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Tales of the Atom!: An Analysis of Nuclear Discourage in Early Marvel Comics

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Thesis Summary

In 1961 the editor of Atlas Comics, Martin Goodman, approached his nephew and staff writer Stan Lee with a pitch. Goodman wanted Lee to create a super hero team to rival DC Comics', *Justice League of America*. Lee came up with the *Fantastic Four* who debuted in November of 1961. The super hero team led by physicist Bruce Banner was the first of many successful titles from Marvel Comics. Much of the popularity of Marvel Comics stemmed from the company's focus on the characters rather than only action like other superhero comics at the time. Lee developed characters that the audience could relate to rather than godlike super humans of DC Comics. The other aspect of Marvel that attracted many readers was the real world setting, specifically the Cold War setting. The characters of Marvel comics dealt with the issues of this unsettled time period just like their readers. Of course one of the biggest issues of the Cold War was nuclear power.

The beginning of Marvel Comics coincided with a particularly turbulent time in US-Soviet relations as both countries raced to build up their nuclear stockpiles. This all came to a head in October of 1962 with the Cuban Missile Crisis. Most historians agree that this thirteen-day period was the closest that the US and the Soviet Union ever came to a nuclear war. It is no surprise that the peak of American nuclear anxiety was also during this unstable period. This analysis focuses on the period from November 1961 to April 1963 in order to determine the extent to which this nuclear anxiety is reflected in Marvel Comics.

The nature of nuclear anxiety among Americans during this period was a multi-faceted issue that varied throughout the Cold War. While the public perception of nuclear energy was a complex issue specific themes of anxiety arise in the period between November 1961 and April

1963. The first is a general uncertainty over the nature of nuclear power and its potential applications in both war and peace. Another theme is unease about who should wield nuclear power and consequently, who it affects. The final motif of nuclear anxiety expressed in Marvel Comics during the period was the moral ambivalence of the American people towards the use of nuclear weapons. This work attempts to analyze the extent to which these themes of nuclear anxiety are represented in Marvel Comic books.

Introduction

In November of 1961, four Americans were launched from earth on a mission to beat the Soviets to space. In the rocket built by the brilliant physicist, Reed Richards and piloted by the former military test pilot, Ben Grimm, the four blasted into space. Shortly into their journey they find that Richard's calculations for the ship's shielding are wrong. The group is hit with powerful cosmic rays that completely alter their atomic structures in extraordinary ways. Ben Grimm is transformed into a rock like monster, Reed Richards is able to stretch his body to unbelievable lengths, Johnny Storm gains the ability to spontaneously burst into flames, and Sue Storm is able to turn invisible at will. The explorers and their fate captured the imaginations of both the young and old throughout the United States over the next weeks, months, and even years. These four Americans were obviously not astronauts but comic book characters, known collectively as The Fantastic Four, created by Stan Lee and Jack Kirby (*Fantastic Four #1*). These four heroes would go on to fight numerous foes from alien invaders to communist dictators, closely followed each month by their enthusiastic readers. The fantastic narrative of humans transformed by cosmic rays into superheroes has engrossed fans for generations. The backdrop of the Space Race provided context to the tale which made the Fantastic Four and their story all the more absorbing. This was only the start for Stan Lee, whose Marvel Comics would go on to produce a whole generation of characters constructed in the context of Cold War America.

The beginning of Marvel Comics, in November of 1961, coincided with a particularly unsettled period in United States history. Only a few weeks prior to the release of the first issue of the *Fantastic Four,* the Soviet Union detonated Tsar Bomba, the most powerful nuclear device ever recorded in history. The next months and years were increasingly turbulent for

United States-Soviet relations. Of particular importance was the issue of nuclear power and the potential for nuclear warfare. This focus on nuclear arms placed a strain on both political leaders and the American public, who had to navigate the reality that this new threat posed to life in the United States. Throughout the 1950s and 60s nuclear anxiety among Americans varied considerably depending on the climate of the Cold War. Spencer Weart in *The Rise of Nuclear Fear,* based on his analysis of newspapers, magazines, films, books, and other media, placed the peak of Cold War nuclear anxiety during the October 1962 Cuban Missile Crisis (Weart, 152). Most historians tend to agree that the Cuban Missile Crisis was the peak of nuclear anxiety as well as the closest that the United States and the Soviet Union ever came to a nuclear war (Gaddis, 81). An analysis of public opinion polls before, during, and after the Cuban Missile Crisis by Tom Smith confirms a rise in thinking about "the atomic bomb or fallout" from the spring of 1962 to November of 1962 (Smith, 268). For this reason, this analysis of nuclear anxiety focuses on Marvel Comics released from November 1961 to April 1963 in order to cover the lead up to the Cuban Missile Crisis as well as the impact after the resolution of the crisis. Since this period is seen as a peak of nuclear anxiety this analysis seeks to explore the extent to which this anxiety is seen in Marvel Comic books.

This analysis utilizes comic books due to a few distinct characteristics that set them apart from other forms of media. Comic books allow readers to be active participants in the development of the characters and storyline. The serial nature of the storylines allows readers to write to the creators between issues to ask questions or express interest in a particular character. This dialog with the readers allowed the creators to adjust their storytelling based on fan feedback about characters and plotlines. The cultural responsiveness of the comic book

makes it an interesting medium to explore nuclear power because it shows the issue from both the writer's and the public's perspective. Comic books, since they are usually produced on a monthly basis, provide a more minute view of a particular period in time that is not offered by other pop culture products such as movies and novels. This is of particular importance for this time period of great social and political change in the United States.

