The Asia-Pacific Journal: Japan Focus
In-depth critical analysis of the forces shaping the Asia-Pacific...and the world.

Radiation as Cultural Talisman:Nuclear Weapons Testing and American Popular Culture in the Early Cold War

Robert Jacobs

Introduction

On what appeared to be a normal day off the Pacific coast of California, Scott Thomas was relaxing on his boat and enjoying a peaceful day of leisure. His wife had just gone below to grab two beers when he noticed a strange fog approaching. He stood up, and for a moment, the fog enveloped him. The cloud passed, and when his wife returned, she saw that Scott seemed to be covered with glitter. The couple thought nothing of this until the impossible began to happen: Thomas began to shrink; he had been transformed into The Incredible Shrinking Man.[1]

1. Scott Thomas faces the fallout cloud from a Pacific Test that would shrink him in *The Incredible Shrinking Man* (1957)

Released in 1957 as public concern over radioactive fallout from nuclear weapons tests was rising, The Incredible Shrinking Man uses the device of a radioactive cloud from a nuclear weapons test as a plot twist to miniaturize an actor to the point where he has to fight with cats and spiders. He shrinks out of his job, out of his marriage, out of his life. His exposure to radiation has a devolutionary impact on him; he fights progressively smaller and smaller adversaries, until finally he becomes microbial. At no point do we see any form of destruction or horror; the only monster is the silent cloud of fallout. After Thomas innocently notices it in the opening scene of the movie, it slowly and inexorably dehumanizes and erases him.

The monster postulated in this movie was a real monster; its clouds blew across the United States even as the movie was in theaters. Moviegoers could consider the notion that the fog in the air when they left the showing of The Incredible Shrinking Man might just be that real, live monster.

Radiation embodies some of the most paradoxical iconography of the early Cold War.[2] Its abstract nature (invisible, odorless, tasteless), when combined with its true dangers (genetic mutation, cancers, death), allows it to evoke impossible worlds emerging from the ordinary one. Able to kill silently and invisibly at a distance and, by the late 1950s, widely documented to be present in mother's milk and human bones, radiation represented a threatening technological world that seemed to exist beyond reach of the senses.[3]

Radiation was a tool-in-trade for television, radio, movies, novels, and short stories as the strange force that authenticated any departure from normal space and time. It was the magic bullet of science-fiction plots: passing a clicking Geiger counter across a scene was as good as waving a magic wand; be it giant bugs or bug-eyed aliens living in a vast underground city, the clicking made any plot twist credible. Radiation came to symbolize a break in the normal structure of everyday reality; it was a narrative marker to indicate that a boundary had been crossed. From this moment on, anything was possible.

Radiation was often used in popular culture to signify that the future had arrived. But the envisioned future was, as likely as not, a dystopia where insects are our ultimate competitors and the scale of our own human violence is measured in biblical terms. In science-fiction movies, radiation is detected the instant before matters go awry. Not unlike the maxim about a gun seen on stage during a play— that it must go off by the third act—the clicking of a Geiger counter in a 1950s science-fiction film signified that something was about to go terribly wrong and that objects and events that might otherwise seem physically impossible (like invisible creatures that suck the brains out of unsuspecting humans) are about to happen.

2. Mickey Rooney and Robert Strauss play with a Geiger counter in *The Atomic Kid* (1954)

Radiation was the device employed in science-fiction plots to lend verisimilitude to the emergence of monsters, both prehistoric ones and the products of genetic mutation, and weapons testing was cited more frequently than nuclear war as the specific cause of the emergence of these monsters. The Nevada desert, the continental site of US nuclear weapons testing, became a symbolic landscape that granted access to our world to alien beings and forces. The evil contained in the human psyche could also draw on radiation to gain unnatural power in order to threaten masses of humanity and social stability.[4] By the late 1950s, nuclear radiation had acquired a cultural iconography that would be commonly used to legitimize departures from the bounds of reality in popular-culture texts.

Central to the history of nuclear popular culture is the history of nuclear- weapons testing. "The accidental awakening of the super-destructive monster, who has slept in the earth since prehistory, is, often, an obvious metaphor for the Bomb," wrote Susan Sontag in the early sixties. But beyond this destruction, she also cited the additional importance of radiation and weapons testing: "Radiation casualties—ultimately, the conception of the whole world as a casualty of nuclear testing and nuclear warfare—is the most ominous of all the notions with which science fiction films deal."[5]

From the Bikini tests in 1946 through the entire atmospheric-testing era (ending in 1963), nuclear weapons testing had a profound and multifaceted effect on American society and culture. In 1951, the Nevada Test Site (NTS) was established about 75 miles northwest of Las Vegas, and by the following year, Americans could watch tests on television beamed into their homes. These broadcasts helped to establish a visual geography of the test site, which eventually became the backdrop for countless science-fiction films.

During this period, the United States tested hundreds of nuclear weapons in the atmosphere, both in Nevada and in the Pacific Ocean at the Pacific Proving Ground (PPG) in the Marshall Islands. As a rule, less powerful (smaller-fission) weapons were tested in Nevada, while the stronger (larger-fusion) bombs were detonated at Eniwetak and Bikini Atolls in the Marshalls. The Pacific weapons had the more immediate and vivid effects on the health of human populations that found themselves downwind. In particular, it was the 1954 Bravo shot at Bikini Atoll, with its immense fallout impact that would render the land on Bikini and four neighboring atolls uninhabitable to this day. The world was quickly becoming highly radioactive and people did not need to be aware of the fact of a nuclear explosion to end up as a fallout casualty.

This article examines the iconography of radiation in popular culture in the United States during the atmospheric testing period. I show that during this time and forever after, radiation functioned as a cultural talisman for the suspension of previously fixed laws of nature and society. It became an emblem of the dislocation of the imagined future of human society with its fixed past. Radiation became a signifier of the rupture in narratives of the continuity of human history that many imagined nuclear weapons to mark. This iconography emerged out of, and was embedded in, nuclear weapons testing. The effects of nuclear detonations are typically described as blast, heat and radiation. I argue that a fourth and elemental effect, one that has rarely been understood, was the effect of narrative discontinuity.

