with atomic weapons reveals a pattern of decision making consistent with deceit. This deceit can be further supported by a statement made in the 1947 Crutchfield report, which concluded that: “Because many people do not understand the issues well enough to know why they approve or do not feel sure enough to take a categorical stand, it might be reasonably assumed that these people could be influenced with relative ease.”⁸¹ While such a statement does not definitively

⁸¹ “Public Attitudes on the Atomic Bomb.”

prove the U.S. government actively lied to its misinformed public, it does reveal that such a strategy was explored and as we will see in the proceeding pages, utilized.

RADIATION AND THE BRIGHT ATOMIC FUTURE NARRATIVE

While the U.S. government heavily influenced the way in which the American public viewed civil defense in the atomic age, it also misled the public about the dangers associated with radiation. While the atom bombs dropped on Hiroshima and Nagasaki brought widespread destruction, the truly nightmarish feature of the atom bomb was the dispersion of airborne radiation. This invisible killer resulted in the deaths of thousands of Japanese civilians in the days and weeks following the bombing and by the late 1940's and early 1950's, the U.S. government took strategic steps to quell any potential civilian upheaval. Perhaps the most well-known example of this was the widespread concern about strontium 90 in the U.S. milk supply. Largely ignored by the U.S. government, strontium 90, a radioactive isotope produced by atomic testing, had been found in the U.S. milk supply in the 1950s and early 60's. While the levels of strontium 90 found in the milk supply did not result in the immediate deaths of consumers, the U.S. government's silence on the matter strikes one as alarming. While one may simply write off this silence as a government strategy aimed at protecting national security interests, the U.S. government employed an entirely different strategy when the effects of fallout threatened private industry.

Even as the American public was largely kept in the dark about the U.S. atomic testing practices and the potential radiological effects the tests posed, the Kodak film industry was given advanced notice of the U.S. nuclear tests in the southwest because of

their effects on its film development. As Andrew Goliszek notes in his book *In the Name of Science*, “were it not for irate customers taking their Kodak film back to stores and developing labs because it was fogged, no one would ever have known that a nuclear test in New Mexico had caused the spread of radiation to a small town in Indiana.”⁸² As Tim Barribeau notes, as early as 1946, the Kodak film industry discovered that “its packing materials were contaminated with the radioactive isotope iodine-131,” a result of the atmospheric atomic testing by the United States in the recent past.⁸³ Kodak had linked this isotope to poor image development and as a result, “without publicly acknowledging that individuals had been exposed [the U.S. government] secretly assured the company that warnings would be issued in advance to any upcoming tests.”⁸⁴ The U.S. government offered dates, times, maps, and other information regarding future atomic testing in hopes of staving off any potential damage to the film industry.

While it may come as no surprise that the U.S. government provided a private industry with classified information in order to maintain its viability, what is troubling was that same government’s unwillingness to extend the same courtesy to the general public. Throughout the 1950s and 60s there was a growing fear that strontium 90, had found its way in the American milk supply. In 1958 the Committee on Nuclear Information (CNI) conducted a study exploring the link between atomic testing and the

⁸² Andrew Goliszek, *In the Name of Science: a History of Secret Programs, Medical Research, and Human Experimentation* (New York: St. Martins Press, 2003), 128.

⁸³ Tim Barribeau, “Not-so-secret Atomic Tests: Why the Photographic Film Industry knew what the American Public didn’t,” *Imaging Resource*, accessed March 12, 2015, <http://www.imaging-resource.com/news/2013/02/26/not-so-secret-atomic-bomb-tests-why-the-photographic-film-industry-knew>.

⁸⁴ *In the Name of Science*, 128.

amount of strontium 90 found in the baby teeth of young children.⁸⁵ The study raised awareness about the potential dangers of strontium 90, made clear the link between atomic testing and fallout figures in America's dairy belt, and sparked outrage among an American public that demanded answers. Answers eventually did come, albeit thirty years later when the Clinton administration explored nuclear testing and American radiological experiments conducted during the Cold War. This obvious discrepancy between the government's willingness to provide film manufacturers with advanced warning of atomic testing and its apprehension about addressing the rise of strontium 90 in the U.S. milk supply were raised in a 1998 senate subcommittee meeting by Iowa Senator Tom Harkin who stated:

In fact, the Government warned the entire photographic industry and provided maps and forecasts of potential containment. Where, I ask, were the maps for dairy farmers? Where were the warnings to parents of children in these areas? So here we are, Mr. Chairman. The Government protected rolls of film, but not the lives of our kids.⁸⁶

Senator Harkins pointed remarks about the U.S. government in the recent past speaks to the startling contradictory practices of the U.S. government in the 1950's. Clinton himself echoed a similar sentiment when it was revealed that "thousands of human radiation studies had been conducted during the Cold War."⁸⁷ Such evidence is revealing in that it shows that while concerns raised by a private industry solicited an

⁸⁵ Kendra Smith-Howard, *Pure and Modern Milk: an Environmental History Since 1900* (Oxford: Oxford University Press, 2014), 131.