This work focuses on Marvel Comics because their setting in the real world makes the plots more relatable to readers as well as provides a backdrop for cultural analysis of the time period. This setting became what is known as the Marvel Universe, which provided readers with a unique continuity between storylines (Costello, 12). Rather than separate storylines for each comic book, Marvel Comics had extended story arcs that spanned multiple issues. This served as a marketing ploy to maintain readership and also provided a more cohesive narrative of the characters. Additions and omissions to the Marvel Universe provide an interesting comparison to the reality of Cold War America.

Along with the setting, Marvel characters themselves are also more accessible to their readers when compared to other comic companies during the period. Marvel characters, with a few exceptions, are primarily ordinary people attempting to be heroes rather than super humans trying to fit into the real world. Stan Lee said that he wanted to create characters with "faults and foibles" rather than god like heroes with unattainable values and morals (Genter, 954). The members of the Fantastic Four exemplify this more complex approach to comic book characters. The characters throughout the series often have arguments within the group. Ben Grimm, who is transformed into the Thing struggles with his new identity and often rails against the public who view him as a monster (Wright, 205). This more humanistic and complex

portrayal of heroes such as the Thing became popular among more than just young boys. This demographic comprised a core part of Marvel's readership but the problems of the characters also attracted more young adult and adult readers to comic books than ever before (Genter). Marvel heroes were a part of Cold War America and had problems that were shared by their readers in the 1960s and onwards.

Marvel Comic books have been the focus of many scholarly works such as *The Secret Identity Crisis*, by Matthew Costello which examines the entire Cold War period and the development of a national identity. Costello focuses primarily on *Iron Man* and *Captain America* titles in order to show how the Cold War transformed national identity (Costello, 25). In his analysis, Costello touches on issues of nuclear anxiety that this work expands on. Robert Genter in *''With Great Power Comes Great Responsibility'': Cold War Culture and the Birth of Marvel Comics* establishes general themes based on his analysis of early Spider-Man, Hulk, Fantastic Four, and Iron Man comics. This work covers a similar time period as the Genter piece but goes into more detailed analysis of issues relating to nuclear energy. Both Costello's and Genter's analyses provide background on Marvel Comics and offer a launch pad to further research nuclear anxiety from 1961 to 1963. During this period there were a number of titles produced under the Marvel Comics brand. These included comic books like *Fantastic Four* and *Incredible Hulk* which solely focused on superheroes as well as mystery and science fiction titles like *Tales to Astonish* and *Strange Tales.* This analysis evaluates all of these titles but primarily focuses on the superhero genre due its greater focus on the issues surrounding nuclear power.

The nature of nuclear anxiety among Americans during this period was a multi-faceted issue that varied throughout the Cold War. While the public perception of nuclear energy was a

complex issue specific themes of anxiety arise in the period between November 1961 and April 1963. The first is a general uncertainty over the nature of nuclear power and its potential applications in both war and peace. Another theme is unease about who should wield nuclear power and consequently, who it affects. The final motif of nuclear anxiety expressed in Marvel Comics during the period was the moral ambivalence of the American people towards the use of nuclear weapons. This work attempts to analyze the extent to which these themes of nuclear anxiety are represented in Marvel Comic books.

Section I: The Nature of Nuclear Power

The first introduction to nuclear energy and nuclear weapons for the majority of the American public was the bombings of Hiroshima and Nagasaki. For this reason the two became symbols of an immense power that had never been seen before (Szasz, 1). The power of the Atom represented an unknown to society. There was an intense fear of the consequences of a potential nuclear war but also promise for beneficial applications in medicine and energy production (Weart, 88). Comic books during this time period explored the positives and negatives of this new technology, both real and imagined.

There was a widespread interest in the atom during this period without even considering the potential applications. The idea that everything in the physical world was composed of unimaginably small particles called atoms, which were composed of even smaller constituents was itself incredible. In the 1960s the field of quantum mechanics, the branch of physics concerned with the processes of the incredibly small particles like photons and atoms, was relatively young and understood by only the very educated. Understanding the atom meant learning to look at the universe in a distinctly different way, which many in the public struggled with. Comic books, however, provided the general public with a window into the fantastic world of the atom (Szasz, 4). Ant-Man was the most notable Marvel character to arise from this interest in the subatomic world. Ant-Man first appeared on the pages of *Tales to Astonish #27* in January 1962. Scientist Henry Pym develops a serum that alters his atomic composition allowing him to shrink to the size of an ant (*Tales to Astonish #27*). Villains also used the power of the atom, such as the Metal Master in *The Incredible Hulk #6* who could control atoms with his mind. He causes destruction all across the globe by bending oil rigs and

moving bridges, so great that the Soviets and Americans both attempt to thwart him (*Incredible Hulk #6*). While many of the storylines in comic books are far from scientific fact, there are aspects of quantum mechanics that are not completely understood even by physicists. This atomic uncertainty allowed Stan Lee to imagine new technologies and superpowers that created the backbone of the Marvel Universe.