Bravo: Putting Fallout On the Map

Nuclear radiation was and remains one of the most potent icons of the atomic age. At first an abstraction associated with the horrors of a nuclear war, during the atmospheric testing era (1945-1963) radiation became a very real part of the lives of Americans, carried into their homes and minds by wind and rain in the form of radioactive fallout from nuclear weapon testing. As nuclear weapon testing increased in the 1950s, and as thermonuclear weapons began to be tested, higher and higher levels of fallout reached deeper and deeper into the lives, and bodies of Americans, and of people all around the world.

Fallout was not discussed in detail in the early rush of articles and books about nuclear weapons after 1945: it forced its way into public consciousness through a series of events that devastated the health of those involved. On November 1, 1952, the first United States test of a thermonuclear weapon, or H-bomb (the "Mike" shot of Operation Ivy, exploding approximately 10 megatons) was carried out on Elugelab Island, in the Pacific Ocean.

The mushroom cloud from the Mike shot

Elugelab, a tiny island that was part of Eniwetak Atoll, was totally destroyed when the explosion created a crater about one mile in diameter and 175 feet deep at its deepest point. The Mike shot had required several buildings to house the cryogenics necessary to cool the thermonuclear fuel to a stable point, weighing a total of 200,000 pounds.[6] The Atomic Energy Commission (AEC) was successful at keeping information about the scale of the test secret from the press and public.

Two years later, the first shot of the Castle series (1954), the Bravo shot located on Bikini Atoll, tested a cryogenics-less (dry) weapon that weighed only 2,000 pounds and was deliverable from an airplane. The Bravo shot would prove to be so immense that it was impossible to contain information about its destructive power. Whereas the Atomic Energy Commission (AEC) had been able to limit knowledge of the fact that the Mike shot was a test of a hydrogen weapon, the thermonuclear nature of the Bravo shot was apparent to the whole world.[7] Bravo yielded an explosive force of 15 megatons of TNT, a force one thousand times more powerful than existing fission weapons and at least twice as powerful as the weapon's designers had predicted.[8]

3. The Bravo nuclear device before detonation

Beyond the immense yield of the blast of Bravo, it immediately became apparent that this detonation had produced vast amounts of radioactive fallout. The US military Joint Task Force 7 (which conducted the tests) saw itself compelled to raise the "permissible" level of exposure for its personnel simply because the participants had already received the higher dose.[9] Since staging grounds on nearby islands had to be abandoned because of high radiation levels, all operations had to be conducted solely from ships, impeding proper procedures. The ships were overcrowded from taking on Task Force personnel who had been evacuated from the atolls.[10] Radiation levels on atolls to the east of Bikini reached such alarming levels that the Task Force evacuated their 264 residents.[11] Many of the islanders (who had been about 100 miles from Bravo's epicenter) suffered radiation sickness, with such effects as loss of hair and low white blood cell counts, hemorrhages, and skin lesions.[12] The New York Times carried its first article about the exposure of the 264 on March 12, 1954.[13]

4. Bravo test at Bikini Atoll (March 1, 1954)

Two days later the Japanese tuna trawler known as the Daigo Fukuryu Maru (Lucky Dragon # 5) pulled into its slip in the Japanese port town of Yaizu. On March 1, the day of the test, the ship had been at anchor over 90 miles east of ground zero (well outside the 50-mile exclusion zone set up by the Joint Task Force) yet it had been exposed to very heavy amounts of fallout from the test. All 23 members of the crew were ill and one later died from radiation exposure.[14]

The Bravo test, with its terrible toll on human health and life, marked the end of the successful containment of the issue of radioactive fallout that the United States government had been able to maintain for the first nine years of the atomic age. Throughout its coverage of the Bravo incident in the spring of 1954 the New York Times still put the word "fall-out" in quotation marks. Prior to the Bravo test, fallout, when mentioned in the press, was generally referred to as "residual" or "lingering" radiation.

5. The Lucky Dragon #5 in 1954

The first article to mention radioactive fallout inside the United States was a report of downwind fallout from the Trinity test in New Mexico in 1945. Newsweek magazine ran a short piece on November 12, 1945 reporting that, "mysterious radioactivity was affecting photographic film at an Eastman Kodak plant." The article explained that the film had been affected by "radioactive strawboard" used to make shipping boxes. The boxes used "straw cut in Illinois on August 6, just 21 days after the explosion of the first atomic bomb in New Mexico" (no mention is made of the fact that this was also the day that Hiroshima was bombed). The article stated that "radioactive residues" had "fallen" on the field of straw.[15]

The American public became aware of dangerous levels of radioactive fallout after the Bikini tests in 1946. David Bradley's influential 1948 record of Operation Crossroads, No Place to Hide, was essentially a book about fallout. "What happened at Crossroads was the clearest measure yet of the menace of atomic energy. Less spectacular perhaps than Hiroshima and Nagasaki, the Bikini tests give a far clearer warning of the lingering and insidious nature of the radioactive agent that makes it such an ideal weapon for use on civil populations."[16] This perspective echoed more official pronouncements: Admiral William Blandy, the head of the Joint Task Force that conducted the tests, was quoted in Time two weeks after testing had concluded with the single phrase, "It's a poison weapon." A picture below the quote showed sailors trying to scrub radioactivity off of an Operations Crossroads ship,

which remained contaminated, "Like the blood on Bluebeard's key."[17]