⁸⁶ Senate Appropriations Sub-Committee, "Radioactive Fallout from Nuclear Testing at Nevada Test Site," October 1, 1997, accessed March 24, 2015, <http://www.gpo.gov/fdsys/pkg/CHRG-105shrg44045/html/CHRG-105shrg44045.htm>.

⁸⁷ Eileen Welsome, *The Plutonium Files: America's Secret Medical Experiments in the Cold War* (New York: Dial Press, 1999), 6.

immediate response by the U.S. government, legitimate fears raised by its citizens did not, further highlighting just how flawed the American governments handling of radiation exposure was.

While the Kodak case speaks to a government unwilling to divulge information about radiation to its public, in some cases the U.S. government outright lied about the dangers it posed. In a 1947 report written about the observations and conclusions of Operation Crossroads, W.A. Shureliff, the historian of Joint Task Force One, purposely misrepresented the dangers of radiological exposure on animals that had been kept in the hulls of the ships during the Bikini testing. Shureliff wrote that although the majority of animals aboard the ships died from exposure to radiation, readers should note “that radiation sickness is essentially painless.”⁸⁸ Such a blatant misrepresentation of the dangers of radiation is alarming in that it shows the government’s willingness to not only downplay the destructive capacity of atomic weapons, but in some cases intentionally lie about it. While the average American most likely would never have read Shureliff’s report, the document remains vital to understanding the motivations of the U.S. government when it came to shaping the American atomic reality.

The U.S. government’s insistence on downplaying the threats posed by atomic weapons, and its own ability to protect its citizens from its awesome power speak volumes of how the American public formed such a flawed understanding of the technology. While much of the government’s message about the atomic bomb had been intentional and rooted in civil defense and testing, programs such as Atoms for Peace

⁸⁸ W. A. Shurcliff, *Bombs at Bikini: the Official Report of Operation Crossroads* (New York: W. H. Wise, 1947), 167.

serve as examples of ways in which the U.S. government began associating the atom bomb with a more humanitarian and hopeful message. Atoms for Peace, first introduced to the American public by Dwight Eisenhower in December of 1953, sought to change the language associated with the atomic bomb. Project Plowshare, one of the many programs to emerge out of Eisenhower's Atom's for Peace initiative, sought to put atomic weapons to civilian use. "Those who were part of or supportive of the program contented that 'peaceful nuclear explosions' or PNEs, could excavate harbors and canals, stimulate the production of gas and oil, provide storage facilities for water or fuel, help gain access to deeply buried ores, [and] create heat that could be captured for power production."⁸⁹ Indeed, the goals espoused in Eisenhower's Atoms for Peace initiative were revolutionary and in many ways comparable to the lofty goals of President Wilson's Highway project decades earlier.

While today we still bear witness to some of the positives features of Project Plowshare and the wider Atoms for Peace initiative, such as the widespread use of nuclear power, many of its other goals detailed above were never fully realized. Indeed, the Plowshare program was not created as a propaganda tool but was instead the product of a scientific community who "saw in themselves the personification of progress and modernity."⁹⁰ Atoms for Peace and Project Plowshare serve not as evidence of a U.S. government purposely misleading its public about the peaceful uses of the atomic bomb, but is instead proof of a government getting caught up in the very narrative it helped create.

⁸⁹ Scott Kaufman, *Project Plowshare: the Peaceful Use of Nuclear Explosives in Cold War America* (Ithaca: Cornell University Press, 2013), 2.

⁹⁰ *Project Plowshare*, 3.