While the atom played a large role in popular culture during this period in the early 1960s, Stan Lee had a tendency to use a heavy hand attributing all sorts of powers to the atom. *Fantastic Four #10* includes a "sub-miniature transistor-powered atomic blast gun", a "nuclear lock mechanism", and an electronic x-ray camera with radioactive film (*Fantastic Four #10)*. Lee knew that giving objects atomic sounding names and imparting them with nuclear energy gave mystical power to readers who did not completely comprehend the complexities of the atom. Readers in some cases were not satisfied with the flashy names and wanted to know more about the technology. In a few issues there are feature pages in which certain pseudo-tech pieces are explained to the readers. There is a page at the end of *Fantastic Four #8* in which the Human Torch explains the "unstable molecules" in his costume (Fantastic Four #8). This was all in good fun but it did little to inform readers about the actual uses of the atom. In *Atomic Comics*, Szasz discusses the ability of cartoonists to simplify complex topics as well as shape readers' views on difficult subjects (Szasz). Marvel Comics' role in popular media allowed its stories to both reflect and in some instances affect public perception on atomic matters.

Soon after the discovery of the huge power source contained within an atom, scientists were hopeful that it would bring about a nuclear energy revolution. The dropping of the atomic bombs in Japan left no doubt that nuclear power was an unprecedented force but there was

skepticism that the atom could be harnessed for peaceful uses. Eisenhower attempted to garner support for nuclear power with his “Atoms for Peace” Speech to the United Nations General Assembly in 1953. This speech began a government campaign to educate Americans and the world about the potential peaceful applications of nuclear energy. In reality the program primarily served as a front to redirect public attention from the United States’ continued nuclear testing and arms proliferation (Medhurst). The campaign inflated the government’s actual investment in peaceful nuclear uses. Ultimately, the Atomic Energy Commission used less than 10% of its budget on Atoms for Peace initiatives. However the program did succeed in increasing public discourse about potential civilian uses of nuclear energy (Weart, 90).

Atoms for Peace productions did not ignore the wartime uses of the atom. Instead they attempted to overcome these frightening images with promises of medical breakthroughs and prosperous cities powered by nuclear reactors. Nuclear reactors became the most visible peaceful use of the atom in the United States. As discourse about the potential benefits of nuclear reactors increased it was accompanied by a wariness of nuclear energy and its potential waste products. There was fear of the potential ecological and health consequences of nuclear waste. There was also concern that the nuclear power plants may be targeted by the Soviet Union. *Fantastic Four #1* details the exploits of the Moleman who attempts to capture all of the nuclear power plants in the world. He calls the atomic plants “every source of earthly power”, exaggerating the extent to which nuclear power plants were used during this time (*Fantastic Four #1*, 23). This issue highlights the perceived vulnerability of nuclear plants and also suggests that harnessing them would make one all powerful. With the spotlight redirected on nuclear

reactors many in the public began to think of the dangers posed by peaceful nuclear applications, which this particular issue of *Fantastic Four* illustrates. Atoms for Peace, while successful at shifting the conversation away from nuclear weapons, did not drastically change public perception of nuclear power. A poll by the American Industrial Forum following the Atoms for Peace program found that two-thirds of Americans still associated the atom with weapons and destruction (Weart, 91-93). Atoms for Peace initiatives showed Americans the peaceful possibilities of the atom. However, public perception towards the usage of the atom for energy generation was still mixed.

In Marvel Comics the most common portrayal of nuclear power usage was not for peace but war. *The Incredible Hulk* and *Fantastic Four* comics during this period had the most storylines involving nuclear weapons. In some cases the nuclear weapon was central to the plot but other times the nuclear weapons seemed only to be there to impress the reader. In both titles the superiority of the United States missiles and nuclear technology was emphasized. The emphasis on the United States supremacy has the air of propaganda but also seems to serve as reassurance to the reader. During the early 1960s there was much public discourse about the "missile gap" between the United States and the Soviet Union. In fact, President Kennedy based much of his 1960 presidential campaign on the need for the United States to catch up to and surpass the Soviet weapons stockpile. Kennedy learned that the supposed missile gap was in fact false a few weeks into his presidency based on intelligence from the U-2 spy plane (Schlosser, 269). Since Kennedy ran his campaign on the premise that the United States was falling behind he couldn't reverse his stance so quickly. The missile gap rhetoric led to greater defense spending as well as a sense of unease among Americans about Soviet nuclear

proliferation. This unease manifested itself in Marvel Comics through the repeated depictions of the United States' superiority ideologically and militarily.

