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Mutation as Metaphor in *Annihilation*

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Abstract

Fukuyama posits that the greatest risk associated with contemporary biotechnology lies in its potential to fundamentally alter human nature, ushering in a "post-human" era that will raise new questions concerning human identity. The biotechnological revolution is currently advancing in three primary directions, with a central focus on genetic manipulation that enables the selection and modification of embryos to enhance physical performance and disease resistance. Popular films such as *Patient Zero* and *V-Wars* depict the emergence of new, mutated species and the downfall of the old world order. These new entities, while physically superior and more intelligent, are often detached from human values and treat humans as subordinate beings, reflecting and avenging humanity's own tendencies toward racism and speciesism. In other works, such as the *Helix* series and *The Titan*, mutations are portrayed as responses to climate change, where genetic modifications are employed to help humanity adapt to an evolving environment, leading not only to biological transformations but also to significant social and ecological shifts. In *Annihilation*, mutation triggers an accelerated form of evolution, in which the creation of new species seems to herald the emergence of a new order within 'natureculture,' resonating with Haraway's notion of the 'Chthulucene.' Through these biological transformations, the films explore questions of responsibility, (bio)ethics, and politics, highlighting the shifting power dynamics in a world where humans are no longer the dominant species.

Keywords: adaptation, climate change, mutation, Chthulucene, speciesism

Posthuman Future

According to Francis Fukuyama, one of the most significant threats posed by contemporary biotechnology is the potential alteration of human nature, which could usher in a "posthuman" era (2002, p. 7). Fukuyama identifies three major strands of the biotechnological revolution, each aiming to transcend the boundaries of what he terms "human nature." Among these, he highlights the rapid advancement of genetics as the most consequential and alarming, particularly because it allows for the selection or modification of embryos based on their genetic makeup to enhance physical endurance or resistance to disease (Fukuyama, 2002, p. 9).

This drive toward unpredictable changes in human capabilities resonates with themes explored in recent popular films. The series *Helix* (2014–15), *V-Wars* (2019), *The Passage* (2019) and *Zoo* (2015–2017), the Danish *The Rain* (2018–2020), the South Korean *The Sea of Tranquility* (2021), and *Sweet Tooth* (2021–2024), along with films like *The Titan* (2018), *Patient Zero* (2018), *Gaia* (2021), or Cronenberg's *Crimes of the Future* (2022) present stories in which characters undergo transformations—whether accidental or deliberate—into new, hybrid species. These creatures are often portrayed as more advanced than *Homo sapiens*, characterized by enhanced physical capabilities or superior environmental adaptability, and their emergence typically precipitates the collapse of the existing world order.

While the films and series mentioned above will not be analyzed in detail in the present study, they are referenced to outline a broader corpus of contemporary sci-fi and horror films that engages with themes of mutation, hybridity, and the destabilization of fixed human identity. *Annihilation* (2018), which will be examined more closely in the following section, exemplifies the central concerns of this corpus. This paper aims to analyze *Annihilation* through the lens of posthuman ecocriticism, with particular emphasis on the metaphor of mutation as it relates to ecological crisis and the dissolution of human exceptionalism. Drawing on theoretical frameworks such as posthumanism, the Chthulucene, and climate fiction (cli-fi), the study situates *Annihilation* within a broader corpus of contemporary sci-fi and horror cinema that explores mutation as both a destructive and generative force. The analysis seeks to demonstrate how the film departs from Anthropocene narratives of environmental degradation and instead imagines a speculative, post-Anthropocene world defined by hybridization, multispecies entanglement, and ontological instability.

While becoming a superhero in genre films often involves some form of genetic change, these narratives more frequently evoke monstrosity not merely as a source of fear or deviation (as is also evident in the portrayal of "superwicked" antiheroes), but as a powerful

metaphor for ontological disturbance—signaling the collapse of established boundaries between self and other, human and nonhuman (Bishop, 2013, p. 75; Dudenhoeffer, 2014, p. 4; Schmeink, 2016, p. 132; Parker & Poland, 2019, pp. 4–5). Moreover, many of these works may also be categorized as climate fiction (cli-fi), a subgenre of science fiction that directly addresses the ecological and existential consequences of climate change (Leikam & Leyda, 2017, p. 111). As such, cli-fi functions not only as a speculative genre but also as a cultural barometer, interrogating the imagined futures that arise from environmental collapse and frequently offering unsettling visions of what might succeed the Anthropocene (Trexler, 2015; Johns-Putra, 2016).

