Atomic Imagery and Its Characterization
By Anne Borremans

The atomic bomb has been an enduring feature of postwar culture. After the American atomic bomb had been successfully detonated on Hiroshima, Japan on August 6, 1945, the United States entered a new era of both promise and peril. Usually, changes in a society's way of thinking happen gradually over time; they are more apparent to historians than the people living through them. But the nuclear era sprung into the world with horrifying abruptness.

This shock was manifested in the media – in newspapers, magazine articles, radio broadcasts, and images. These images are the focus of the accompanying website, "Atomic Imagery"; they illustrate the shock, regret, fantasy, and resolve of a society that has struggled with the possibility of nuclear destruction. They consist of everything visual – including films, comic books, photography and other forms of visual art. Since the bombing of Hiroshima and Nagasaki in 1945, America's emotions have continued to be manifested through images in popular culture throughout four distinct phases following the war.

The purpose of the web site is to collect, organize, and display images related to the nuclear theme in the contexts of film, comics, and other forms of visual art. Its organization parallels that of this paper – there is an introduction for each of the four phases, outlining the criteria used to characterize the stages, and links to three sub-categories for each phase, namely "Films," "Comics," and "Artists." In addition, there is a history of the atomic bombings web link, a conclusion, and a site map.

The past 60 years can be organized into four phases based on America's reactions to nuclear power and weapons. We can call the first phase (1945-1952) the "Atomic

Intrusion," as it is based around the fear and anxiety Americans felt after the bombings on Japan. Americans were now faced with the realization that just as easy as we dropped the atomic bombs, we could potentially be the victim on the other side of an attack. The Soviet atomic test in 1949 – code-named "First Lightning" – galvanized these feelings of anxiety and fear. Nuclear tests and information about the long-term effects of nuclear explosions surfaced, sparking a new fear in American society – the fear of the fallout effects. The second phase (1953-1963), naturally dubbed the "Fallout," begins here. This period was characterized by imaginative ideas of the effects of fallout radiation – for example the "radiated monster" films of these years, together with superheroes that attained their powers through radiation.

By the early 1960s, the dominant tone of American atomic culture began to change, due largely in part to the Cuban Missile Crisis, the Partial Test Ban Treaty, and the assassination of President John F. Kennedy. The Partial Test Ban Treaty caused nuclear testing to go literally underground, and it was not reported in newspapers or on television. This kept nuclear weapons out of American consciousness, beginning the third phase – the "Big Sleep" (1964-1979). At the end of the 1970s there was a growing antinuclear movement. This movement, in combination with the highly publicized nuclear accident at Pennsylvania's Three Mile Island, played a role in ending this "Big Sleep" phase. America was roused again with the threat of nuclear attack, starting the fourth phase, the "Awakening" (1980-*Present*).

Initially, the bombs created an explosion of both jubilation and apprehension in America. They concluded a long and bitter war, but at the same time provoked a feeling of distress and helplessness at the sudden comprehension of their mortality. As CBS

radio commentator Edward R. Murrow put it on August 12, 1945, "Seldom, if ever, has a war ended leaving the victors with such a sense of uncertainty and fear, with such a realization that the future is obscure and that survival is not assured." What truly scared society most was the horrific efficiency of destruction inherent in nuclear-weapons technology. It had now become possible for someone to destroy the world deliberately. In this way, the atomic bomb and the threat of a nuclear attack intruded into American consciousness, which is where the phrase "Atomic Intrusion" - the title of the first phase of the Atomic era - comes from.

Life magazine devoted much of its August 20, 1945 issue to the bomb. In the issue were many full-page photographs of the bombs dropping on Hiroshima and Nagasaki, giving many Americans their first look at the mushroom-shaped cloud that would become the quintessential visual symbol of the new epoch. Script writers in Hollywood rushed to incorporate the atomic bomb into their films. *The House on 92nd Street*, released in September of 1945, was revised to incorporate the bomb, becoming the first of these nuclear-related films. In the movie, Nazi agents work in New York City in early World War II, searching for "Process 97, the secret ingredient of the atomic bomb."