The evidence put forth in the preceding pages is proof of two things. First, the U.S. government had a vested interest in how the general population viewed the atomic bomb. Whether it was the public's understanding of its safety relative to the bomb's destructive capacity, or the dangers posed by radioactive fallout from atomic testing, the Crutchfield and Shureliff reports, coupled with the Kodak film industry case study, reveal that the U.S. government had a vested interest in controlling the public's knowledge of atomic weapons and, in some cases, took concrete steps to misinform its populous of the dangers this technology posed. Secondly, much like what was seen in chapter one, the U.S. government created a narrative about the bomb that was oftentimes out of touch with reality and while print media and popular magazines might reach a broader audience, the U.S. government's aura of legitimacy and respect at the time was unrivaled.

Since the very origin of governance, societal leaders throughout the world have had to deal with determining whether a full and honest presentation of 'the facts' would have a more detrimental effect on those they govern than would the presentation of a less than complete representation of reality. The goal of which would be to maintain peace and stability amongst the populace even though that well-being and sense of security may be nothing more than a façade. In the case of the atomic bomb and the U.S. government, there is an argument to be made that a conscious decision was made to focus attention on the conceivably bright future associated with nuclear fission and avoid the fear, distrust, and potential for chaos that a full and honest accounting of the weapon might generate. With full knowledge of the destructive potential of the atomic bomb and hydrogen bomb, it is at least conceivable that the American public would have realized that their government was incapable of achieving that fundamental responsibility of government, ensuring the

safety and well-being of those they govern. Indeed, during the early years of the Cold War, the government apparatus that had created the atomic bomb, still carefully controlled the message behind it.

VI. CONCLUSION

To study the development and deployment of the atomic bomb and the emergence of America's atomic reality in the two decades following the Second World War "is to discover a complex set of stages in America's accommodation to the atomic bomb, beginning with incomprehension and ending with something beyond dispassion, something closer to acceptance."⁹¹ American society's acceptance, however, was not the direct result of knowledge or a well-founded understanding of the new technology, but instead, was rooted in the widespread integration of everything 'atomic' in American culture in the first decade and half of the Cold War. The world had known about the atomic bomb for only a few years before Americans flocked to the Las Vegas strip to witness the mushroom cloud the shadow of which would eventually enfold American culture in the late 1940s and 50s. While the atomic bomb left physical scars on the scorched earth of Hiroshima and Nagasaki, the legacy it left behind in the United States came in the form of a cultural revolution consisting of hundreds of movies, television shows, music, children's toys and books and government programs, often celebrating a technology they simply did not fully understand.

The constraints on a research endeavor that covers not only such a wide expanse of time, but also a seemingly endless ocean of source material are obvious. It would be premature to definitively assert that America's atomic reality was formed and reached its

⁹¹ Scott C. Zemen, "To See... Things Dangerous to Come to: *Life Magazine* and the Atomic Age in the United States," in *The Nuclear Age in Popular Media: a Transnational History, 1945-1965*, ed. Dick Van Lente (New York: Palgrave Macmillan, 2013), 55.

maturity in the ten to fifteen years of the Cold War based strictly on this work, let alone a three volume monograph. The stories explored in the preceding pages, however, should refocus how historians should look at the continuing evolution of the atomic bomb in American society. While it would be a mistake to ignore the thoughts and attitudes of American society towards the atomic bomb in the years after the scope of this research project, it would also be mistake to view the 1960s, 70s, and 80s as being anything but an outgrowth of the active early years of the U.S. nuclear program, where the origin of the American atomic reality can be traced.

In many ways America's flawed atomic reality, born in the early Cold War years, lingers on today as arms reduction proposals are lost in a sea of government bureaucracy and partisan divides. It is appropriate now, more than ever, to question how American society arrived at its atomic reality as United States' nuclear stockpiles remain sealed in outdated underground tombs that harken back to a time when a simple mistake could have changed the world forever.

America's understanding of the atomic bomb and nuclear technology is flawed, in large part, because there never was an opportunity for it to develop in an atmosphere that included an abundance of comprehensive, unbiased information. The atomic bomb, and the promise of a bright and limitless future because of it, infiltrated every aspect of American society in the years after the Second World War: the dangers that should have defined the technology quickly became an afterthought.

The results of this thesis project are not intended to purport that the American public has no fear of the atom bomb. Indeed, the fear of nuclear annihilation was what fueled the civil defense movement as films like Stanley Kramer's "On the Beach"

imagined a world wrought by nuclear destruction. Yet today we live in a nuclear world that is far different from 1940s and 50s.

