ATOMIC POP!

ASTRO BOY, THE DIALECTIC OF ENLIGHTENMENT, AND MACHINIC MODES OF BEING

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Originating as a Japanese manga series written by Osamu Tezuka and published in a magazine for boys in 1952, the television program *Astro Boy* (*Tetsuwan Atomu*) was broadcast in Japan between 1963 and 1966. Due to the enormity of the show's popularity, NBC quickly bought rights to syndicate *Astro Boy*, making it the first Japanese television series broadcast in the United States.[1] In addition to its popularity in both the United States and Japan, the animated series gained widespread international popularity throughout the Cold War period and was remade in the 1980s and again in 2003.[2] More than fifty years later, Sony Pictures purchased the franchise in an effort to introduce *Astro Boy* to a new generation of audiences with the 2009 release of an animated film of the same name.[3] With varying degrees of commercial success, *Astro Boy*'s cultural life spans the entirety of the Cold War and beyond.

Tezuka wrote the series in the hopes of creating alternate visions of atomic power that embraced new forms of technology as utopic possibilities for the future. Even before he created the robot-boy—originally named Atom—his earliest story idea came in the form of an imaginary continent, an "Atom continent," where atomic power was used for peaceful purposes rather than for war. Tezuka's desire to reimagine a world structured by peaceful uses of atomic weaponry contradicted the state of affairs in the Pacific at that time. According to Tezuka, when he first created the *Astro Boy* manga for schoolboys in 1952, "everyone was talking about atoms then" (Schodt, 19). In many ways the word "atom" (*atomu*) served as metaphor for an extraordinary power made possible through science and technology.[4] However, it also carried with it the fear associated with the atomic bomb. This

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darker connotation grew in significance, particularly by the mid-1950s as the United States began testing newer and bigger atomic weapons on the Marshall Islands to the southwest of Japan in the Pacific Ocean.[5] Films like Ishiro Honda's *Godzilla* (1954) and Akira Kurosawa's *I Live in Fear* (1955) express, in two very divergent ways, the trauma associated with the original bombings as well as the ongoing testing of hydrogen bombs. Although written and produced for television in a child's format, *Astro Boy* must be viewed in light of this history, alongside these films, as a participant in the cultural processing of the atomic bomb. As a popular icon for both Japan and the United States, *Astro Boy* functioned from the start as a trans-Pacific cultural object that mediated, or quite literally embodied, Cold War anxieties surrounding the production of new forms of weapons of mass destruction.

In this essay I argue that *Astro Boy* expresses the utopic desires and terrors of the atomic age reminiscent of Max Horkheimer and Theodor Adorno's reading of Odysseus as the figure of modernity in *Dialectic of Enlightenment* (*DE*). This essay correspondingly places the animated series within the philosophic and literary discourse of mimesis and sacrifice as found in *DE*. While Odysseus serves as the prototypical modern hero who learns to offer up his desires on the altar of reason, Atom serves as his nuclear analog at the historical point in which the logic of sacrifice has become so total that the modern hero no longer desires, for he has become a machine. However, through a reinterpretation of mimesis inspired by Atom's machinic performance of the human, I turn to the theorization of mimesis as found in Adorno's *Aesthetic Theory* and to Auerbach's analysis of "Odysseus's Scar." In so doing, I offer a reading of both Atom and Odysseus that seeks to reinvigorate mimetic practices not marked wholly by destruction. This essay also explores the way *Astro Boy* and the visual medium of anime creates a critical lens through which we may productively engage the dialectic of the atomic age, most notably as an aesthetic movement questioning essentialist definitions of the human.

Despite Tezuka's longing for peace, the series was filled with repeated images of violence. Indeed the American production of the series struggled to translate the violence of the Japanese original into a more "suitable" format for American children. Crucially, NBC first erased all references to atomic power in the title. In Japanese versions, *Mighty Atom* (*Tetsuwan Atomu*) alludes to the historic events that form

the basis of the show's larger thematic in the very title of the series. Atom, as the main character is called in Japanese, makes this connection even more explicit. However, American versions drop all references to atoms, renaming the show *Astro Boy*, and correspondingly the main character, Astro. Similarly eliminated were some of *Mighty Atom*'s more controversial episodes, such as Episode 7, "Ambassador Atom" (*Atomu Taishi*). The episode opens with a cartoon image of missiles traveling through space. The frame quickly switches to a close-up on an unidentified planet. Just as quickly, the planet is revealed as the missiles' intended target and blows up on screen. In the unfolding plot, scientists are caught in an interstellar conflict over weapons technology that does not kill its victims but miniaturizes them. One of these scientists, a central character in the episode, narrowly escapes an attack that leaves a field of dead bodies in its wake. Finally, the episode's resolution occurs via a beheading: Atom offers his own head as a sign of good faith between the two planets in conflict.