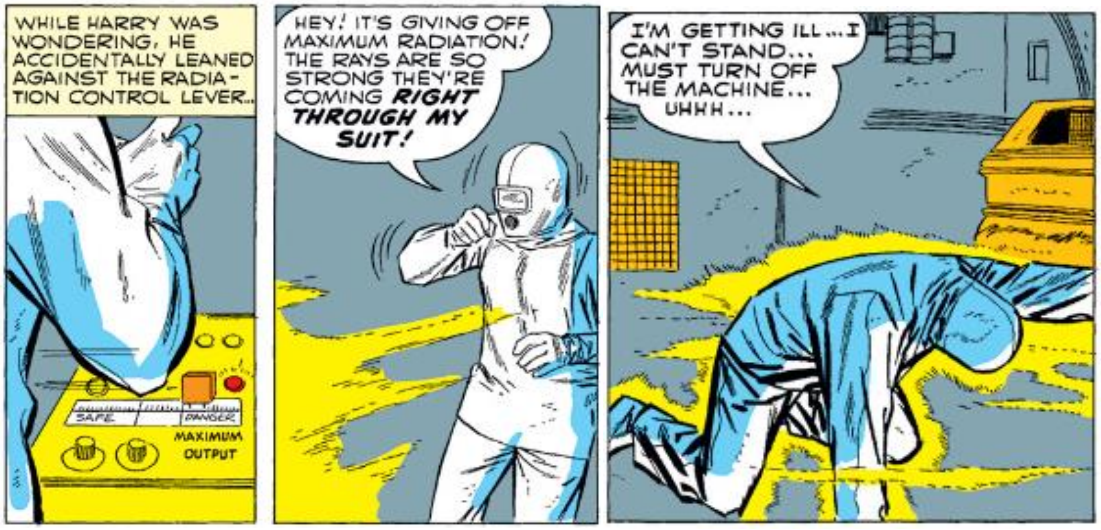
Marvel's depictions of the usage of nuclear weapons is in most cases very far from reality. The comic books show that a single missile can be launched by either side without causing a nuclear war. In *The Incredible Hulk* comics the military frequently deploys nuclear missiles against aliens, the Hulk, and the Soviet Union. This makes nuclear warfare seem like traditional war in which each side is limited in the amount of damage they can inflict on the other by their technology. In reality the use of even one nuclear weapon on the Soviet Union by the United States or vice versa would have most likely resulted in total nuclear war. President Eisenhower believed that the only option in the event of a Soviet attack was "an all-out strike" (Schlosser, 203). This became the Single Integrated Operational Plan (SIOP), which was a coordinated strike of the Soviet Union by all branches of the military (Schlosser, 204). This total war plan is very different from what is depicted by Marvel Comics, which seem to indicate that war would be mostly confined to a few targets. Paradoxically the prospect of total war for many Americans led to less nuclear anxiety because they believed that in the event of war it would be so horrible that they would surely die (Weart, 153). Total war would at least bring certainty rather than the total chaos that would result from the limited war scenarios seen in Marvel Comics. Clearly global annihilation is a bit heavy for comic books directed towards kids and young adults which accounts for this gap in Marvel Comics. This fatalistic view of nuclear war was not held by all Americans. The public still considered what happened after the dust of nuclear war cleared and the nation was left to deal with radioactive fallout.

Radiation and potential fallout from a bomb was the greatest aspect of nuclear anxiety among the American public. Nuclear fallout was the biggest unknown of nuclear weapons to the public and even to scientists. Scientists disagreed over the extent of nuclear fallout from bomb tests as well as possible future effects. Radiation seemed particularly insidious to Americans because its effects were not entirely known and could strike decades after a bomb was dropped (Weart, 114). In 1962 a poll showed that more Americans feared the fallout from atmospheric radiation than an actual Hydrogen bomb blast (Weart, 150). It seemed that the uncertainty that came with radiation was more terrifying than sudden death by explosion. Radiation is extensively referenced in Marvel Comics between 1961 and 1963 continuing even to present day comic book and movie retellings. Radiation represents an unknown in science that evokes intense anxiety in the public.

Radiation is mentioned in Marvel Comics during this period almost as frequently as nuclear weapons themselves. In some instances, mentioning radiation seems to indicate the public's fascination with the new concept rather than an anxiety. An example of this can be found in *Tales to Astonish #35* when scientist Henry Pym is asked to create an anti-radiation serum for the United States government. Communists learn of Pym's work and try to steal the formula. Pym thwarts the Reds by using his shrinking serum to transform into Ant-Man and in his words save "the entire free world" (*Tales to Astonish #35,* 13) No great detail is given to the anti- radiation serum but it does show the prevalence of the issue of radiation in public thought. The most conspicuous instances of radiation were the mishaps that resulted in the powers of Spider-Man and The Hulk. In the case of Spider-Man the spider that bites him is glowing, representing the danger posed by its radioactivity. When the bomb explodes creating

the Hulk he is bathed in green light. These representations show radiation as an alien force that is easily recognized by its green glow. In reality radiation was much more terrible because it was unseen. Stories of illnesses and birth defects years after the Hiroshima and Nagasaki bombings added to the terrible consequences that radiation could present. Biochemist Linus Pauling calculated that continued nuclear testing would result in 55,000 birth defects and 100,000 still births each year (Weart, 113). The numbers he suggested were only from the nuclear tests of the United States and the Soviet Union. The consequences of an actual nuclear war were unimaginable to many Americans. The invisibility of nuclear fallout and the duration of its effect evoked the greatest anxiety in Americans.