Another theme apparent in American culture after the initial shock of the bomb was the strain to find humor in the new weapon. Puns were all over the news – *Time* said the Alamogordo test had "proved the bomb a smash-hit." On August 8, 1945, one *Milwaukee Journal* headline stated, "The New Bomb Is So Staggering to the Mind, One Doesn't Dare Pun 'Up and Atom!'" On August 13 of that same year the *Chicago Tribune* ran an entire column of "Atomic Anecdotes." One radio newscaster commented that Hiroshima "looked like Ebbetts Field after a game between the Giants and the

Dodgers." In September, *Life* featured a full-page photograph of a beautiful MGM starlet who had been officially titled "The Anatomic Bomb." On Valentine's Day of 1946, one greeting card "showed an atom bomb exploding, and under it a verse that read: 'Will you be my little geranium, until we are both blown up by uranium?'" (Boyer 21). This use of humor to make light of the atomic bomb was merely a defensive response to the more deep-rooted reaction – that of fear and anxiety.

In cartoons, the atomic bomb was portrayed as a creature from myth. They showed muscular genies escaping from bottles and brutal giants labeled "atomic power" looming over unfortunate and helpless politicians and scientists. A *Philadelphia Inquirer* cartoon of August 7, 1945, portrayed a "grotesque, apelike brute staring up in dumb wonder as an atomic bomb exploded overhead" (Boyer 13).

This heavily racist post-Hiroshima climate was short-lived and was rapidly overtaken by the growing fear that was prevalent in the world. Americans saw themselves as a threat, but also as a potential *victim*. A large map of the destroyed city of Hiroshima was published in the *Milwaukee Journal* on August 8; it was a visual glimpse of the potential fate of the future of an American city.

Many Americans reacted by supporting world government and the idea of a new international order. This political response assuaged for many the need to devise a policy as great in magnitude as the threat of the bomb itself. The fear of mutual annihilation was a powerful drive in the support of this idea. In the film *The Day the Earth Stood Still* (1951), an alien and his robot land on earth to convince world leaders to learn to live in peace. The scientists of the world unite to hear a message of peace from this alien, which is a comment on this idea of a world order.

Another movement that sprung forth in early September of 1945 was the "scientists' movement," which was a proponent of a world order to regulate and negotiate the use of the new weapon. The motivation behind this movement was fear; the scientists felt that it was their duty to try to shape official policy regarding atomic energy, perhaps due to guilt associated with helping to create the bomb. In *The Beginning or the End*, a 1946 MGM movie about the Manhattan Project, real scientists, such as Einstein and Fermi, are included as characters. Though this film offers a positive message about the bomb, it also shows the tribulations of the scientists working on nuclear technology. One of the fictitious characters in the film, scientist Matt Cochran, who throughout the movie expresses deep concerns with the bomb, is fatally injured by an accidental radiation leak as he prepares the bomb for delivery. His final words are "That's what I get for building this thing."

The reservations many scientists had about creating the bomb - and on top of this the guilt that they felt for creating this destructive technology - were motivations for wanting to emphasize the hazards the bomb could bring. One of the active scientists at the time was Eugene Rabinowitch, who joined with two other scientists in October 1945 to explain another motive of the "scientists' movement" in *Life* magazine: "Having helped man to make the first step into this new world, [scientists] have the responsibility of warning and advising him until he has become aware of its perils as well as its wonders"

The publication of the "scientists' movement" was called the *Bulletin*. This journal featured the image of a "Doomsday Clock" with hands forever approaching – but never actually reaching – midnight. This image appeared on the cover of every issue and

became one of the best-known visual symbols of the atomic age. It is an extraordinary representation of the fear and anxiety many atomic scientists felt with regard to nuclear power. Another image associated with the atomic scientists at this time was the actual face of J. Robert Oppenheimer, who had a somber face with blank eyes. His photograph was included in many articles of the time, adding to the iconography of fear in culture.

Another scientist's photograph (Harold Urey) was in the media, linked to an article published in *Collier's* under his name, though actually ghostwritten by Michael Amrine. The photograph shows the hollow eyes of a scientist suffering from fear and anguish. The article was titled, "I'm a Frightened Man." It begins:

> I write this to frighten you. I'm a frightened man, myself. All the scientists I know are frightened – frightened for their lives – and frightened for your life… {We} who have lived for years in the shadow of the atomic bomb are well acquainted with fear, and it is a fear you should share if we are intelligently to meet our problems. (Amrine 18)

These articles and images presented by the scientists had a great impact on American culture. Newspapers and magazines frequently quoted their descriptions of what an atomic attack could potentially do.

America's fears were not only manipulated and intensified by political activists and atomic scientists, but also the media reporters. They wanted to keep the coverage as astounding and dramatic as possible. One of the most stunning was "The 36-Hour War" article published in *Life* in November 1945. This article was an imagined scenario of the United States being bombed, killing ten million Americans. In the end, "the U.S. wins the atomic war," though the final full-page drawing is of a ruined New York City where the only structure left standing is the entrance to the Public Library where the stone lions watch the scientists "test the rubble of the shattered city for radioactivity" (Life "The 36-

Hour War"). Accompanying the text were realistic drawings – one of a mushroom cloud looming over Washington D.C. and another showing missiles approaching thirteen other American cities.