At stake in NBC's revisions was nothing short of a covering over of the violence of modern technological warfare inaugurated by the atomic bomb from which cities, countries, perhaps even planets can be destroyed by a handful of missiles. Episode 7 may be an extreme example, however; the majority of the series' episodes are filled with newer and bigger forms of technological mastery. The technological breakthroughs depicted in the show most often take the form of the latest weapon of mass destruction, as is the case in Episode 7, in which bombs destroy entire planets and guns, conversely, miniaturize their victims. It is not hard to read this text historically: after the destruction wrought in Hiroshima and Nagasaki in just mere seconds (and given the ongoing production of even more powerful bombs), it becomes possible to imagine the planet itself as a target. Indeed, historian Robert Jacobs traces the emergence of the popular icon of the "Whole Earth" to editorial cartoons published in the immediate wake of the bombings of Hiroshima and Nagasaki.[6] In one of the cartoons Jacobs discussed, a human hand—branded "Science"—holds the earth in the palm of his hand (Jacobs, 267). The cartoon leaves open the question of what "Science" will do with its newfound power: Will earth itself be crushed?[7] From the other end of the scope, the capacity to envision the planet imperiled correspondingly leaves those outside the

nuclear bunker feeling very small—in other words, one is left feeling miniaturized by the condition of global threat.

The censoring of *Astro Boy* in the United States illustrates the hypocritical and contradictory impulses surrounding the nuclear bomb. Broadcasters gave screen time to narratives that emphasized mastery, control, and survival of atomic war (the *Duck and Cover* series shown in schools is a good example of this kind of programming, as are the screenings of footage from atomic bomb tests on broadcast news), and yet there was much concern and hysteria concerning the impact of visual depictions of violence on the proper social development of children.[8] In Japan, the fantastical depictions of violence displaced onto distant planets in the far-off future, which originally appeared in comic-book form (*manga*) before making its way into anime, represented the only forms available for processing the trauma of the atomic bombings. Censorship under the American Occupation actively prohibited open discussion, and went so far as to forbid those who had experienced the bombings firsthand not only from publishing accounts or artistic renderings of their experiences but also from giving public voice to those experiences.[9]

Despite efforts to sanitize the show, American producers could not completely hide all the bodies. According to the storyline presented in the first episode of both versions, "The Birth of Astro Boy," the robot-boy's existence is essentially linked to another child's death. In the opening scenes, the audience is introduced to the "original" boy—Dr. Tenma's son, Tobio—who dies in a violent car accident.[10] The frames showing Tobio's demise and Tenma's subsequent remorse quickly transform into a "birthing" scene. Tenma decides to tempt fate and replicate the divine mysteries of life and death by producing an exact replica of his dead child, this time in the form of a new robotic weapon—Atom. Shadowed in darkness and secrecy, a distraught Tenma pushes forward with his scientific experiment, laid out in its monstrous steel shell on an operating table. In a puddle at his feet lies the robot's outer covering, a biomechanical breakthrough that camouflages the steel just below the surface and makes it possible for Tenma to achieve his vision. Tenma delicately pulls the suit over the unrecognizable machine. As he reaches its head, he moves his hand across what appears now to be the face of a dead Tobio, gently smoothing away the fleshlike wrinkles of the suit as though comforting a

child to sleep. Here the line between creation and destruction blurs. Tenma "clothes" the robot in silence, bringing to life his new "son." Yet the scene also appears as funeral rite. Above all, the body lying on the table symbolizes a grieving father's inability to face the absolute law of mortality. He cannot say goodbye.

What are we to make of this melancholic beginning of a children's cartoon series? Within the very first minutes of the show, as we are introduced to the larger story-arc and foundational narrative, we encounter the death of a child and the birth of a machine. The life of the robot-boy is forever tied to the life of this other child, the "real" boy. As an inert and lifeless machinic carcass awaiting Tenma's life-giving touch, Atom must first reenact the boy's death before coming to life—the father acknowledges as much in the silent gesture made in the darkness of the laboratory. While the family dog, Jump, finally accepts him as the young master returned from the grave, his "father" eventually does not. Atom faithfully studies the relationship between words and things and earnestly embarks upon the project of becoming Tobio. However, Atom is both too similar and too different from Tobio. He is forever trapped within the steel cage of Tenma's making: he cannot grow. With every passing year, his now too-faithful replication of the "original" son as he *was* serves only to remind Tenma of his ultimate failure. Moreover, his internal nuclear reactor makes him much more powerful than the human Tobio—or for that matter, more powerful than the father/creator Dr. Tenma—could ever be. He may look human, but in the end he is something other, a machinic facsimile.

Atom pays a price for his inability to seamlessly integrate his atomic power with his life among humans. Even though advanced robotic technology enables him to look nearly identical to the child he is modeled after, he is in the end an artifact of the atomic age, one that touches upon a lingering anxiety that his human counterparts can only express alternately with awe and disgust. Episode 3, "Save the Classmate" (aired in both Japan and the United States), offers an early example of Atom's problematic status. After rescuing a group of school bullies from certain death in a roller-coaster accident, and nearly fatally shorting his own circuitry in the process, the story ends with Atom physically separated from the people he has served, looking on as the boys are reunited with their parents. While some of the more friendly

children understand that Atom risked a great deal and reconcile themselves to his presence, the parents of the saved classmates are the very ones who want to see Atom removed from school early in the episode (they complain that his attendance violates the human/robot divide). These parents, who are also the school's benefactors, do not acknowledge Atom's efforts or notice the injuries he receives while endangering himself on their behalf. In their minds, his sacrifice is expected as a robot created to serve their human ends.[11]

The confused mixture of emotion Atom encounters in the humans among whom he lives reenacts the ancient anxiety over "original" and "copy," "life" and "art," "master" and "disciple," first expressed by Plato in the *Republic*. Plato's suspicion of mimesis stems from a fear of the rhetorical power embedded in art practices that not only reflect the world "as it is" but also shape that very world. Mimetic practices—the act of mimicking, imitating, copying, aping, and parody—create an impassable rupture for any concept of Truth as an absolute, and unsettle the corresponding insistence on the perfect correlation between reality as a concrete material world and as a set of ideas about that world. If the purely fictional does not act passively as mirror but also as a crucible for the new, there emerges a radical opening to possibility that brings with it also a terror. This terror is not unlike that encountered at the dawn of the atomic age in the images of destruction from Hiroshima and Nagasaki, and in Truman's claim of mastery over "the basic power of the universe" (Truman, 197). In this moment the possibility of radical potential meets that of radical End.