Bradley described a medical decision he had confronted as a physician and radiological monitor for Operation Crossroads. A sailor in his late teens was sent to see Dr. Bradley because he had been cut by a piece of radioactive cable. "The sailor told us the name of the ship; it was one of the beached vessels and was moderately contaminated on deck. 'We was trying to get her clear for the trip to Kwaj. I was heaving in on one of the cables when it broke and tore my hand. Don't seem too bad, but one of the Geiger men was there and he sent me right over here.'" Bradley explained to the sailor that, "in laboratories and plants where people are working with purified plutonium there is a policy which requires immediate high amputation for anyone in a similar situation." The sailor solemnly nodded, "You're the doctor." This harrowing incident painted a grim picture of "lingering" radiation as capable of contaminating a person long after a nuclear explosion, and made clear that the contamination was dangerous enough to require removing a limb to stave off the possibility of a more severe fate.[18]

Radioactive contamination claimed more than fishermen aboard ships at Bikini and limbs from US servicemen. Time reported in 1947 that "At one university, two entire buildings have been so radioactivated that they can no longer be used for atomic work; at another center, a researcher in one afternoon infected a laboratory so badly that the walls had to be taken down and replaced."[19] Radiation seemed infectious, insidious, and persistent.

In the frenzy following the first Soviet nuclear weapon test in late 1949, military speculation on the possible use of radiological poisons as a weapon separate from the use of actual nuclear weapons began to find expression in the popular press. "An invisible dust of radioactive 'death sand' could spread over cities of the earth and kill their populations by radioactivity without the noisy warning of an atomic bomb," declared the Science News Letter. Leaving nothing to the imagination, the article explained that "Very fine sand would be coated with these radioactive poisons and spread very thinly over the area where it is desired to wipe out life." That same week Time reported that, "Less than a ton of death sand, evenly distributed, would make Manhattan a deathtrap."[20]

Such speculation was fairly rare before 1954, but the Bravo test put fallout on the map: in the years immediately after the test thousands of articles a year would appear with the word "fallout" in the title. The test itself was a source of mysterious and powerful stories. "Whether the public should be told the truth about the devastating fall-out from the H-bomb explosions is the subject of a bitter behind-scenes argument between the AEC and the Civil Defense Administration," cautioned "The Inside Story" in Newsweek on November 8, 1954, "One estimate now is that the H-bomb tested last March at Eniwetok rendered uninhabitable an elliptical area of 4,000 square miles—nearly the size of Connecticut—downwind from the blast."[21]

The scale of the Bravo fallout was told in personal terms in the Saturday Evening Post in July 1957, in a story titled, "We Were Trapped by Radioactive Fallout," by Dr. John C. Clark, the Commander of the Firing Party for the Bravo test. Clark told how he and eight others in the control room for the Bravo test, located in a sand-covered bunker about a dozen miles away from ground zero, had to take shelter for about twelve hours in a small room in the bunker when soon after the blast radiation readings in the main room in the control bunker spiked to dangerously high levels.

Radiation levels outside of the bunker were substantially higher still so the men were unable to escape since no ship or helicopter could come close (in fact they were all in the process of moving further back because of the fallout). The men in the bunker determined the tiny communications room had the lowest levels of radioactivity and they barricaded themselves in to wait for the radiation levels to fall sufficiently to execute a rescue. "We were not exactly a happy bunch as we sat around in that small back room. We had been forced to turn off the air conditioner because it brought in fallout particles from outside. The entire building soon got hot and sticky." A little over an hour later, "our generator began failing and the lights gradually went out, leaving us in darkness." This was around 8:00 in the morning—help finally arrived at 5:30 in the afternoon. The men came out of the communications room to determine if the radiation levels outside had made it safe enough to dash to a rescue helicopter. Clark added the ghostly detail that when they came out, and then ran to the rescue helicopters, "To keep the 'hot' dust off of our bodies, we wrapped ourselves completely in bed sheets, cutting holes only for our eyes." The next day, writes Clark, they found out that the radiation levels just outside their bunker had been lethal.[22]

While many AEC-friendly articles dismissed the danger of fallout in the mid-fifties, there were countless references to fallout as unspeakably dangerous. Fallout was referred to as, "the ultra-modern horror, radioactive smog," and as "fantastically poisonous radioactivity."[23] The story of how fallout was impacting the people who lived downwind from the Nevada Test Site was broken open by journalist Paul Jacobs in his seminal article, "Clouds from Nevada," published in The Reporter in May 1957. Jacobs' article told of cancers and other deadly health problems becoming endemic among the down-winders. He told of seven-year old Martin Bardolini dying of leukemia as a result of exposure to fallout, of people who had lost their hair, and of the residents of St. George, Utah, who had been "continuously exposed for sixteen days to atmospheric contamination." He wrote about massive die-offs of sheep and cattle after fallout clouds from nuclear tests had passed over their grazing lands, and of "bead-like particles" of fallout raining down on local ranches.[24]

By the mid-fifties, "residual" and "lingering" radiation had given way to almost universal use of the word "fallout." Maps were printed in magazines and newspapers showing the paths of fallout clouds from tests in Nevada over the continental United States. The Bravo test had opened the eyes of Americans about the dangers of nuclear testing, and how radioactive their world was becoming—what they would see with these new eyes would very much surprise them.

Behind the Radioactive Curtain: Monsters and Aliens

Surrounded by army troops aiming flamethrowers into the burning egg chamber where the last of the terrifying giant ants lay dying, the heroes of the 1954 movie Them! considered the origin of the mutants: "If those monsters got started as a result of the first atomic bomb test in 1945, what about all of the others that have been exploded since then?"[25] This question, expressing Americans' anxiety about atomic testing during the mid-1950s, was to be answered in abundance by Hollywood filmmakers.[26]

6. A giant ant from *Them!* (1954)

7. The Army torches some giant ants in *Them!*

Between 1945 and 1965, over five hundred science-fiction films, many depicting such threats as the giant ants in Them! were released to the theatergoing public.[27] On film, the atomic age was filled with regenerate monsters and invading aliens. In these movies, radiation functioned as a catalyzing element, legitimizing the birth into our world of evil and destructive forces. Whether these threats materialized as monsters generated or regenerated from beneath the ocean, the desert, or the polar icecaps, or as invading aliens who sought to destroy the Earth, radiation functioned as their life-giving source: the threat either was born out of radiation or was feeding off it. Atomic test sites, nuclear power plants, and atomic labs were common science-fiction movie settings.