America's fears of a nuclear holocaust were intensified and manipulated by political activists and the media in an effort to use grass-roots pressure to shape public policy. Atomic scientists, world-government activists, and international-control activists were the main protagonists, playing a role in shaping the post-Hiroshima cultural climate.

The plan was to intentionally create sensationalized predictions of a doomsday scenario that was used to incite fear that would then create motivation and energy in society for the purpose of reformation and world government. The idea was similar to that of some religions, which use fear to promote what they consider positive ideas and actions – this was referred to as "the good news of damnation" by Robert M. Hutchins in his August 12, 1945 *Chicago Roundtable* broadcast. In this way science was directly linked to politics – "science is the forcing hand of the statesman" (Compton 53).

Not everyone was in favor of this method of instilling fear in society. Those against it argued that too much could actually cause a numbing effect. Susan Sontag comments on this idea in *Regarding the Pains of Others*, where she argues that "modern life consists of a diet of horrors to which we are corrupted and to which we gradually become habituated" but notes that it is no new idea (Sontag 106). Cynicism was another possible negative reaction to the scare tactic.

This strategy of manipulating fear to build support for political resolution of the atomic threat lasted until around 1947, when it began to lose steam and its leaders lost confidence in the plan or turned to other issues. This world-government campaign was

one of the earliest demonstrations of fear that spread across America after August 1945. It helped set a precedent for activist strategy that would be used for later anti-nuclear campaigns.

In 1949, Americans were faced with the fact that the Soviet Union tested an atomic bomb. Here the nuclear arms race began, instilling another wave of fear in American society. The American government responded that we must not surrender to fear or allow ourselves to be paralyzed by anxiety. The bomb was now to be seen as a necessary, positive, and natural (even supernatural) discovery.

The 1951 American civil defense nine-minute motion picture, *Duck and Cover*, is an example of this motto. President Truman's slogan at the time was "Education is our first line of defense" and on this basis, *Duck and Cover* was a lesson to "duck and cover" at the sight of a bright flash. Public (and many private) schools began regular air raid drills where the teacher would yell "Drop!" and the students would kneel under their desks and take cover. The reasoning behind these drills was that if children were "prepared" for an attack, they would be less worried at the potential of such an event.

Eisenhower's administration began another attempt at spreading the positive message about the peaceful uses of atomic energy with the "Atoms for Peace" campaign. This campaign was primarily implemented in films, books, and exhibits. One government-sponsored production was the *Our Friend the Atom* indoctrination tool that spanned from film to book to an exhibit at Disneyland's Tomorrowland. This was one of the first examples of "synergy" of the media. All three of these productions attempted to present the positive, happy, non-destructive side of the atom in an entertaining way.

Another Atoms for Peace production was a high school film series entitled *The Magic of the Atom*. This series focused on electrical energy and isotopes used in industry, medicine, biological research, and in agriculture. In the end, Atoms for Peace publicity actually gave greater prominence than ever to the transmutation imagery, simply by calling attention to it. Public anxiety about nuclear weapons was so strong at the time that Atoms for Peace productions simply could not hope to outweigh it (Weart 170-3).

In 1953, the government campaign to normalize nuclear weapons began to dissolve due to public attention on nuclear issues leading to anxiety. This allowed for new images to surface, beginning the next phase of the atomic era – the "Fallout," lasting until 1962. Fear was still embedded in American culture, but this time for a different reason. Instead of primarily fearing the initial blast of a nuclear attack and the sudden and instant destruction along with it, now the fear was of radioactive fallout. Such fears had surfaced after the Bikini Island test of 1946, but the United States in 1952 and the Russians soon after took this experimentation to a new level with their atmospheric testing of multimegaton thermonuclear bombs.

In 1954, the United States raised alarms with their test series. There were many negative consequences of these tests - radioactive ash was spread over seven thousand square miles of the Pacific, forcing the emergency evacuation of nearby islanders. In addition, many Japanese fishermen who were eighty miles away from the site became ill or even fatally ill (Boyer).

In 1955, radioactive rain fell on Chicago; and in 1959 deadly strontium-90 began to show up in milk. A new group of scientists and doctors warned of the dangers of

fallout, including bone cancer, leukemia, and genetic mutation. The *Saturday Evening Post* ran a feature titled "Fallout: The Silent Killer" on August 29, 1959. Media attention created an all-out fallout scare in society.