Writing during the Jewish genocide in Europe and a war that threatened to turn the entire world against itself, Max Horkheimer and Theodor Adorno described the historical catastrophe of World War II as the dialectic of enlightenment: technological mastery over nature—what we call progress—gives way to destruction in the increasing rationalization and abstraction of all that is. When all things (including human subjects) are assigned a numerical equivalence or treated as items of exchange in the name of utility and efficiency, then their elimination can become a mere keystroke or final step in an equation. Their work outlines a historical trajectory toward European genocide; however, they wrote of a lingering anxiety prevalent in everyday attitudes in terms that are strikingly *nuclear*: "The noonday panic fear in which nature suddenly appeared to humans as an all-encompassing

power has found its counterpart in the panic which is ready to break out at any moment today: *human beings expect the world, which is without issue, to be set ablaze by a universal power which they themselves are and over which they are powerless"* (Horkheimer and Adorno, 29; my italics). The atomic bomb, with its ability to replicate the fiery forces of the sun, exemplifies the kind of universal power referenced by Horkheimer and Adorno. Exposure to this new form of terror springs not simply from a desire to destroy, but from a desire to know, to create, and to exert control over the conditions of human existence. The bomb and the achievement of nuclear fission represents the highest technological advancement and expresses this complicated desire—to no longer be at the mercy of natural forces, but to control the productive as well as destructive capacity of the universe.

For Horkheimer and Adorno, mimesis and the mimetic faculty are implicated in the unfolding of enlightenment through the vehicle of sacrifice. Anson Rabinbach articulates this intersection succinctly: "The first chapter of *Dialectic of Enlightenment* is an attempt to reconstruct the genealogy of sacrifice through an analysis of the fate of mimesis: first in the order of animistic identification, then in magic, subsequently in myth, and finally in reason. At each of these stages the concept of mimesis is not understood as mere imitation, but as a form of mimicry or semblance that appropriates rather than replicates its object in a non-identical similitude" (Rabinbach, 55).

Mimesis as semblance is important in this formulation; it is an act that preserves a space of differentiation between the mimed object and its imitator. The foundations of mimesis arise from attempts to reconcile the capricious dictates of nature with social life (first with animistic identification, then in magic). However, with the triumph of instrumental reason, the natural world is thoroughly subjugated such that there is no longer the maintenance of a space of otherness or difference. Thus mimesis becomes the repetition of *human* violence. In this fully rationalized world—one in which any of us is now already a virtual kill number in a calculation of nuclear war and fallout—mimesis (what now becomes repressed mimesis) amounts to the sacrificial violence we are willing to submit ourselves to in a quest to fully master the world. Just as the secret of the atom—what we have long held to be the "building block of the universe," or in Truman's term, the "basic power of the universe"—is unlocked and mobilized,

so what was a universal power becomes more properly, though no less terrifyingly, human power.

Mimesis, sacrifice, and atomic power converge in *Astro Boy*. In order to fully grasp this intersection, let us return again to the birth of Atom, which is also the death of Tobio. The animated world of *Astro Boy* is decidedly modern; the action mainly occurs in either urban environments or in space. As mentioned earlier, Atom is not the only form of highly developed technological weaponry (though he is its first); the plot of each episode in many ways revolves around Atom's confrontation with a new form of technology gone wrong. Here, in this cartoon version of a concrete jungle in a state of permanent war, Tobio, the first boy, meets his end. His father, the modern man of reason, has been working day and night on a new weapon (Atom), and won't come out to play. Play in this interpretation represents mimesis in its noninstrumental form where imitation and mimicry come closer to joy, curiosity, and reconciliation than replication. In defiance, Tobio jumps in a space-age vehicle, determined to take himself to all the fun places his father will not. Yet Tobio is just a boy, not old enough to handle the hovercraft; he crashes in a fury of sound and speed. Due to his father's negligence (repression of the mimetic impulse), Tobio is dead. Tenma chose the power of the laboratory over the power of play in much the same way that reason has bent toward the destruction of the world in the dialectic of enlightenment. Devastated by the intrusion of mortality, Tenma refuses to accept any power greater than his. He turns once again to his atomic-powered machine, confident that his creation will grant him the power of the universe. Although he may not have known it at the time, Tenma in effect sacrificed his son so that this new power might live.