Perhaps the most significant nuclear threat facing America today is not one posed by a global rival but could instead be manifested in the form of an atomic accident, similar to the events in Goldsboro North Carolina. The era of mutually assured destruction is over and has been replaced by a world that is arguably more dangerous in that it would force us to live through the horrors of a nuclear detonation, and the long-term effects associated with it. The nuclear age in which we live in today requires a well-rounded and thorough understanding of the atomic bomb, and this research project is an important first step in tracing the origin of the American atomic reality.

VII. Bibliography

- Appleton, Victor II. *Tom Swift and his Atomic Earth Blaster*. New York: Grosset & Dunlap Inc., 1954.
- Atom Bomb Baby*. By the Five Stars. Recorded in 1957.
- Atomic Cocktail*. By Slim Gaillard Quartette. Recorded in 1946.
- The Atomic Kid*. Directed by Leslie H. Martinson. Republic Pictures, 1954.
- Atomic Love*. By Little Caesar and the Red Callender Sextette. Recorded in 1953.
- Brown, Kate. *Plutopia: Nuclear Families, Atomic Cities, and the Great Soviet and American Plutonium Disasters*. Oxford, Oxford University Press, 2013.
- Boyer, Paul. *By the Bomb's Early Light: America Thought and Culture at the Dawn of the Atomic Age*. Chapel Hill, NC: University of North Carolina Press, 1994.
- Cass, Stephen. "Mushroom Cloud Memories: Las Vegas's National Atomic Testing Museum is a Shrine to Cold War Ingenuity." *IEEE Spectrum* 52, no. 4 (April 2014): 29-32.
- Driggs-Brown, Barbara. *Strategic Public Relations: An Audience Centered Approach*. Boston, MA: Wadsworth Publishing, 2012.
- Duck and Cover*. Directed by Anthony Rizzo. Archer Productions, 1951.
- Erisman, Fred. "Tom Swift and his American Adventure." *The Social Science Journal* 20, no.4 (1983): 13-24.
- Field, Douglas. *American Cold War Culture*. Edinburgh: Edinburgh University Press, 2005.
- Gallup. "Presidential Approval Ratings: Gallup Historical Statistics and Trends." *Gallup*. Accessed April 3, 2015. <http://www.gallup.com/poll/116677/Presidential-Approval-Ratings-Gallup-Historical-Statistics-Trends.aspx>.

- Gizmodo. "12 Nuclear Toys from the Dawn of the Atomic Age." Gizmodo Blog. Last modified October 15, 2011. Accessed March 1, 2015. <http://www.gizmodo.com.au/2011/10/12-nuclear-toys-from-the-dawn-of-the-atomic-age/>.
- Goliszek, Andrew. *In the Name of Science: a History of Secret Programs, Medical Research, and Human Experimentation*. New York: St. Martins Press, 2003.
- The Guardian. "Goldsboro Revisited." September 20, 2013. Accessed January 15, 2015. <http://www.theguardian.com/world/interactive/2013/sep/20/goldsboro-revisited-declassified-document>.
- Henriksen, Margot A. *Dr. Strangelove's America: Society and Culture in the Atomic Age*. Berkeley, CA: University of California Press, 1997.
- Howe, E. Hartley. "Peaceful use for H-Bomb Seen." *Popular Science*, December, 1952. Accessed February 10, 2015. <http://www.popsci.com/archive-viewer?id=mSEDAAAAMB AJ&pg=246&query=Peaceful%20Use%20for%20H%20bomb%20seen>.
- Imaging Resource. "Not-so-Secret Atomic Tests: Why the Photographic Film Industry knew what the American Public didn't." Tim Barribeau. Accessed March 12, 2015. <http://www.imaging-resource.com/news/2013/02/26/not-so-secret-atomic-bomb-tests-why-the-photographic-film-industry-knew>.
- The Incredible Shrinking Man*. Directed by Jack Arnold. Universal International Pictures, 1957.
- Jacobs, Robert. *Filling the Hole in our Nuclear Future: Art and Popular Culture Respond to the Bomb*. New York: Rowman and Littlefield Publishers, 2010.
- Kaufman, Scott. *Project Plowshare: the Peaceful use of Nuclear Explosives in Cold War America*. Ithaca, NY: Cornell University Press, 2013.
- Laurence, William L. "The Great Promise of the Atomic Age." *New York Times*, October 27, 1957.
- Lichtman, Sarah A. "Do-It-Yourself Security: Safety, Gender, and the Home Fallout Shelter in Cold War America." *Journal of Design History* 19, no. 1 (April 2006): 39-55.
- McEnaney, Laura. *Civil Defense Begins at Home: Militarization Meets Everyday Life in the Fifties*. Princeton, NJ: Princeton University Press, 2000.
- Misa, Thomas. *Leonardo to the Internet: Technology and Culture from the Renaissance to the Present*, Baltimore, MD: Johns Hopkins University Press, 2011.