Atomic monsters of the 1950s, having passed through a baptism of radiation, possessed a license to terrorize and were resistant to conventional military weapons. Two types of monsters were used in movies to typify the threat: the first kind were the monsters portrayed in films like Godzilla, in which dormant primordial threats were reawakened, often by the testing of an atomic bomb; the second set of movies postulated the release of radiation from earlier atomic tests, which typically caused a genetic mutation in nature and resulted in a monstrous and unnatural threat to the human race from some other species; these latter are know as the "giant bug" movies.

8. *Gojira!* Godzilla (1954)

The first type of primordial monsters usually targeted cities, while the giant bugs tended to stay close to atomic facilities. Both of these examples, Godzilla and Them!, were released in 1954, following the publicity from the Bravo test and its subsequent radioactive contamination of islanders, fisherman and servicemen.

Honda Ishiro made the classic film Gojira in Japan and released it in the fall of 1954.[28] The American director Terrell O. Morse later shot separate footage of the American actor Raymond Burr, which was spliced into an edited version of the Japanese original, and this version was released in the United States in April 1956 as Godzilla! King of the Monsters.[29] An H-bomb test was the event that freed Godzilla from the ocean floor. The first hint we get that something monstrous is afoot is when a Japanese fishing boat bursts into flames on the high seas and sinks; the use of this image just after the tragedy of the Daigo Fukuryu Maru became known in Japan was, according to Honda, deliberate.[30] Godzilla, an ancient dinosaur-like monster, emerges from the water and eventually trashes most of Tokyo. Godzilla emits radioactive-fire breath, and as he stomps through Tokyo, he blazes a radioactive trail, burning Japanese boats and torching cities just as bombs do. The scenes that depict Tokyo after the destruction refer both to the nuclear devastation of Hiroshima and Nagasaki and the 1945 firebombing of Tokyo and every other Japanese city with a population in excess of 50,000 people. The sudden presence of this monster is legitimized by its birth in an atomic explosion; no further explanation is necessary.

In The Beast from 20,000 Fathoms (1953), a dinosaur frozen under the North Pole is thawed out by an atomic test, freeing it to swim along the coast to march on New York City. In It Came from Beneath the Sea (1953), an octopus made radioactive in an H-bomb test, grows to giant size, and attacks San Francisco.[31] Each of these monsters goes through an atomic rebirth in order to regenerate into this world and threaten its cities. Each is able to accomplish this rebirth as the result of weapons testing, not through the general destruction of a full-scale nuclear war. This plot device highlights the growing fears of Americans (and Japanese) of radioactive contamination during this period of intensive atmospheric testing—fears both connected to and separate from fears of an actual nuclear attack.

The first and most successful of the giant-bug movies of the 1950s was Them![32] Released in June 1954, the movie hit theaters just after the newspapers were full of stories about radioactive fish from the Bravo test and the sickness of the Fukuryu Maru crew and the Pacific islanders.[33] Them! is the story of a giant ant colony that formed on the desert floor at the Trinity site as a result of the radiation unleashed by that first atomic test. The giant ants, which Spencer Weart describes as "the size of buses," had to be destroyed at any cost; their very existence threatened all humankind.[34] It is interesting to note that though much of Them! takes place in New Mexico, the desert sets are filled with Joshua trees, which do not grow in New Mexico but are native to the area of the Nevada Test Site.

The giant ants are not in themselves evil; it is merely that when normal ant behavior is enlarged on such a monstrous scale, the change upsets the balance of nature, ultimately threatening human society. This theme is true of almost all the giant–bug movies, such as Tarantula, The Deadly Mantis, and The Black Scorpion.[35] Because of their radioactive birth, these monsters are inherently stronger and more deadly than they were in their pre-mutant form, and this unnatural strength and size makes their normal behavior unnaturally violent. In the sense that monsters like Godzilla represent a regeneration of primordial forces of destruction, the giant ants of Them! represent the birth of a new and modern form of monster: a future monster that represents a man-made shift in the natural balance.

9. The "brain and spinal-chord" monster in *Fiend Without a Face* (1958)

Among the most powerful indictments of our own knowledge of atomic energy was the 1958 Canadian movie, The Fiend Without a Face. In this film, the monsters that threaten human society are our own brains. The threat originates in the mind of Professor Walgate, a scientist. Attempting to move objects with his mind, when his equipment is struck by lightning, Walgate succeeds. This burst of energy allows his thought to take on existence independent of his brain. This individuated thought begins to tap into the permanent energy source of an "atomic pile" that powers a nearby "atomic radar" station. Soon hundreds, if not thousands, of these thoughts have taken form by using atomic power as an energy source. The monsters, invisible through most of the film, begin to kill some of the local residents. The manner by which they kill is particularly instructive; they suck out their victims' brains and spinal cords through two puncture wounds at the base of the skull; one of the townsfolk describes them as "mental vampires." The invisible monsters increase the energy output from the pile, "feeding," as it were, and become visible: they are brains attached to spinal cords that they use to propel themselves like inchworms. Under siege by thousands of these monsters, the military heroes of the film blow up the pile's control room, killing the faceless fiends.[36]

The symbolism of this movie is boldly condemning of even the knowledge of atomic energy: here the monsters that threaten society are actually the thoughts of scientists (their physical form is that of brains). These thoughts directly feed on atomic energy to exist, gain power, and kill. These thoughts are given a destructive ability that is independent of the will of the scientist in whose head they originate. The movie states simply: atomic-powered scientific thought is monstrous and evil. Our brains have become our own worst enemies.