While in many films and series, mutation is portrayed as synonymous with the physical transformation of a living body, *Annihilation* employs the term with greater scientific precision, associating it with cancerous changes. This usage is consistent with the medical understanding of cancer as "a complex disease characterised by mutations in genes that control various hallmarks of the disease, including escaping programmed cell death, promoting genome instability and mutations, and proliferative signalling" (Sinkala, 2023). In *Annihilation*, the proliferation of such mutations accelerates evolutionary processes, giving rise to novel species that embody a radically altered biosphere. These transformations invoke not only ecological change but a distinctly posthuman horizon—a condition in which the traditional human subject, defined by autonomy, rationality, and species integrity, is profoundly decentered. The posthuman does not merely signify technologically enhanced or biologically altered humans; it entails a fundamental reconfiguration of subjectivity, agency, and relationality in a world increasingly shaped by nonhuman forces, multispecies entanglements, and technological infrastructures (Braidotti, 2013; Wolfe, 2010). It insists on the recognition of human embeddedness within complex ecological and material networks, dismantling the illusion of human exceptionalism and mastery.

Annihilation thus resonates with Donna Haraway's concept of the Chthulucene—an epoch defined not by human supremacy but by interwoven survival and the imperative of "staying with the trouble" through multispecies becoming (Haraway, 2016). Haraway's framework explicitly resists the logic of the Anthropocene, the term commonly used to describe our current geological era, marked by the far-reaching and often destructive impact of human activity on Earth's systems (Crutzen & Stoermer, 2000). Indeed, while the Anthropocene haunts the film's thematic backdrop, *Annihilation* does not dwell on industrial pollution or explicit ecological degradation. Rather, it presents a deeper, more enigmatic response from the nonhuman world—one that operates outside the coordinates of human understanding or control.

In this sense, the methodological approach adopted in this study to analyze *Annihilation* is not arbitrarily applied, but emerges organically from the material itself: The films under discussion seem to demand a posthuman ecocritical perspective—one capable of addressing their complex representations of interspecies entanglement, ecological disruption, and the possible futures that emerge from these conditions. Such an approach enables a reading that goes beyond anthropocentric frameworks, attending instead to the ways these narratives imagine futures where the collapse of human-centered worldviews gives rise to posthuman forms of life and meaning. The films referenced above can thus be read as cultural responses to shifting ontological and ecological paradigms, challenging the presumed centrality of the human and envisioning speculative worlds where multispecies futures take shape from the ruins of anthropocentric modernity.

These films and series often fall within the "invasion fantasy" genre, which centers on the theme of "normal" humans being overtaken by mutants (Kérchy, 2018, p. 70). Péter H. Nagy posits that these narratives, which can be placed within the context of the myths of Pygmalion and Frankenstein, mark the transition from the age of humanity to that of chimeras, signaling the posthuman era and the emergence of hybrid identities (H. Nagy, 2019, pp. 135–136). Frequently, these stories begin in medical or research settings, where characters either inadvertently encounter a pathogenic agent that triggers their mutation or deliberately attempt to engineer such transformations, often in hopes of gaining political or economic advantage. However, as the narrative typically unfolds, the characters' plans are thwarted—scientific ambition is corrupted by profit motives, and the medical oath to heal becomes subverted. Large-scale infections often lead to mass death in pursuit of a positive outcome, while the mutated beings that survive are generally "better" only in terms of their physical attributes. These films could be aptly categorized as *transhuman monster movies*, reflecting and critiquing the ethos of transhumanism, which "hope[s] to add the fruits of advanced technologies to the limited toolkit of traditional humanism, believing that prospective developments in (…) technologies will soon allow humans unprecedented control over their own nature and morphology" (Roden, 2015, p. 13).

In the 2010s, cinema and TV shows mutations frequently served as a lens for exploring ecological concerns, either as deliberate responses to environmental collapse or as unintended consequences of scientific intervention. The series *Helix* depicts transhumanist elites engineering viruses to replicate past mutations, granting immortality and raising ethical questions about whether such a transformation could foster a more just world. The show suggests that, as immortal beings, these new entities are liable to assume greater ethical responsibility for the Earth, presupposing that human exploitation of

natural resources has historically been shaped by the brevity of life. However, rather than embodying a new ecological ethic, the transhumans in *Helix* replicate speciesist hierarchies, asserting their superiority and assuming control over life and death. This narrative reflects broader anxieties about transhumanism's capacity to address the challenges of the Anthropocene—a geological epoch defined by profound human impact on Earth's systems (Biermann & Lövbrand, 2019, p. 1). Similarly, *The Titan* and the series *The Silent Sea* explore genetic interventions in response to resource depletion, with governments employing biotechnology as a means of planetary survival. Yet, these experiments often result in unintended ethical and ecological dilemmas, as seen in *The Silent Sea*, where a genetically engineered girl becomes the only survivor of a virus meant to secure humanity's future.