All of the depictions of the effects of radiation in Marvel Comics are considerably less terrible than reality. For the Hulk and Spider-Man it gives them superhuman powers, which do bring them suffering but nothing compared to reality. In both series the heroes' struggle with their radioactively induced powers is primarily psychological, rather than physical. There is one story in *Tales to Astonish #37* which presents a slightly more chilling account of the effects of radiation. The story follows Harry, a worker at an atomic energy facility who is accidentally dosed with radiation. The radiation causes anything he dreams to come true. The power is wonderful until one night Harry dreams that he died. He then spends the next day on a secluded hilltop in the hopes that he can avoid death. The last page of the comic shows a man with binoculars watching an avalanche on the hill on which Harry was hiding. The man comments, "Good thing nobody's been up there for years. They wouldn't have had a chance to survive." (Tales to Astonish #37, 5).



Tales to Astonish #37, pg. 2

The story of Henry appears in *Tales to Astonish* which originally consisted of science fiction stories but later included stories of superheroes such as Ant Man and the Hulk. Often the issues would include a combination of superhero and science fiction stories. Overall during this period nuclear power was included much more frequently in the superhero stories than in the science fiction titles. However, most of the superhero plots have a much lighter take on issues such as radiation and nuclear warfare. Clearly the dream power that Harry receives from the radiation is totally bogus but this is the only instance in this period of Marvel Comics that someone dies as a result of radiation. In every other instance the character is unharmed or receives powers like the Hulk and Spider-Man. Bruce Banner is tormented by his transformation by gamma rays but he ultimately uses his powers for good and comes to accept his role as the Hulk. Harry's story depicts a much darker side to radiation that is not so apparent in other stories.

The power of the atom and its potential applications represented an unknown quantity to society during the Cold War. Marvel Comics during this time tapped into the interest

generated by this uncertainty. In many instances Marvel Comics used nuclear power merely as an interesting plot point to draw in readers. However, there are instances in which the comics seem to draw on Americans' anxiety about the true nature of atomic power and the consequences of its applications. Ultimately the comic book representations of atomic applications such as nuclear weapons and radiation were much less terrible than the reality of Cold War America.

Section II: Those Who Wield the Power

At the beginning of Marvel Comics in 1961 there was no doubt that nuclear energy promised a wealth of applications both beneficial and dangerous. Newspapers reported on the vast power that the atom contained with headlines such as “Uranium Found to Yield Force 5 Million Times as Potent as Coal” (Laurence). It seemed that with the power of the atom one nation or even potentially one person could bring about the end of the world. The issue of who was wielding this power became a concern for the public as well as political leaders. The power contained within even a single atomic bomb proved more potent than anyone had imagined within the pages of comic books. Even heroes with super strength such as Captain America rely on their bodies to provide them with power. Compared to the infinite amount of energy contained within atoms, traditional heroes’ powers seem much more limited. The fear that a potential villain could cause mass destruction is true of many technologies such as guns and grenades. Nuclear power seemed to go beyond these traditional means of destruction, providing one person with the ability to wipe out entire cities.

Unlike the fictitious Super-Serum from Captain America, possession of nuclear power was a real possibility in the 1960s. Who came to possess this power and who it affected was an issue of concern throughout the Cold War. Marvel comic books tapped into this public interest surrounding nuclear energy and engaged readers with stories of both villains and heroes wielding the power of the atom. As discussed earlier the exact nature of nuclear energy was complex and often misunderstood which led to anxiety about the extent of nuclear power. There was, however, no doubt among the public that those who had the ability to use and control nuclear energy possessed the capability to cause massive destruction as demonstrated

by the 1945 bombings of Hiroshima and Nagasaki (Weart, 101). Marvel comic books in 1962 and 1963 explored who possessed nuclear power on both the individual and the national level and the effect of this power on the public.

There is a great deal of emphasis placed on scientists, both good and evil in Marvel Comics. The public interest in the atom and science during this period also meant greater interest in scientists. During this period scientists were often viewed by the public with curiosity as well as apprehension. Atomic scientists were frequently depicted in the media as masters of the mysterious atom which to some was a bit disconcerting (Weart, 33). There was also however a degree of admiration for scientists who were making discoveries to benefit society. Aspects of this complex relationship between the public and atomic scientists are found throughout Marvel Comics in this period.

The rogue scientist archetype is prominent in Marvel comic books in both villains and heroes. In many instances nuclear energy provides the scientist with a boundless amount of power. Unlike traditional villains or heroes, a scientist's power is not derived from within himself but through what he creates. In Marvel Comics scientists' creations are shown as all powerful, yet the scientists themselves are vulnerable. Numerous stories involve scientists kidnapped by aliens, criminals, or the Soviet Union. Scientists, unlike superheroes are shown as physically weak and therefore defenseless against brute force. This vulnerability makes the scientists a liability to the military if they are captured because only they know the secrets of technology. The Marvel depictions of military scientists are very simplistic because in almost every plot there is one scientist that knows all of the secrets of a particular technology. Bruce Banner and Henry Pym are both characterized as geniuses that have knowledge of atomic

secrets far beyond that of their colleagues. Placing one character as the sole possessor of nuclear secrets makes the information seem much more susceptible to enemies such as the Soviet Union. This depiction of nuclear secrets exaggerated the vulnerability of United States weapons intelligence.