Returning to *DE*, Odysseus serves as the figure through which we most clearly see the dialectic at work. I would like to suggest that in the nuclear age, Atom functions much like Odysseus. Odysseus has internalized the logic of sacrifice such that he has learned through his cunning how to throw himself away in order to save himself. That is, he has learned to bargain out of sacrifice through a "self-preserving rationality," just as he has learned to repress his own desires and impulses for unqualified happiness. We can recognize modern definitions of heroism in Odysseus, who as "the knowing survivor is also the man who exposes himself most daringly to the threat of death, thus

gaining the hardness and strength to live" (Horkheimer and Adorno, 38). Likewise, Atom is defined by his internalization of the logic of sacrifice. Indeed, in this case the internalization has become so complete that it is hardwired within his very being. The modern hero is no longer human; he is a machine, and according to the specifications of his human designers, he lacks desire entirely.

Yet there are significant differences between Odysseus and Atom. Most significant, Atom is a child. On the one hand, we may read this as the total rationalization of childhood, and with it the foreclosure of the last preserve for the mimetic faculty. Yet on the other hand, Atom is asked repeatedly to save the world, which amounts to the sacrifice of his own childhood. In order to understand the implications of the *Astro Boy* series, this interpretation must be acknowledged and put into "play." However, I would like to advance another reading. In the figure of Atom lies the promise of a performative mimesis not bent on command and control but rather on empathy. As a child figure, Atom has not yet learned to place humans and objects in rigid hierarchies of being. As one in a constant process of learning, Atom, like his audiences, relates to the fantastical worlds he encounters through wonder. Indeed, this line of thought opens us to a similar rereading of Odysseus. I present these alternate readings not by way of negation, but rather as a means of pursuing a dynamic tension that keeps Atom and Odysseus in a state of eternal return.

As discussed earlier, the ancient apprehension about aesthetic representation and the power of mimesis was never essentially a fear of the power to present the world as it is, but rather the power to both present the world as it is and to alter that image. Anthropologist Michael Taussig, in his study of mimesis, explores the way the concept gestures toward a shifty kind of transformation that happens through the confusion of the real and artifice: "Once the mimetic has sprung into being, a terrifically ambiguous power is established; there is born the power to represent the world, yet that same power is a power to falsify, mask, and pose" (Taussig, 43). In the kaleidoscopic world of mimesis, Taussig argues, it becomes impossible to trace anything like origin and authenticity because the mimed and the miming create an ongoing performative circuit of imitation. A space opens up in the confusion; this is the space of alterity.

In the introduction to his study of alterity and philosophic thought, Mark C. Taylor points out that to alter means both "'to make otherwise or different in some respect' and 'to become otherwise, to undergo some change in character or appearance'" (Taylor, xxviii). Alterity is likewise the "the state of being other or different; diversity, otherness." Inspired and frustrated by the confines of this concept, Taylor finds a close association between the words "alter" and "altar." An altar, as he explains, exists as that place where sacrificial offerings are made, ceremonies are performed, and transformation occurs in the meeting of the sacred and the secular. Taylor creates a new word out of this philological encounter—*altarity*. Taylor's movement between *a* and *e*, his marriage of "altar" and "alter," is meant to enact the concept it creates. Indeed, Taylor's altarity closely resembles Taussig's mimetic acts—formally and conceptually. Mimetic alt*e*rity and alt*a*rity go beyond the mere state of producing difference or otherness and move instead toward that confusing place in between (also, in the midst, in the pull, and in the play of) similarity and difference, identity and other.

Mimetic alt*e*rity and alt*a*rity are evocative of the utopic possibilities that inhere in aesthetic objects as Adorno theorized in *Aesthetic Theory*.[12] The mimesis of *Aesthetic Theory* differs from its theorization in *DE,* in which Adorno and Horkheimer use the concept as a way of describing the historical development of modern man. The mimesis of *Aesthetic Theory* retains its utopic quality because the riddlelike quality of art provides a refuge from an instrumentalizing reason that would require perfect uniformity with the external world. Aesthetic objects find their power and relevance by holding a mirror to reality, in this case not as identical image but rather as question. They produce a world of their own that exists as artifice, or fiction, in contrast to pressures for universal correlation. Artworks belong and do not belong, they reflect and they turn away—they exist in the push and pull of mimetic alt*e*rity and alt*a*rity. This tug of war between similarity and difference shapes the aesthetic object, but it also makes certain requirements of its audience: "Prior to total administration, the subject who viewed, heard, or read a work was to lose himself, forget himself, *extinguish* himself in the artwork. The identification carried out by the subject was ideally not that of making the artwork like himself, but rather that of making himself like the artwork" (Adorno,

17; my italics). Mimetic alterity produces a chain of performativity, one in which audience and performer (text) switch back and forth fluidly, even unconsciously, between roles. According to Adorno, this movement implies a certain "extinguish[ing]" of the subject, a terminus or end that results in the becoming something other. The text then functions as an altar, a space of altarity, a moment of transformation.

In order to understand the relationship between mimesis, sacrifice, and text in this context we return again to Odysseus, this time in Erich Auerbach's study of mimesis and the history of modern European narrative form. For Auerbach, like Adorno, Odysseus is a foundational figure for modern narrative. He presents mimesis as the literary representation of reality (temporal, psychological, affective, as well as material), which he argues becomes crucial for modern narrative form with two historic contrasting styles: Homeric and Old Testament.[13] Strikingly, while he does not clearly articulate a relationship between mimesis and sacrifice, his analysis centers on two classic sacrificial narratives.