This new fear generated anxieties about nuclear testing which spawned a national movement against it. These new anxieties also generated a dramatic increase in attention on civil defense issues. In 1961, as part of President Kennedy's dispute with the Russians over Berlin, Kennedy went on television, warned of the danger of nuclear war, and called for a massive fallout-shelter program. Soon after, the image of black and yellow "Fallout Shelter" signs garnished schools and public buildings across the country. Some ordinary citizens actually built their own fallout shelters, receiving much media attention.

A craze of "radiated monster" films emerged in our culture, such as *The Beast from 20,000 Fathoms, The Blob, It, The H-Man, Attack of the Crab Monsters, Them!, X the Unknown, The Beast of Yucca Flats, and The Incredible Shrinking Man*. The images in these films reflected people's anxiety about the biological effects of nuclear radiation, with the monsters from the films representing the mutated post-nuclear *humanity*. This is very apparent in *Them!* (1954), where huge mutant ants emerge from an atomic-bomb test site in New Mexico. The scientist realizes in the end that in the atomic age, this type of phenomenon should be expected.

Like the radiated monster films, science-fiction TV shows also reflected society's fear of the effects of radiation. In a 1961 episode of the *Twilight Zone* called "The Shelter," warning sirens go off in a typical suburban neighborhood in America, and the people of the community dash to the home of one man who had built a shelter. He does

not allow anyone but his family members into the structure. This turns the neighbors into a shrieking mob, ultimately destroying the community of the neighborhood, though no bomb actually fell.

In a 1962 episode of the *Outer Limits*, genetically altered bees desiring world domination transform their queen into a beautiful young human female. She worms her way into the home of a normal suburban couple and seduces the husband. The wife begins to suspect something is wrong with this bee-woman when she is spotted pollinating flowers in the garden. A swarm of bees ironically stings the wife to death, and the bee-woman offers herself to the husband. He ends up killing her, and the bees' master plan is foiled.

This second phase of nuclear fear and activism ended rapidly in 1963. In the 1962 Cuban Missile Crisis, when the United States and the Soviets went to the nuclear threshold and then pulled back, it was hoped that it would not happen again. The atmospheric test ban treaty of 1963, signed by the United States, the Soviet Union, and Great Britain created an atmosphere of joy that swept the nation. Almost instantaneously, the fear that had been growing since late 1945 literally went underground. This begins the third phase called the "Big Sleep" (1964-1979), when there appeared to be a decline in nuclear-related issues and cultural engagement.

Though there was a decline in the apparent cultural engagement with nuclear related themes at this time, it does not mean that nuclear fear stopped being a significant cultural force. As Robert Jay Lifton speculated, "the denial of nuclear awareness – like the massive underwater mountain chains that influence ocean currents, marine life, and

weather patterns in all kinds of hidden ways – affects our culture as profoundly as acknowledging it does" (Boyer).

Public opinion polls reflect this change to a great extent. A poll taken in 1959 found that 64 percent of Americans listed nuclear war as the nation's most urgent problem. By 1964, the number had dropped to 16 percent. Later it was even excluded from the surveys altogether. A study of the treatment of the nuclear arms race in American educational journals found the subject almost entirely ignored by the early 1970s. One sociologist studying student attitudes in 1973 concluded, "The atom bomb is a dead issue" (Lowther 77).

After 1963, the nuclear theme in TV and film dissipated, while still remaining to some extent in popular music and fiction. What was the reasoning for this "Big Sleep"? It was not explained by a sudden decrease in actual nuclear threat, though that would be the most heartening explanation. There was a loophole in the 1963 Test-Ban Treaty which both sides took advantage of, that allowed for the development of sophisticated techniques of underground testing.

The United States actually tested more weapons during the five years following the implementation of the Test-Ban Treaty than in the previous five. The "United States' stockpile of nuclear warheads and bombs never fell below twenty-four thousand during the years of the Big Sleep" (Boyer 356). Many innovations in nuclear technology actually came about during these years including the MIRV (Multiple Independently-targeted Re-entry Vehicle) – by which a single missile could carry up to sixteen independently-targeted nuclear warheads.

It was the *illusion* of diminished risk that primarily explained the nuclear apathy and neglect. Though the 1963 treaty did not stop tests altogether, it did put them out of sight. Putting the actual tests underground actually kept them from being reported on in newspapers and on TV. In this way, nuclear weapons and their arsenals became almost theoretical in the public's perception.