For alien invaders in fifties sci-fi films, radiation often functions as the marker of an access point to the earth. Alien invasions frequently set up home bases near atomic facilities. Often it is these same facilities that are the targets of the invasion, the aliens somehow being desperate for new sources of power or even desperate to kidnap atomic scientists for their prized and specialized knowledge.[37]

Whether it was atomic energy or weapons that gave these monsters or aliens authority to enter into our world, surely the Nevada desert was where they would enter. In Killers from Space (1954), alien invaders have set up shop in caves beneath the Nevada Test Site and are feeding off the energy released by each bomb blast. They use this energy, and the energy from an attached atomic-power-generating station, to grow gigantic bugs and animals, which they intend to set loose in order to take over the planet. These aliens resurrect an atomic scientist (Peter Graves), whose plane they have caused to crash immediately following an atomic test, because they are desperate to obtain his knowledge about upcoming tests. Eventually, Graves destroys the aliens and their giant mutant army by cutting the power flow from the atomic plant for ten seconds. This interruption causes the aliens' base to explode in a nuclear blast, complete with mushroom cloud (borrowed from film of the second 1946 Bikini test).[38]

10. An alien from *This Island Earth* (1955)

In This Island Earth (1955), nuclear scientists are again the targets of invading aliens as the invaders are in need of experts to help them refuel their dying planet. Targeted scientists are first contacted by being sent the schematics to a sophisticated device that can communicate and transport matter. Once the Earth scientists have constructed the device, the aliens begin to communicate with them and enlist their help. In this instance, the natural technological curiosity of the nuclear scientists provides an entry point to admit alien forces into this world.[39]

In futurist fiction, aliens who threaten to take over Earth because of their need for atomic power were invited here because we had crossed the nuclear threshold. Rather than liberating us, our achievement of this level of power has made us the target of intergalactic violence. Atomic power and weapons have opened a doorway through which terrors from far-off worlds are given license to destroy us. These aliens were invariably portrayed as technologically more sophisticated extensions of ourselves: they, too, relied on violence to achieve their goals.

All such conjectures seemed natural because by the mid-1950s, the Nevada desert had become a mythic zone where supernatural events could be expected to occur. In The Amazing Colossal Man (1957), a man who walked onto the Nevada Test Site as a "plutonium bomb" was being tested, becomes a giant and then attacks Las Vegas.[40] In Attack of the 50-Foot Woman (1957), a woman is turned into a giant by an alien whom she meets in the Nevada desert.[41] Many of these movies, like Killers from Space, begin with a shot which pans across the desert landscape, always showing the Joshua trees that had come to symbolize the test site. To Americans in theaters everywhere, the image of a Joshua tree silhouetted in the Nevada desert had become a cultural marker announcing that the supernatural was just around the corner.

Cold War Equivalency: Political Fallout in Popular Culture

Because of its unique characteristics and profound dangers, nuclear icons played a fascinating part in fueling a political critique of the Cold War that was expressed in the coded language of popular culture. Science-fiction narratives, both in fiction and in film, pioneered this use of popular-culture texts as effective tools for criticizing the Cold War, presenting ideas that could not be safely expressed in more mainstream channels of culture and discourse.

One of the most subversive political perspectives subtly expressed through popular culture was the idea that there was no difference between the United States and the Soviet Union: both could be seen as belligerent superpowers whose actions threatened humanity. From this perspective, the bullying of smaller countries into bipolar "blocs" and the commitment of the wealth of both societies to an endless arms race made the two rivals seem virtually interchangeable.

While scientists and politicians would have put themselves in danger had they openly articulated such a critique, Americans accepted the idea when they found it expressed in the popular 1951 science-fiction film, The Day the Earth Stood Still.[42] Often described as a Christian allegory, in which the peaceful and Christ-like Klaatu (who takes the Earth name Mr. Carpenter) descends from the heavens to deliver the new law of nonviolence to the barely mature earthlings, The Day the Earth Stood Still contained radical messages folded into the very structure of the film's narrative.[43]

11. Klaatu and Gort in *The Day the Earth Stood Still* (1951)

Klaatu sees only a brutish and violent species; the differences so essential to Cold War bilateralism were absent when he looked at us. In a telling scene, the chief of staff to the American president who visits Klaatu in the hospital after he is wounded (Klaatu did the United States a favor by landing in Washington, DC) asks the alien why he has come to Earth. Klaatu explains that his message is for the leaders of all the nations of the world and that they must gather the following day in order to receive it. The American shrugs: "I'm afraid that given our present political situation, that is quite impossible." He is, of course, alluding to the tensions of the Cold War, which in 1951 made an easily convened meeting of Stalin and Truman unthinkable. Klaatu seemed mildly amused. "I do not care about your petty political squabbles," he chides. To characterize the Cold War as a petty political squabble in 1951 was a radical critique of the Cold War. Klaatu informs the human race that those beings living on other planets had no interest in humans so long as they remained technologically unsophisticated. But once they had developed nuclear weapons, and were therefore a threat to other planets, they were now being included in an intergalactic peacekeeping program in which giant robots would destroy any planet that continued to manufacture nuclear weapons. Klaatu showed us that in a world armed with nuclear weapons, all people, regardless of nationality, shared a single, common destiny.