Auerbach's first chapter, "Odysseus's Scar" (which opens the larger project in lieu of an introduction), centers on the strange interruption of the tale of Odysseus's homecoming by a set of flashbacks: his naming as an infant, and the boar hunt in which he receives the tell-tale scar that will tip off his nursemaid to his true identity. Relevant to our analysis, Odysseus's true identity is given away by a wound, and not just any wound, but one received through a battle with natural forces (here a vicious boar, which he slays) just as he enters the cusp of manhood. The wound functions as a pivotal point of metamorphoses marking the termination of childhood. It is this scar, a reminder of the death of Odysseus-the-boy and emergence of Odysseus-the-man, which contains the key to his true identity. Because of his wounding, it is hard to distinguish clearly who or what was sacrificed in this moment of alteration: the boar or Odysseus himself.

Even before the tale of the scar, we encounter the brief recollection of how Odysseus receives his name. Autolycus, his maternal grandfather, is something of a rapscallion, who owes his success to offerings given in the name of Hermes in order to win the god's favor. When given the honor of naming his grandson, Autolycus returns to the sacrificial logic. He names his grandson "man of suffering" in remembrance of and offering to the men and women upon whom he has

brought great suffering in his rise to power. The grandfather expiates his sins through the naming of the child who must now bear the violence that founded the patriarch's order. Odysseus is thus born (rather than killed) as a kind of mimetic sacrifice that bridges the gap between the power of the patriarch and the victims of the patriarch's regime. Cast away, set upon, and yet also tempting fate through cunning and trickery (like his grandfather before him), Odysseus is both victim and victor, as well as something more than either one of these terms implies.

Sacrifice and mimesis in the tale of Odysseus's scar are performative in nature. In the performance of sacrifice (the wounding of Odysseus-the-boy and slaying of the boar, the substitution of Odysseus-the-infant for the suffering of others), the rigid boundaries between subject positions become fluid and create transformations that figure prominently in the unfolding narrative—even if visible only in the second look, or the momentary flash of recollection. In his analysis of Auerbach's *Mimesis*, classicist Egbert J. Bakker returns to an earlier meaning of mimesis as the relation between an action and its model, the "becoming another," which necessarily affects the subject of the performative act.[14] A combination of this more originary meaning with Auerbach's use of the word to describe a relationship between a text and its referent (the novel and everyday reality) engages productively with Adorno's proposition that the act of encountering the text is an alt*a*ring moment, one that threatens (or promises) the extinction of the subject as it originally was. The text not only reflects its world, however violent and homicidal that world, but it also alters its subject to the world of the text's creation.

In the case of Odysseus, the tale pulls its audience into the world of epic poetry where centaurs and mermaids lurk. According to Auerbach's analysis, the text inaugurates realism despite its fantastical nature because it seeks to create from fragments a semiotic whole that can be apprehended with the senses; every moment of the journey and every strange creature is tamed through its detailed recording and transcription. However, the tale is one essentially of legend, of a world that exists in opposition to our everyday mundane experience. Odysseus's scar is a crucial moment for Auerbach's study; it opens his analysis but also poses certain problems for his definition of mimesis as the representation of reality. It also presents a challenge to Horkheimer and Adorno's reading in *Dialectic of Enlightenment*. In order to truly enjoy

the performance enacted by the tale, one must forfeit one's hold on reality long enough to be taken in. The world that replaces the "real" one in which the reader lives serves both as a reminder of a time before the reign of reason and a voice of resistance against all that would foreclose an imagining of the world other than it is. To enter into this relation, the subject must give itself up as the center of meaning production and instead follow the lead of the object (the text) in a dizzying impersonation of reality, a miming of the mimed: "The death of this subject is the sacrifice forever occurring at the altar of the temple that always remains suspended above the cleavage opened by the work of art" (Taylor, 58).

Release from an overpowering "reality principle" is also a central element of the relevance of the *Astro Boy* series. *Astro Boy* seduces its audience through the fantastical innocence and power of Atom. On second reflection, we note that the series does not cover over the atomic age by harkening back to a primitive past before the reign of reason and total administration. The series' hero is a robot who, despite his creator's desires, can imitate the life of another but can never be a perfect replica. His eternal childhood and failure to grow into a man haunts the show as a reminder that even while Atom performs the subject position imposed upon him, he is no human subject. The boys and girls glued to the television are interpolated by Atom's mixture of melancholy and freedom, which both acknowledges their own limited subject positions just as it asks them to imagine themselves as some other form of being. Tobio the boy must die, just as essentialist notions of the human subject must be extinguished in the birth of Atom the robot. Children toting Atom packs and baseball hats, dreaming of machinic gears in place of beating hearts, take part in the alt*a*ring performative structure of mimesis: humans imitating objects imitating humans. In this ongoing circuit of mimetic performance, the children offer up their place at the center of subject/object and, if only for the briefest of moments, become robotic.

As robot, Atom also serves as a transitional object that mimetically links representations of the human with representations of human technological advancement. In Atom's machinic imitation of the human, radical end meets radical potential. On one side of this divide, he illustrates the way all things in the atomic age become virtual representations of a universal power full of creative potential that, in actuality,

is used for destruction on a mass scale. Through Atom's mimetic self-sacrifice, the world emerges from the ashes of war, structured along a global rivalry for this universal power. However, Atom's mimetic self-sacrifice can also be read as a transformative alt*a*ring of the world of the viewing subject. *Astro Boy* encourages identification with the imperfect copy, the not-quite-human machinic form of life. This machinic form of life—the robot—exposes the way the human is already robotic in a totalized world of abstracted reason. Yet robotic interpolation provides the viewing subject with the opportunity to see the world through a slightly fractured prism, catching a glimpse of both its imprisoned condition and the possibility of freedom.