Nuclear power posed a new threat that even benevolent scientists looking to research the potential of the atom could make a mistake that leads to catastrophe. Bruce Banner's origin story plays on these fears of the potential consequences of nuclear power research. Banner is a scientist working for the United States military when a nuclear test mishap leads to his exposure to Gamma radiation. Gamma rays transform Banner into the brutish, monster Hulk that has no control over his actions. Before the bomb test there is discussion among Banner's colleagues that if the test fails it could lead to destruction of the entire continent. Banner is pressured into starting the test by the domineering General Ross who does not understand the power of the bomb. Banner describes himself as a "milksop" and is completely ineffectual in comparison to the General, which ultimately leads to the premature launch of the Gamma-Bomb (*The Incredible Hulk #2*).

In reality Cold War scientists like Banner experienced a change in the relationship between government and science in the United States. The United States government viewed science and technology as a means to advance the economy and society as well as gain national prestige. World War II began a move towards big science that was designed like an industrial system. The focus shifted from science purely for the sake of discovery to a need for science to create technology that could win the war. For scientists this meant a fundamental change in the way that they approached research. Theoretical physicists became engineers building new

weapon systems for the military. The United States military became the principal financial patron for research, so that many scientists had no other options for funding (Wang). General Ross' insistence that Banner start the G-Bomb test offers a potential peril of this new relationship between science and the military. The new hierarchy placed military and governmental advisors as arbiters of weapons technology well beyond their expertise in nuclear physics. It also placed scientists in a new and sometimes uncomfortable role as consultants to the military. Banner embodies this discomfort in his timidity dealing with General Ross. Banner who claims that he is "a man of science, not a man of action" possesses the genius to create the new bomb but is powerless against the immense military-industrial complex (*The Incredible Hulk* #1). The emerging system of big science posed new problems for scientists as well as increased the potential for mishaps that affected society as a whole.

Most Americans were probably not overly worried that gamma rays would turn them into a green beast. There was, however, a growing fear that science was going too far with research into nuclear energy and at some point that would lead to disaster. These fears were not baseless there had been some near misses and miscalculations. One of the greatest miscalculations occurred on March 1, 1954 when the United States tested its BRAVO hydrogen bomb in the Marshall Islands. The blast was almost three times as powerful as calculated by scientists and the fallout was on a much larger scale than expected. In the end one Japanese fisherman was killed by radiation poisoning and thousands of others were affected indirectly by the blast's ecological impact. The United States Atomic Energy Commission refused to accept responsibility and would not admit that they had made a mistake in their calculations. Beyond the refusal of responsibility the AEC also was not forthcoming about the potential effects of

nuclear fallout following a hydrogen bomb explosion. The BRAVO incident created a growing distrust and anxiety among Americans and the rest of the world over the effects of nuclear power as well as the entities which controlled this power (Weart, 98-99)

Spider-Man's origin story depicts this fear over the potential that nuclear experimentation posed to civilians. While characters such as Bruce Banner and Reed Richards are scientists that were in part responsible for the accidents that led to their powers, Peter Parker is a regular high schooler who attends a science exposition on "Experiments in Radio-Activity" where he is bitten by an irradiated spider. From the bite Parker gains the super strength of a spider and builds himself a web shooting device. Parker, unlike Bruce Banner, views his transformation into Spider-Man as a good thing. However, unlike Banner, in the beginning he uses his powers only for his own gain. This changes when Peter's uncle Ben is murdered by a man that Spider-Man let escape. The comic ends with the famous line "in this world, with great power there must also come—great responsibility" (*Amazing Fantasy #15*, 11). The issue of responsibility for nuclear weapons was prominent in the minds of the American public during this period.

Popular culture often depicts the deployment of nuclear warheads with just the press of one button. Marvel Comics also included this imagery throughout the early 1960s. In the first issue of The Incredible Hulk, General Ross launches the Gamma Bomb with just one press of the button (*Incredible Hulk #1)*. The ease with which nuclear weapons were deployed in popular culture reflected anxiety among the public that a single press of a button or a technical failure could lead to war. Spencer Weart in *The Rise of Nuclear Fear*, remarks that before 1945 no one thought that world war could be triggered by a technical mistake (Weart, 198). The button

imagery made many Americans fearful that an overzealous military leader like General Ross could cause World War III with just one press.

Incredible Hulk #1

Nuclear power gave immense power to those who possessed it during the Cold War both in reality and within the pages of Marvel Comics. The emphasis on the applications of the atom placed greater importance on science and the scientists who harnessed its power. Marvel Comics during this period included a variety of representations of scientists and their usage of atomic power for good and evil. These representations often over simplified the issues associated with nuclear research and its applications however they do seem to show a public concern over who possessed nuclear power and those it effected.

Section III: Moral Ambivalence

Morality has been always closely tied to nuclear weapons and their usage, though prior to the Hiroshima and Nagasaki bombings there was little concern about moral justifications for the fire bombings that killed just as many innocent civilians. Both of these methods used against civilians were equally atrocious in terms of the human lives lost but the atomic bombs are remembered as the most abhorrent (Weart, 50). Nuclear bombs were set apart from other forms of warfare because of their ability to cause immediate and total annihilation that prior to 1945 seemed unfathomable. As the United States' public heard more and more stories from survivors of the Japanese bombings there developed a more complex view of nuclear weapons and the justifications of their use. In *The Rise of Nuclear Fear*, Spencer Weart calls the bombings of Hiroshima and Nagasaki the "original sin" (Weart, 100). This idea was developed through the 1950s by many who questioned the decision to use nuclear weapons rather than other means like fire bombs. Some saw the decision as a way to shock the world, especially the Soviets with the power of the United States. Critics suggested that the bombings were outside the realm of normal war, a claim which was strengthened by the horrible narratives of Japanese survivors (Weart, 101). In reaction to these narratives there developed a moral ambivalence among the American public over the creation and possible use of nuclear weapons. The United States had to reconcile the security provided by nuclear arms with the outcomes of their use.