The Day the Earth Stood Still expresses a progressive assessment of the Cold War, in which the violence of human society is the enemy of all beings, Earthborn or not; but critiques of this sort were by no means limited to the left. The 1952 B-movie Red Planet Mars expressed a right-of-center critique of the Cold War that equally demonized both communism and capitalism, the Soviets and the Americans.[44] In Red Planet Mars, an American scientist (the ubiquitous Peter Graves) receives radio signals from Mars; these are intercepted as well by a corrupt Soviet scientist. The messages, at first aimed at the United States, have the effect of undermining capitalism by suggesting that Mars is a planet of abundant energy and food. Declaring that these technologies can easily be transferred to Earth, the messages from Mars cause the bottom to drop out of the energy and food markets. The American economy goes into a tailspin, and the film draws its audiences along with the suspicion that perhaps the messages are coming from the evil Soviet scientist. Suddenly, the Soviet Union receives messages that question the atheist nature of its society. These messages are phrased as though they were coming directly from God. The effect on Soviet society is to cause the citizens to rise up against their Communist leaders and reestablish the Russian Orthodox Church. In the end, the Soviet scientist tries to convince the American scientist that he was the source of all of the messages and that he hates both societies. But as they all die together in the climactic final scene, a further message arrives, confirming that God was the source of the messages all along.

While both these films used Christianity as a vehicle for critiquing the Cold War, it is striking that both used science fiction to articulate that opinion. Science fiction, with its inherent suspension of the rules of the real world, allowed the audiences of these films to gain a perspective on the world of the Cold War, one not reado;u found in mass culture. It allowed Americans to step back and see their moment in history from a "big-picture" vantage point, recognizing problems in which they had previously been too caught up to see clearly.

12. Antonio Prohias's black and white spies in "Spy Vs. Spy" in *Mad Magazine* (1960s)

The early 1960s gave children a hint at the equivalence of the United States and the Soviet Union in the comic strip "Spy Vs. Spy," drawn by Antonio Prohias, that ran in Mad magazine. The black spy and the white spy, an obvious reference to the dualism of the Cold War, were neither good nor bad. They were interchangeable. They were equivalent.[45]

The notion that the United States and the Soviet Union were equivalent expressed the belief that it was the will toward violence that was the real enemy. But while social scientists debated the ways to understand and eradicate this human capacity, popular culture drew it out to its logical conclusions, so that the characteristic itself could be instructive to the viewer without the attendant

violence of the actions.[46] In this manner, popular culture was able to criticize the pathologies of nuclear war without feeling compelled to transform them. Similarly, much of the science fiction of the early Cold War period that is set in the distant future portrayed Earth as a unified planet with a single government, accomplishing in fiction what seemed impossible to accomplish politically.[47]

Critiques of the Cold War were not exclusive to science-fiction texts; they were also found in literature expressing antinuclear-weapon and progressive sentiments, but science fiction movies and novels had the ability to reach a far larger audience across a much broader spectrum of society, including teens and children.[48] With the advent of nuclear weaponry, science fiction had come to play an essential and informing role in American political culture.

Conclusion

Radiation was a revolutionary concept to most Americans when they first became aware of the clouds blowing over their heads in the wake of Hiroshima and Nagasaki. Popular culture in a nuclear age provided a glimpse behind the veil of the atomic future: an Alice in Wonderland venture beyond the present reality and into the radioactive landscape. Radiation became a favorite plot element in popular-culture texts that embodied the complex contradictions of the atomic age. In plot or setting, radiation legitimized breaks in normality. This talismanic quality, of separating normal from supernatural space or time, expressed both aspects of radiation's physical nature (the invisible ability to transmute one element to another, the ability to affect action at a distance), and aspects of its effect on society (marking a potential end time or a golden era of peace and plenty). As nuclear-weapons tests moved underground in 1963, so too did the heightened public awareness of radiation, and it became less frequently invoked in popular culture. But just like that cloud Scott Thomas rose to consider from the deck of his boat in The Incredible Shrinking Man, the actual dangers were not really gone, just once again imperceptible to the senses.[49]

It was a uniquely postmodern world that unfolded every day; at the same time that fallout was killing the sheep of downwind ranchers in Nevada and Utah by the thousands, moviegoers across America could watch aliens, intent on destroying humanity, breeding and raising hordes of giant bugs and reptiles underneath the Nevada desert.[50] Wearing 3-D glasses and striding boldly into the future, Americans seemed as ready to explore this land of tomorrow as they had been to fund its creation with their tax dollars. As Americans got into their cars and headed westward to take the kids to Disneyland, radioactive clouds left Nevada and drifted eastward, seeding the future with monsters, mutants and mystery.

This is a revised, expanded and illustrated version of an article that appeared in the June 1, 2012 *Culture and Conflict Review*

Robert Jacobs is an associate professor at the Hiroshima Peace Institute at Hiroshima City University. He is the author of *The Dragon's Tail: Americans Face the Atomic Age* (2010), the editor of *Filling the Hole in the Nuclear Future: Art and Popular Culture Respond to the Bomb* (2010), and co-editor of *Images of Rupture in Civilization Between East and West: The Iconography of Auschwitz and Hiroshima in Eastern European Arts and Media* (2012-forthcoming). His book, *The Dragon's Tail was* released in a Japanese language edition by Gaifu in 2012. He is the principal investigator of the *Global Hibakusha Project*.

Recommended citation: Robert Jacobs, "Radiation as Cultural Talisman: Nuclear Weapons Testing and American Popular Culture in the Early Cold War," The Asia-Pacific Journal*, Vol 10, Issue 25, No. 4, June 18, 2012.*

Articles on related subjects

•Mick Broderick and Robert Jacobs, Nuke York, New York: Nuclear Holocaust in the American Imagination from Hiroshima to 9/11

• Oishi Matashichi and Richard Falk, *The Day the Sun Rose in the West. Bikini, the Lucky Dragon and I*

•Robert Jacobs, The Atomic Bomb and Hiroshima on the Silver Screen: Two New Documentaries

•Robert Jacobs, Whole Earth or No Earth: The Origin of the Whole Earth Icon in the Ashes of Hiroshima and Nagasaki

• Nakazawa Keiji, Hiroshima: The Autobiography of Barefoot Gen

•Yuki Tanaka, War and Peace in the Art of Tezuka Osamu: The humanism of his epic manga

•Michele Mason, Writing Hiroshima and Nagasaki in the 21st Century: A New Generation of Historical *Manga*

•Yuki Tanaka, Godzilla and the Bravo Shot: Who Created and Killed the Monster?