In closing this discussion, it should be noted that in many ways a discussion of mimesis (in a more classical sense of the term) and animated form do not have obvious points of intersection. Cinema, rather than anime, is more often associated with mimesis. Japanese anime and film critic Daisuke Miyao describes this relationship in his explanation of early Japanese cinema and the Pure Film Movement (in ways that are reminiscent of Auerbach's use of the term):[15] "For Pure Film reformers, the essence of cinema lay in its ability to depict the world with greater realism than other art forms. The ideal of realism within the Pure Film Movement seemed to entail a belief in the transparency of the medium, or the objectivity of the camera, in its representation of people and of the world. Thus, a great deal of emphasis was placed on 'naturalistic' or 'realistic' styles of acting, an acting that did not appear to be acting" (Miyao, 201). Miyao's description of the aims of the Pure Film Movement coincides with schools of thought within Western film studies, which argue that cinema exemplifies mimetic form because it provides an image of the world that corresponds in a nearly identical way to life as it is lived.[16] Anime, in contrast, "failed to depict the world in the realistic way demanded by reformers" (ibid.).

Anime's failure in this regard corresponds with Atom's failure to perfectly replicate Tenma's "real" son Tobio. For both, the performance does not/cannot hide its status as copy. Just as Atom's nuclear-powered flight gives away his parody of the human as performance (to Tenma's delight and rage), anime's strange insistence on maintaining visible seams between the different forms of visual media at work (cinema, cel animation, and digital animation) means that the genre must be evaluated by reference to something other than a reality effect.[17] In

particular, limited animation of the kind Tezuka used in creating *Astro Boy* maintains a relation of graphic resemblance to the world rather than simulation of reality. With many fewer frames per second, the intervals between cells and between the characters' movements become an aesthetic component of the work.[18] In order to understand anime's mimetic potential, we must learn to think *other*wise. Indeed, according to anime critic Thomas Lamarre:

> Animation presents other possibilities. For, to compose a movement, animation must first decompose or decode it. Even when animation closely follows the models of live-action cinema, it does not merely copy or replicate. It recodes, and thus decodes. Decoding goes beyond an imitation or reproduction of live-action cinema, and opens up new possibilities for expression. It reaches into the so-called live action and unravels it. It thus goes to the heart of what is "live." This is a potential of animation that becomes especially important in *anime. Anime* cuts to the quick of the "live." (Lamarre, "From Animation to *Anime*," 333)

Recoding and decoding, anime presents us with a mimesis that is something more than the replication of what is. Rather, the medium makes possible an alternate vision of reality. Going "to the heart" of "live," cutting "to the quick," this altering resembles a kind of mimetic sacrifice and becomes a transformative alt*a*ring.

Anime's transformative power comes not from a nostalgic return to the world as it was, even as it refuses to be enslaved to the world as it is. Anime (as opposed to other forms of animation) may include the most technologically advanced techniques, but it cannot be said that these techniques are marshaled to make the image "more real":

> With this minimal approach to presenting movement, however, something new appears in the mechanism of recognition, something that troubles it. The walking, so minimally presented, may evoke a sense of skippiness, jerkiness, awkwardness or artificiality. The figure becomes not simply a walking automaton. Rather it becomes an automaton of walking. It is a machine of walking, in a manner of speaking. It walks objects—and potentially anything becomes an object: human figures, animal figures, stones, trees, machines, crowds, planets and so on. . . . It is a process of inventing machines of movement—machines of walking, of talking, of running, leaping, flying, and so forth—that take up all manner of objects.
>
> . . . it is not simply a question of a walking machine, a flying machine, a living machine. Rather, it is a question of a machine walking, a machine

> of flying, a machine of living—such machines traverse and organize narrative. And the Tezuka-style stories, in which one comes to understand the humanity of the automaton, steadily give way to narratives in which everyone, everything, is machinic, automaton. (Lamarre, "From Animation to *Anime*," 339)

Ironically, it is a calculated simplicity in visual form that gives rise to the alt*a*ring effect. Alt*a*ring here is the dislocation of the absolute position of the subject: rather than perfectly imitating the world as experienced by the unified human subject, anime offers a world of layers, mediated by gaps. These spaces between the cels perform a decentering of subjectivity because the emphasis turns on foreground and background rather than the distance to or from any one position. The visual interest operates primarily on a scale of relative movement of cels rather than the creation of one focal point of interest from which the action unfolds.

Returning to Episode 7, we can now read Atom's "beheading" outside the paradigm of ritual slaughter or self-immolation. Instead, it is possible to read Atom's actions as the diegetic reproduction of the decentering quality of the medium, and a vision for an alt*a*red subject. Atom's essential identity is not found solely in his head, just as he does not resolve every problem through reason alone. "Ambassador Atom" leaves his head behind not as an act of violence, but of trust. Although a product of instrumental rationality, he serves as a representative for a different kind of diplomacy, one that challenges the conventional structure of mutually assured destruction. Since Atom can apparently fully function with just his body, his sacrifice must be read as a symbolic offering: rather than turning the world into a generalized target, he offers up not just his head (the center of reason), but also his eyes and with them his role as the perceptual center. Not quite unburdened from the confines of his performance of the human, but not replicating a demand for a wholly unified position, Atom gives way in the infinite mimetic play of anime to an emerging field of machinic forms of life. Herein lies a glimpse into the experience of what Adorno might call the "expression of the expressionless, a kind of weeping without tears" (*Aesthetic Theory*, 117). For Adorno, this is the experience that artworks offer—not communion with nature, not the recuperation of ideology masquerading as a celebration of human values.