- Mydans, Carl. "Image of Hiroshima." *Life Magazine*, October 10, 1949. Accessed February 1, 2015. <http://images.google.com/hos ted/life/2b4f5439805b55ec.html>.
- New York Times. "More Atom Power for Peace Urged." July 20, 1956.
- Northcutt, Susan. "Women and the Bomb: Domestication of the Atomic Bomb in the United States." *International Social Science Review* 74, no. 3 (1999): 129-141.
- Oak Ridge Associated Universities. "Lone Ranger Atom Bomb Ring and Spint hariscope." Last modified March 10, 2011. Accessed March 1, 2015. <http://orau.org/ptp/collection/spint hariscopes/ring.htm>.
- Popular Science. "The History of Popular Science." July 23, 2002. Accessed February 9, 2015. <http://www.popsci. com/scitech/article/2002-07/history-popular-science>.
- Rhodes, Richard. *The Making of the Atomic Bomb*. New York, Simon and Shuster, 1988.
- Rose, Kenneth. *One Nation Underground: The Fallout Shelter in American Culture*. New York: New York University Press, 2001.
- Ryfle, Steve. "Godzilla's Footprint." *Virginia Quarterly Review* 81, no.1 (Winter 2005): 44-63.
- Senate Appropriations Sub-Committee. Radioactive Fallout from Nuclear Testing at Nevada Test Site. October 1, 1997. Accessed March 24, 2015. <http://www.gpo.gov/fdsys/pkg/CHRG-105shrg4 4045/html/CHRG-105shrg44045.htm>.
- Shurcliff, W. A. *Bombs at Bikini: the Official Report of Operation Crossroads*. New York: W. H. Wise, 1947.
- Smith-Howard, Kendra. *Pure and Modern Milk: An Environmental History since 1900*. Oxford: Oxford University Press, 2014.
- Split Second*. Directed by Rick Powell. RKO Pictures, 1953.
- TIME Magazine. "Atomic ABC's." August 21, 1950. Accessed January 28, 2015. <http://content. time.com/time/subscriber/article/0,33009,812983-4,00.html>.
- TIME Magazine. "Peaceful Atomic Blasting." March 24, 1958. Accessed January 30, 2015. <http://content.time.com/time/subscriber/article/0,33009,868346,00.html>.
- TIME Magazine. "Taming the Atom." September 8, 1947. Accessed January 30, 2015. <http://con tent.time.com/time/subscriber/article/0,33009,804198,00.html>.

- Torrey, Volta. "So A-Bombs Aren't so Bad?" *Popular Science*, May, 1949. Accessed February 14, 2015. <http://www.popsci.com/archive-viewer?id=ZiQDAAAAMBAJ&pg=2&query=So%20A%20Bombs%20Aren%27t%20so%20bad>.
- The Twilight Zone*. Season 3, episode 3, "The Shelter." Directed by Lamont Johnson. Aired September 29, 1961 on CBS.
- Vintagescope. "Atom Bomber." Vintagescope Blog. Last modified November 7, 2013. Accessed March 1, 2015. <http://blog.vintagescope.com/post/66286846028/rogerwilkerson-atom-bomber>.
- Welsome, Eileen. *Plutonium Files: America's Secret Medical Experiments in the Cold War*. New York: Dial Press, 1999.
- Wondrich, David. "Atomic Cocktail." *Esquire*. November 5, 2007. Accessed February 21, 2015. <http://www.esquire.com/drinks/atomic-cocktail-drink-recipe>.
- U.S. Department of Energy. United States Nuclear Tests: July 1945 through September 1992. Nevada Operations Office, December 2002. Accessed March 25, 2015. http://www.nv.doe.gov/library/publications/historical/DOENV_209_REV15.pdf.
- U.S. State Department. Public Attitudes on the Atomic Bomb. Richard Crutchfield, June 10, 1947. Microfilm Publications M1195, Documents of the State-War-Navy Coordinating Committee, Reel 9, File Number 334. Microfilm publication M1195.
- Zemen, Scott C, *The Nuclear Age in Popular Media: a Transnational History, 1945-1965*. Ed. Dick Van Lente. New York: Palgrave Macmillan, 2011.