Notes

1. The Incredible Shrinking Man, dir. Jack Arnold, prod. Albert Zugsmith (Universal Pictures, 1957).

2. Spencer Weart deals extensively with fallout and radiation in Nuclear Fear: A History of Images (Cambridge: Harvard University Press, 1988). See also Paul Boyer, Fallout: A Historian Reflects on America's Half-Century Encounter with Nuclear Weapons (Columbus: Ohio State University Press, 1998). There is also an extensive literature on the political impact of fallout. Carolyn Kopp argues that the origins of the fallout debate lie in the separations between the sensibilities of different fields, with the scientists most likely to oppose nuclear testing being biologists, whose priorities were very different from those of politicians like AEC Chairman Lewis Strauss. See Carolyn Kopp, "The Origins of the American Scientific Debate Over Fallout Hazards," Social Studies of Science 9:4 (1979): 403-422. See also Allan M. Winkler, Life under a Cloud: American Anxiety about the Atom (Urbana: University of Illinois Press, 1993); Howard Ball, Justice Downwind: America's Atomic Testing Program in the 1950's (New York: Oxford University Press, 1986).

3. Ralph E. Lapp, Kill and Overkill: The Strategy of Annihilation (New York: Basic Books, 1962): 63; Samuel Glasstone, ed., The Effects of Nuclear Weapons, revised edition, (Washington, DC: Government Printing Office, April 1962): 614-15.

4. Sontag, Dowling, and others interpret the artistic response to the atomic bomb in terms of personal psychology, much as the social-science community has done. They locate the social violence expressed in the arms race within the personal human subconscious. Sontag believed that one reason for social violence on this scale is the human need to let out cruel and amoral feelings. See Susan Sontag, "The Imagination of Disaster," in Against Interpretation (New York: Dell Publishing, 1961): 212-28; David Dowling, Fictions of Nuclear Disaster (Iowa City: University of Iowa Press, 1987): 3. Further expression of the Cold War as psychological dysfunction can be found in Terrence Holt, "The Bomb and the Baby Boom," TriQuarterly 80 (Winter 1990-91): 206-17. Holt writes of the bomb, "it articulates an imaginary pattern of cause and effect in which the potential victims of nuclear weapons,

the babies of the boom, are made to seem responsible for their plight. Ultimately, . . . this particular equation of babies with the bomb suggests that the nuclear standoff of the past forty years has answered needs in our culture that we are unwilling to admit, and may be incapable of giving up" (207). Weart also ascribes a fundamentally psychological nature to the imagery surrounding atomic weapons.

5. Sontag, "The Imagination of Disaster," 31.

6. Federal Civil Defense Administration, Facts about the H Bomb (Washington, DC: US Government Printing Office, 1955).

7. In fact it was the undeniable awareness of the thermonuclear component of the Castle-Bravo shot that prompted the AEC to finally admit publicly that the Mike shot had been thermonuclear, see Facts about the H Bomb.

8. Herbert York, The Advisors (Palo Alto, CA: Stanford University Press, 1976): 73-87; Richard G. Hewlett and Jack M. Holl, Atoms for Peace and War 1953-1961, 172-75.

9. See document, Request to Increase Maximum Exposure (EF3/7.3/32cmf), at http://www.aracnet.com/~pdxavets/b4519007.gif.

10. Hewlett and Holl, Atoms for Peace, 172-75.

11. The fallout cloud created by the Bravo shot extended over 200 miles to the northeast of ground zero, creating a lethally contaminated area of 7,000 square miles of the Pacific. The AEC calculated that many of the islanders (who had been located about 100 miles from the epicenter of the blast) were exposed to radiation at levels equal to those who had been 1.5 miles away from the epicenter of the Hiroshima blast. See Samuel Glasstone, ed., The Effects of Nuclear Weapons, (Washington DC: US Government Printing Office, 1962): 460-64.

12. Catherine Caufield, Multiple Exposures, (New York: Harper and Row, 1989): 112-13.

13. New York Times, March 12, 1954, 1.

14. The story of the crew of the Daigo Fukuryu Maru (its full Japanese name, meaning Lucky Dragon No. 5) is told in Ralph Lapp, The Voyage of the Lucky Dragon (New York: Harper and Brothers Publishers, 1958): 55-88; Oishi Matashichi, ***The Day the Sun Rose in the West. Bikini, the Lucky Dragon and I is the autobiographical account of a crew members (Honolulu: University of Hawaii Press, 2011)***. American press coverage can be charted in the New York Times from March 17, 1954, through Eisenhower's press conference on March 31, 1954.

15. "The Active Straw," Newsweek, November 12, 1945, 50.

16. David Bradley, No Place to Hide (Boston: Atlantic-Little, Brown Books, 1948): xiii.

17. "Problems of the Age," Time, August 19, 1946, 90.

18. Bradley, No Place to Hide, 134-5. The incident occurred a month after the conclusion of the tests. Bradley did not amputate the sailor's arm, and there is no further mention of the soldier's health.

19. "Too Hot to Handle," Time, November 10, 1947, 82.

20. "'Death Sand' Kills Subtly," Science News Letter, August 5, 1950, 83; "Death Sand," Time, August 7, 1950: 50.

21. "The Inside Story," Newsweek, November 8, 1954, 17.

22. John C. Clark, as told to Robert Cahn, "We Were Trapped by Radioactive Fallout," Saturday Evening Post, July 20, 1957, 19, 69-70.

23. Helen M. Davis, "Hazards of Smog," Science News Letter, May 7, 1955, 299; "Atomic Light on the Desert…" Newsweek, March 21, 1955, 31.