Lamarre describes animation as an essentially machinic mode. "Machinic" here describes an ensemble of technical objects (the animation stand, or camera) and the humans who create the stories, as well as those who view/enact them (in anime with its transmedia character, the distinction between viewing and enacting is blurred).[19] The machinic figure is embodied in the automaton/robot—a subject defined not by an essential or stable identity but by an ability to participate in a fully technological world for purposes other than destruction. As such, anime, and the animated robot, offers a humbling and potentially empowering moment of alt*a*rity. By focusing on the potentials of technological transformation, perhaps other questions arise besides those focused narrowly on the accumulation and containment of power:

> Not only do we not yet know what life is biologically, chemically, physically, spiritually, metaphysically and so forth; but we also do not know—we refuse to know even as we strive to know—what this world is. We do not yet know what this world, this life is *of*. How then to know what this life is *for*? (Lamarre, "From Animation to *Anime*," 340)

Posing as textual riddles, *Astro Boy* and its animated progeny offer machinic modes of thinking and being in relation to the world that do not necessarily end in the replication of disaster, even amid the overwhelming mobilization of life.

Of course as an aesthetic movement, anime is hardly monolithic: machinic dreams of wonder just as easily turn dark and frightening.[20] As critic Susan Napier points out, anime is a culturally specific historical expression of the trauma of atomic annihilation; it is thus uniquely Japanese and not surprisingly filled with images of apocalypse.[21] Yet it is also consumed globally; for generations raised on the policy of mutually assured destruction, anime resonates with their own disaster-filled nightmares and hopes for utopic reconciliation. From the position of the object—and now the human subject turned target—life in the atomic age resembles the world of the exploding animated image more than its departure from the reality principle would suggest. In its mimetic imaginings, anime, perhaps more than any other medium, carries out the difficult and contradictory work of processing and exploring the limits and potentials of our world. Thus even for the uninitiated, anime as critical consciousness is vitally important,

for it represents an understanding of modernity and history at that place where the present meets the future.

Notes

1. For an in-depth account of *Astro Boy*'s history, see Frederik L. Schodt, *The Astro Boy Essays: Osamu Tezuka, Mighty Atom, Manga/Anime Revolution* (Berkeley: Stone Bridge Press, 2007).

2. The 1980 rerelease of *Astro Boy* aired in Japan, the United States, Canada, the Philippines, and Australia. The 2003 version aired in Japan, the United States, Singapore, Malaysia, Thailand, Hong Kong, China, the Philippines, India, the UK, Ireland, Portugal, Bulgaria, Brazil, Egypt, Iraq, Jordan, Lebanon, Saudi Arabia, Yemen, and Syria.

3. The 2009 big-budget production was simultaneously released in more than forty countries, including Japan and the United States, and featured voice acting from Hollywood notables Donald Sutherland, Charlize Theron, and Nicholas Cage. When I wrote this essay in Hiroshima around the time of *Astro Boy*'s filmic release, big screens along the main shopping arcade played its trailer. In fact, the movie's first release was in Japan nearly two weeks before release in the United States at the end of October 2009.

4. For a short discussion of the use of this word, and a more general discussion of the broader cultural and literary history of *Astro Boy,* see Kenji Ito, "Robots, A-Bombs, and War: Cultural Meanings of Science and Technology in Japan Around WWII," from *Filling the Hole in the Future: Art and Popular Culture Respond to the Bomb*, ed. Robert Jacobs (Lanham, Md.: Lexington Books, 2010), 63–97.

5. Japanese uncertainty and anxiety about nuclear testing in the Pacific culminated in the Lucky Dragon incident. The *Lucky Dragon 5* was a Japanese tuna fishing boat carrying twenty-three men who were exposed to high levels of radiation on March 1, 1954, when the United States secretly tested new forms of the bomb in the Pacific. The Lucky Dragon sparked much internal debate in Japan about nuclear power and Japan's increasingly close relationship with the United States, both economically and militarily. For more on this event and the political context around the hydrogen bomb testing, see Ralph E. Lapp, *The Voyage of the Lucky Dragon* (New York: Harper, 1958); and Robert A. Divine, *Blowing on the Wind: The Nuclear Test Ban Debate, 1954–1960* (Oxford: Oxford University Press, 1978).

6. Robert Jacobs, "Target Earth: The Origins of the Image of the Whole Earth in the Ashes of Hiroshima and Nagasaki," from *Filling the Hole in the Future,* ed. Robert Jacobs, 187–205. The Whole Earth refers to photographic representations of earth from space from the late 1960s. Unlike those found in cartoons, which produced a sense of futural uncertainty, the Whole Earth images were used to rally support for a world without borders, alone in space, and united by a common fate.