Secondly, atomic power was being looked at in a positive way. Power plants were going up from California across to Maine, and because of the profoundly positive promotion by the nuclear power industry, they were being seen in a hopeful light, at least in the beginning.

Thirdly, the idea of deterrence theory was complex enough that the average citizen thought it was too profound and multifaceted to understand. Secretary of Defense Robert McNamara articulated in 1967-8 that "the basic logic of deterrence theory was seductive: in a nuclear world, security lay in maintaining a retaliatory capacity so powerful and so invulnerable that no nation would dare attack us or our allies. To tinker carelessly with this arsenal, even to diminish it, could heighten rather than reduce the risk of nuclear war" (McNamara).

The final explanation for nuclear apathy during these years has to do with the Vietnam War. During the later 1960s, national consciousness was gripped by Vietnam. Up until May 1970, with demonstrations against the Cambodian invasion, the war was the focus of activist energy, both by advocates and opponents. The bomb was a potential menace while Vietnam was reality.

Nuclear awareness resurfaced in the late 1970s for two main reasons. In Western Europe, a dynamic anti-nuclear-weapons movement gained steam, focusing on NATO's

plans to deploy Pershing and Cruise missiles. Secondly, without much publicity, opposition to nuclear weapons had been spreading in grass-roots America. This movement surfaced in 1979 with the release of the film *China Syndrome* twelve days after the accident at Three Mile Island. The scenario of the movie is that a nuclear plant accident creates a mass of molten reactor fuel so hot that it burns through a steel reactor vessel, through the concrete foundation of the building, and through the earth, exiting the opposite side of its entrance. The events on Three Mile Island on March 28, 1979 are similar to the beginning of the *China Syndrome*. The accident involved equipment malfunctions, design related problems, and worker errors, which led to a partial meltdown of a reactor core, releasing a small amount of radioactivity to the off-site area. This brought sweeping changes including emergency response planning, reactor operator training, human factors engineering, radiation protection, and many other areas of nuclear power plant operations (U.S. Regulatory Commission). The incident on Three Mile Island and the *China Syndrome* film propelled and ignited renewed opposition to nuclear weapons.

By 1980, the fourth phase of the atomic era – the "Awakening" (1980-*Present*) - began and the threat of nuclear war was roused again. Ronald Reagan's military buildup, his elaborate and heavily publicized civil-defense programs, along with his plans of pushing the nuclear arms race into space provided the basis for the revived cultural awareness and activism beginning at this time. By late 1981, this shift in the national consciousness was becoming even more apparent. On Veteran's Day, November 11, students on college campuses turned out for panel discussions and speeches on the

nuclear threat. Rural New England towns passed resolutions demanding a halt in nuclear weapons production.

In April of 1982, colleges and towns observed "Ground Zero Week" with films, lectures, and the Race for Life, where runners set out from the center of a hypothetical nuclear blast site and ran out of town, passing mile markers that described the destruction at that point. The largest assembly of demonstrators in American history – over seven hundred thousand - gathered on June 12, 1982 and marched in New York City.

On March 29, 1982, *Time* featured a menacing image of a mushroom cloud on its cover. In one popular newspaper cartoon series, a bartender asks his depressed patron to stop talking about nuclear war until Happy Hour was over. The nuclear theme resurfaced in films such as *World War III, War Games, Countdown to Looking Glass, The Day After, Testament, The Road Warrior, Dark Circle, Radioactive Dreams, Threads*, and many others, dramatizing the way a conflict might occur.

Thinking about nuclear energy today sparks imagery that can be traced back to the first images of nuclear explosions and test sites. Humans have an inborn primal fear of extinction that has caused the reactions highlighted in these four main phases of cultural thought. Initially, during the "Atomic Intrusion" phase, the bomb brought a fear that the weapon keeping us safe and protected could soon be turned against us by our enemies, intruding on America's comfort level. Later, this fear became reality when the Soviet Union successfully created its own atomic weapon.

The second phase – the "Fallout" - revolves again around fear, but caused by something else - the invisible effects of radiation from the bomb. After the Cuban Missile Crisis of 1962 and the Test-Ban Treaty, atomic testing literally went underground

and out of the national consciousness during the "Big Sleep," only to reemerge in the early 1980s when Ronald Reagan began the debate over America's placement of new intermediate range missiles in Europe, initiating the "Awakening." Images have reflected society's emotions and reactions to nuclear technology throughout the atomic age. The web site that accompanies this text is a means to actually see the images I have referenced in this paper; the two are complimentary parts that together provide a structure to organize and analyze the historical development of American atomic culture during each of the four outlined phases.

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