Namor, a recurring character in the *Fantastic Four*, raises some of the moral questions associated with nuclear arms usage. Namor, also known as the Sub-Mariner returns to his kingdom under the sea to find that it has been destroyed by atomic testing. He vows revenge on humans establishing him as an adversary to the Fantastic Four. Namor is not like other

villains that the Fantastic Four have faced who have no justification for their misdeeds (*Fantastic Four #4*). It could be argued that the Sub-Mariner is actually the victim in the story and in subsequent comics Sue Storm is sympathetic to his sufferings (*Fantastic Four #6*). The Comic Code and the younger audience likely placed limits on the extent of Namor's story. The Comic Code was a set of regulations that placed restrictions on the portrayal of violence and crime in comic books. Namor's people are not killed by the blast that destroys his home; instead they have disappeared which is in accordance with the code which stipulates no "excessive violence" (Senate). There is also a restriction against creating sympathy for the criminal which in this case is bent. The conclusions of the issues in which Namor appears seem to reinforce his place as a sympathetic figure. He is not defeated by the Fantastic Four. Instead he returns to the sea promising a return "perhaps someday when I am not haunted by bitter memories of my lost people" (*Fantastic Four #6*, 24). Even with the restrictions of the Comic Code the Namor storyline seems to suggest an underlying disgust for the effects of nuclear weapons and the destruction that they cause.

Fantastic #4, page 13

The Incredible Hulk series also illustrates the uncertainty among the public about the usage of nuclear weapons. The dichotomy of the Hulk serves as a representation of the moral dilemma that the United States faced with its possession of nuclear arms. In *The Hulk #2,* Bruce Banner is tormented by his nightly transformations into the Hulk. He rages against General Ross who ordered the nuclear test that led to his mutant alter ego. When General Ross' daughter asks "Why do you hate us so?", the Hulk responds "Why shouldn't I hate all of mankind??? Look what men have done to me!" (*The Incredible Hulk #2*, 21) Banner clearly possesses hatred for the men and the nuclear radiation that has led to his transformation into the Hulk. However, later in the issue when aliens are advancing on the earth, Banner uses his invention the Gamma Gun to combat the invaders. Banner relies on the same rays that transformed him into the beast that he so despises to destroy his enemies. This ambivalence over nuclear arms is similar to the United States' reliance on nuclear arms for protection but also the publics' revulsion towards the results of their usage. In the end nuclear arms are seen as a necessary evil for the protection of the United States from attack.

In his analysis *The Jekyll and Hyde of the Atomic Age*, Adam Capitanio asserts that the Hulk himself represents nuclear power and the United States' ambivalence towards its usage. The Hulk like nuclear power is an immensely powerful force that can produce massive destruction (Capitanio, 265). Like nuclear power the Hulk is difficult to contain which is illustrated by his self-imprisonment in a concrete chamber beneath the ocean with "walls which were built to withstand the force of an atomic explosion" (The Hulk #3, 1). Throughout the first three issues of the series the Hulk is depicted as a brute with pure strength and no intelligence to regulate or direct the usage of this power. In these issues The Hulk is viewed by the public as

a menace that must be repressed. In *The Incredible Hulk #4*, Rick Jones and Bruce Banner devise a method using Gamma rays to maintain Banner's intelligence when he transforms into the Hulk. The first adversary faced by the improved Hulk is a group of communists disguised as aliens. The communists in this fight are cast as the barbarians against the quick witted Hulk who quickly defeats the communists and ships them back to "Vodka-Land" (*The Incredible Hulk #4*, 9). Following Capitanio's reading of the Hulk character as the representation of nuclear power, the new Hulk's defeat of the commies seems to suggest that use of nuclear power is ethical when it is tempered by rationality (Capitanio, 265). In this instance the Hulk, like nuclear weapons, must be used to defeat the communists whose goal is to destroy the American way of life. This usage of nuclear power is consistent with the ideological consensus that arose in the early Cold War which framed the United States as the moral bastion of the world (Costello, 40). This black and white view of the Cold War translated easily into the good versus evil narrative that is prominent in the superhero genre. In the first three issues of the series the Hulk does not fit as easily into the mold of a traditional superhero because when he transforms he has no moral compass on which to base his actions. The early Hulk represents the ramifications of unchecked nuclear power that is not morally justified by American values such as "freedom, progress, and providence" that became part of the Cold War consensus (Costello, 41). The intelligent Hulk serves as an embodiment of America's power but also its' restraint stemming from these common moral principles.