7. It is also worth noting that the animated destruction of the world as an object on the screen is made possible by military technology that threatens the earth as a whole and visual technology that turns targets into distant points in a faraway place. Paul Virilio calls the mobilization of visuality for total global war the "logistics of perception." He argues that these weapons have altered our relationship to perception and representation: nuclear weapons both shorten the distance in time and increase the distance in space between decision makers and their targets such that the whole world has become one large theater of war. Former U.S. Undersecretary of Defense William J. Perry provides an appropriately succinct description of the concept: "I'd put it like this: once you can see a target, you can expect to destroy it." Paul Virilio, *War and Cinema: The Logistics of Perception*, trans. Patrick Camiller (London: Verso, 1989), 4. I discussVirilio's concept of "logistics of perception" in more detail in my dissertation project, "The End, or Life in the Nuclear Age."

8. For more discussion of violence, American television, and nuclear anxieties, see Tom Engelhardt, *The End of Victory Culture: Cold War America and the Disillusioning of a Generation* (Amherst: University of Massachusetts, 1995), 133–54; Margot A. Henrikson, *Dr. Strangelove's America: Society and Culture in the Atomic Age* (Berkeley: University of California, 1997), 87–111; Michael Scheibach, *Atomic Narratives and American Youth: Coming of Age with the Atom, 1945–1955* (Jefferson, N.C.: McFarland & Co., 2003), 153–74.

9. See John W. Dower, "The Bombed: Hiroshimas and Nagasakis in Japanese Memory," in *Hiroshima in History and Memory*, ed. Michael J. Hogan (Cambridge: Cambridge University Press, 1996); and Lisa Yoneyama, *Hiroshima Traces: Time, Space, and the Dialectics of Memory* (Berkeley: University of California Press, 1999).

10. To avoid confusion, but also to emphasize the show's relationship to atomic technology, I will refer to the characters by their names in the Japanese version of the show. In contrast, I will refer to the show by its American title, *Astro Boy*.

11. In the Japanese version, his sacrificial nature is all the more underscored: in the series' opening episode, Atom must save the circus owner who has enslaved him. Atom only barely manages to survive. For his bravery, he is granted his freedom; however, as a technological object, his value remains clearly tied to his ability to serve humans.

12. Adorno's conception of art draws a sharp divide between popular cultural objects like *Astro Boy* and serious avant-garde work. However, the framework for the analysis of art objects presented in *Aesthetic Theory* does not require us to maintain Adorno's division between high and low art or to dismiss Adorno's work in its entirety. First, *Aesthetic Theory* places a great deal of importance on technology and experimentation with form as a way in which aesthetic objects reflect and fracture the world around it. A dismissal of popular cultural objects outright does not take into account the ways some forms of popular art challenge the mass mediums they nevertheless participate in through technological innovation. Second, although I have relied on Adorno's concept of mimesis in this section, Adorno does

not emphasize the performative nature of the concept. By placing more emphasis on mimesis as performativity, one makes space for popular culture objects that often rely heavily on performativity as a vital aspect to the way in which they work on and with their audiences.

13. The following is Auerbach's description of the narratives' relation to the representation of reality: "The two styles, in their opposition, represent basic types: on the one hand fully externalized description, uniform illumination, uninterrupted connection, free expression, all events in the foreground, displaying unmistakable meanings, few elements of historical development and of psychological perspective; on the other hand, certain parts brought into high relief, others left obscure, abruptness, suggestive influence of the unexpressed, 'background' quality, multiplicity of meanings and the need for interpretation, universal-historical claims, development of the concept of the historically becoming, and preoccupation with the problematic." *Mimesis*, 23.

14. In his article "Mimesis as Performance: Rereading Auerbach's First Chapter," Bakker emphasizes the performative nature of the call-and-response form of memory required in the transmission of epic poetry, which creates a relationship between each instance of perceiving the story and its previous tellings.

15. As Miyao explains in this article, the Pure Film Movement describes the aims of a handful of Japanese cinema critics and creators who were influential at the time anime emerged as a new form (1916–23). Miyao argues that the presence of traditional narratives in early anime films is a reaction to the criticism of those calling for "pure art" in cinema.

16. Here I am thinking of film scholars like Siegfried Kracauer and André Bazin.

17. For a discussion of the relationship between anime and cinema, see Thomas Lamarre, "The First Time as Farce," in *Cinema Anime: Critical Engagements with Japanese Animation*, ed. Steven T. Brown (New York: Palgrave Macmillan, 2006), 161–87.

18. For a discussion of the effects of limited animation, see Lamarre, *The Anime Machine*, 187–88, 191–93.

19. Ibid.

20. Katsuhiro Otomo's film *Akira* (1988) is a good example of the kind of anime that presents a world destined for apocalyptic repeats of destruction with little hope for creating different versions of history.

21. Susan Napier, *Anime from Akira to Howl's Moving Castle* (New York: Palgrave Macmillan, 2001, 2005). In the chapter "Waiting for the End of the World," she notes the connection between apocalypse, anime, and the atomic bomb: "Of course, the atomic bombings of Hiroshima and Nagasaki are the most obvious catalysts to apocalyptic thought. As of today Japan is still the only country in the world to have suffered the devastation of atomic destruction. Although the bomb itself is not always specifically delineated, it stalks through a notable amount of postwar Japanese culture in a variety of displaced versions" (253); "Caught in a postwar world in which the dream of consumer abundance is less and less able to

conceal a corrosive emptiness, the apocalyptic mode may seem to be the only sure means of escape" (274).

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