24. Paul Jacobs, "Clouds from Nevada," The Reporter, May 16, 1957, 10-16.

25. Them! dir. Gordon Douglas, prod. David Weisbart (Warner Brothers, 1954).

26. See Joyce A. Evans, Celluloid Mushroom Clouds: Hollywood and the Atomic Bomb (Boulder, CO: Westview Press, 1998); Jerome Shapiro, Atomic Bomb Cinema: The Apocalyptic Imagination on Film (New York: Routledge Press, 2002); Wheeler Winston Davis, Visions of the Apocalypse: Spectacles of Destruction in American Cinema (London: Wallflower Press, 2003).

27. Patrick Lucanio, Them or Us: Archetypal Interpretations of Fifties Alien Invasion Films (Bloomington: Indiana University Press, 1987): 1. See also Mick Broderick, Nuclear Movies: A Filmography (Northcote, AU: Post-Modem Publishing, 1988): 6.

28. Gojira, dir. Honda Ishiro, prod. Tanaka Tomoyuki (Toho Films, 1954).

29. Godzilla! King of the Monsters! dir. Honda Ishiro and Terrell O. Morse, prod. Terry Turner and Joseph E. Levine (Toho Co.,1956).

30. In the movie, fishermen are shown washing up on shore with "strange burns," much like events involving the Daigo Fukuryu Maru, which drifted into harbor with a crew suffering from radiation sickness. See, Yuki Tanaka, "Godzilla and the Bravo Shot: Who Created and Killed the Monster?" in, Robert Jacobs, ed., Filling the Hole in the Nuclear Future: Art and Popular Culture Respond to the Bomb (Lanham, MD: Lexington Books, 2010): 159-170; Chon Noriega, "Godzilla and the Japanese Nightmare: When 'Them!' Is U.S." Cinema Journal 27:1 (Autumn 1987): 63-77.

31. The Beast from 20,000 Fathoms, dir. Eugene Lourie, prod. Jack Dietz (Mutual Pictures, 1953); It Came from Beneath the Sea, dir. Robert Gordon, prod. Charles H. Schneer (Universal Pictures, 1953).

32. Them!

33. Japan Gets Radioactive Fish," New York Times, March 17, 1954, 1; "Case of Bikini Fishermen Causes Furor in Japan," New York Times, March 28, 1954, E5.

34. Nuclear Fear, 191. In the classic form, scientists and soldiers competed to defeat these monsters; in this case, the scientists

led the military. Peter Biskind sees this struggle as the triumph of liberalism over traditionalism, Seeing is Believing: How Hollywood Taught Us to Stop Worrying and Love the Fifties (New York: Pantheon Books, 1983): 101-59. In some plots, like The Thing (from Another World), the scientists cannot be trusted, and force is the key to overcoming the threat. Biskind cites this plot as an example of more right-wing thinking. See The Thing (from Another World), dir. Christian Nyby, prod. Howard Hawks (RKO, 1951).

35. Biskind, Seeing is Believing, 6. See, Tarantula, dir. Jack Arnold, prod. Wiliam Alland (Universal, 1955); The Black Scorpion, dir. Edward Ludwig, prod. Frank Medford and Jack Dietz (Warner Bros., 1957); The Deadly Mantis, dir. Nathan Juran, prod. William Alland (Universal Pictures, 1957).

36. The Fiend without a Face, dir. Arthur Crabtree, John Croydon (Amalgamated Productions, 1958).

37. Though the relationship of many alien invasions in films to the Soviet threat of this early Cold War period is obvious, the legitimization of this alien threat by radioactivity speaks to more than just the Soviet enemy. It speaks to the enemy at home. See, Jodi Dean, Aliens in America: Conspiracy Cultures from Outerspace to Cyberspace (Ithaca, NY: Cornell University Press, 1998): 171.

38. Killers from Space, dir. and prod. W. Lee Wilder (RKO, 1954)

39. This Island Earth, dir. Joseph Newman, prod. William Alland (Universal Pictures, 1955).

40. The Amazing Colossal Man, dir. and prod. Bert Gordon (American International Pictures, 1957).

41. Attack of the 50-Foot Woman, dir. Nathan Hertz, prod. Bernard Woolner, (Allied Artists, 1957).

42. The Day the Earth Stood Still, dir. Robert Wise, prod. Julian Blaustein (20th Century Fox, 1951).

43. Biskind quotes scriptwriter Edmund North commenting on the Christian motifs: "It was my private little joke. I never discussed this angle with producer Julian Blaustein or director Robert Wise because I didn't want it expressed. I hoped it would be subliminal," Seeing Is Believing, 152. For an interesting article on religious themes in atomic imagery in country music, see Charles Wolfe, "Nuclear Country: The Atomic Bomb in Country Music," The Journal of Country Music 6:4 (January 1978): 4-20.

44. Red Planet Mars, dir. Harry Horner, prod. Anthony Veiller (United Artists, 1952).

45. "Spy vs. Spy" first debuted in Mad, January 1961. Prohias was a Cuban refugee who was unwelcome in Cuba because of his anti-Communist cartoons. See Tom Engelhardt, The End of Victory Culture: Cold War America and the Disillusioning of a Generation (New York: Basic Books, 1995): 131; Antonio Prohias, Spy vs. Spy: The Complete Casebook (New York: Watson-Guptill, 2001).

46. 46. See, Robert Jacobs, "The Psychological Bomb: The Relationship of the American Social Scientists to Nuclear Weapons in the Early Cold War," Peace & Change 35:3 (July 2010): 434-63.

47. The most obvious example of this is the television show Star Trek, with its internationally and racially unified crew.

48. Biskind sees this cosmic viewpoint as leftist, Seeing is Believing, 152-57. See also, Andrew Tudor, Monsters and Mad Scientists (Cambridge: Basil Blackwell, 1989): 39-47.

49. The Incredible Shrinking Man.

50. Justice Downwind, 69-70; Killers from Space.

Created by Datamomentum