In the same issue as the Hulk's defeat over the communists there is a suggestion of cracks forming in the consensus that America is morally justified in its use of nuclear weapons. The Hulk is not considered a hero for defeating the communists; instead the public suggests

that it was all a hoax to make the Hulk seem like a hero (*The Incredible Hulk #4*, 5). There is underlying distrust for The Hulk ever when he uses his strength to benefit the American people. The public realizes that the Hulk's power is uncontrollable and could just as easily harm them as help them. A similar sentiment about the United States' nuclear arms proliferation arose among some in the American public during this period. They saw nuclear arms possessed by the United States for protection as a threat to the overall peace. It would not matter whether the first missile fired in a nuclear war was American or Soviet; it was likely to spell the end of life as the world knew it just the same (Jacobs, 415). Most global leaders agreed with this assessment, the detonation of thermonuclear bombs by both the United States and the Soviet Union seemed to confirm the likely hood of global annihilation. Winston Churchill described it as both sides having an "equality of annihilation" that allowed for the hope of avoiding war (Gaddis, 65). While this hope may have provided some with reassurance, the threat of a potential war still loomed large as the Hulk puts it in issue 5, "Don't kid yourself! Nobody's safe!" (*The Incredible Hulk #5*, 14) This sentiment from the Hulk seems to align with public opinion during the time of the issue's release in January 1963. Although the nation had avoided nuclear war during the Cuban Missile Crisis the public was still holding its collective breath in the months following the incident.

Weart's analysis of nuclear anxiety during the Cold War found a significant drop in public references to nuclear energy or arms. Overall this trend seems to be true of Marvel Comic books as well. Nuclear weapons and radiation are still mentioned but much less frequently and often play a much smaller role in the plot. The introduction of Iron Man in *Tales of Suspense #39*, included no instances of nuclear weapons. Tony Stark instead relied on the

technology of micro-transistors and magnets to build his metal armor (*Tales of Suspense #39*). Had this comic been released only a few months earlier Tony Stark may have been a nuclear physicist like Reed Richards and Bruce Banner. Instead Stark is an electrical engineer who works for the government. However unlike Banner his projects are not nuclear in nature. Weart hypothesizes that the Cuban Missile Crisis served as a catharsis that led to this decrease in public concern over nuclear war (Weart, 154). He also suggests that the American public had become habituated to the fear of nuclear war and were no longer actively concerned (Weart, 156). It is possible that this habituation to fear made stories about nuclear weapons less exciting to readers of Marvel Comics after the Cuban Missile Crisis. An analysis of Marvel Comics in the years following the Cuban Missile Crisis could potentially provide a more thorough explanation for this trend.

Conclusion:

The Fantastic Four's journey to space in November of 1961, launched Marvel Comics into American Cold War popular culture. From the beginning Marvel Comics incorporated aspects of the real world in the setting and characters that made the stories a popular choice for a wide range of readers. These readers closely followed the adventures of the Fantastic Four as the characters negotiated Cold War America. The Cold War America depicted within the pages of Marvel Comics provides an interesting comparison to reality. The comics drew on the political and social affairs of the time to create a unique blend of fantasy and reality. The issue of nuclear power loomed large both in the Marvel universe as well as the United States.

The nature of the atom and its potential applications was a complex issue for the American public during this period. The destructive power of the atom had been clearly established with the 1945 bombings of Nagasaki and Hiroshima. However there were also promises of medical and energy breakthroughs that made the exact nature of the atom difficult to ascertain. This uncertainty resulted in an interest in the atom that Marvel Comics explored extensively during the period from November 1961 to April 1963. Villains and heroes utilized the power of the atom with nuclear weapons as well as imagined powers that harnessed nuclear energy. The comics took aspects of the science and politics of nuclear power and incorporated them into the Marvel universe. The comics dealt with aspects of nuclear power such as radiation and nuclear warfare. However, they were often sanitized versions of their real counterparts.

Although the exact nature of the atom was difficult to establish there was no doubt that it provided those with the ability to harness nuclear energy with great power. In the United

States this meant a greater focus on science and led to greater government involvement in nuclear research. Marvel characters like Bruce Banner, encountered some of the issues posed by the growing involvement of the government and military in science. The race towards the development of new nuclear weapons and technology led to consequences for real Americans and Marvel characters. The comic book consequences resulted in the transformation of Banner into the Hulk and Peter Parker into Spider-Man. Transformation into a superhero is obviously not a terrible fate but these accidents do seem to indicate some unease about expansion of science and the potential consequences of nuclear experimentation.

Perhaps nothing brought the consequences of nuclear weapons more sharply into focus than the stories of the survivors of the atomic bombings. These narratives resulted in a moral ambivalence among many Americans towards the usage of nuclear weapons. The story of Namor in the *Fantastic Four* series provides a take on the horrible results of nuclear weapons. Like the representations of radiation, the comic depiction of the consequences of nuclear weapons is less terrible than reality. However, attempts at moral justifications for the use of nuclear weapons in the comics and in reality were quite similar. The Hulk comics display some of the tensions that arose when the United States tried to rationalize its continued proliferation and use of nuclear weapons. The comics reveal some of the difficulty that the public faced when attempting to reconcile American morals and values with the use of nuclear weapons.

Marvel Comic books during this period from November 1961 to April 1963 clearly indicate a public interest in issues pertaining to the atom. The comics incorporated many aspects of nuclear power with varying degrees of realism. The treatment of many of these issues in Marvel Comics is much less frightening than the realities of the Cold War. However

overall these representations of the issues pertaining to nuclear power seem to demonstrate some of the concerns and anxieties of their readers during this period.

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