These films interrogate the boundaries of humanity, the ethics of biotechnological transformation, and the limitations of transhumanism as a solution to the ecological crisis, ultimately challenging the notion that overcoming human biological constraints can lead to an ethical or sustainable utopia. Rather than framing the conflict as a simple opposition between "human nature" and (transhuman) monstrosity, these films introduce characters that embody a "livable ideal" of *posthuman* ethics. Such narratives resonate with critical posthumanist thought, which questions hierarchical species relations and urges a rethinking of ethical coexistence in the Anthropocene. As Nayar posits, "critical posthumanism calls for an ethical question: how do we live with others on Earth?" (2014, p. 48). In these films, survival is not merely a matter of genetic adaptation but of cultivating new ethical paradigms that transcend the exploitative tendencies embedded in human history.

Mutation and the Ecological Crisis

When the biological process of mutation was discovered in the late 19th century, it was considered a positive force. At that time, mutation was primarily understood within the framework of evolutionary theory. It was thought to be an essential mechanism through which natural selection operates, with the key idea being that environmental changes necessitate new mutations for selection to function (Bowler, 2005, p. 25). However, the experience of World War II reshaped the concept of mutation, shifting its associations from evolution to degeneration. The horrors of the atomic bomb, coupled with the ongoing threat of nuclear warfare during the Cold War, reinforced a negative perception of mutation, portraying it as a process that led to defective cellular changes, disease, and death. This narrative is reflected in films such as *Them!* and *Godzilla* (1954).

Maurice Yacowar, in his seminal 1977 essay, classifies films that depict "a human community against a destructive form of nature" as a subgenre of disaster cinema. Within this subgenre, he identifies three subcategories: when the disruption is caused by "an animal force," by "the elements," or by "an atomic mutation" (Yacowar, 2003, pp. 277–278). The last category is particularly significant in Yacowar's work, as it became especially prominent in the 1950s and 1960s, when a surge of films depicted the catastrophic consequences of nuclear experimentation (Masco, 2020, pp. 519–520). These films often featured oversized insects and other mutant creatures, resulting from atomic radiation, that subsequently threatened humanity, framing the invasion as a global crisis (or at least one centered on the United States). The depiction of insects as antagonists in these films carried political undertones, symbolizing communist "hive societies." At the same time, these portrayals reflected broader socio–economic anxieties of the era, particularly concerns over the widespread use of pesticides and insecticides (Tsutsui, 2007). The fear of communist invasion, which shaped the narratives of the 1950s "bug films," later gave way to growing concerns about chemical pollution and environmental degradation (Buell, 1998, p. 645; Orr, 2002, p. 79).

The extensive use of chemical agents, including napalm, by the United States military during the Vietnam War (1965–1973) caused severe and long-lasting ecological damage (Collomb, 2012, p. 61). The publication of Rachel Carson's groundbreaking *Silent Spring* (1962), which exposed the dangers of chemical pollutants, marked a pivotal moment in the evolving discourse on mutation (Eckersley, 1992, pp. 9–11; Nash, 2007, p. 1). Carson's work revealed how pesticides, initially designed to control insect populations, were seeping into ecosystems, polluting rivers, entering the food chain, and causing widespread poisoning, disease, and genetic mutations. The burgeoning American environmental awareness of the 1960s and 1970s was further fueled by a series of ecological disasters, which, unlike similar events in previous decades, were widely broadcast on television, capturing the attention of a national audience.[1] These concerns increasingly suggested that the world is threatened by a global environmental crisis.

Environmental degradation has become a recurring theme in cinema, particularly in horror films. The depletion of the ozone layer and the greenhouse effect emerged as prominent anxieties in the 1970s, exacerbated by the oil crisis resulting from the 1973 oil embargo. Within the horror genre, this period also saw narratives in which animals,

[1] For example, the garbage spill on the Cuyahoga River in Ohio in 1969, or the Santa Barbara oil spill off the coast of California at the same time. The Love Canal chemical spill crisis was publicized in 1978, while the Three Mile Island nuclear accident was publicized in 1979.

previously symbols of nature's tranquility, became threats due to human disruption of their natural habitats (Salmose, 2015, p. 160). With the rise of "toxic consciousness" (Deitering, 1996, pp. 196–197; also see Buell, 1998, pp. 639–665), the Frankensteinian nightmare of giant mutant monsters persisted as a dominant theme in horror cinema. However, the cause of these mutations was recontextualized: monstrosity increasingly came to be depicted as a consequence of environmental pollution (Bellin, 2009, pp. 145–168).

In the Japanese film *Godzilla vs. Hedorah* (1971), the antagonist, an extraterrestrial creature, is sustained by pollution and releases toxic byproducts, symbolizing the destructive consequences of environmental negligence. Similarly, films such as *Omega Man* (1971) and *Godmonster of Indian Flats* (1973) explore the impacts of chemical warfare and mining, respectively, on human health and the environment. Other films, such as *Day of the Animals* (1977), depict animals turning hostile due to ozone depletion, while *Alligator* (1980) and *Prophecy* (1979) feature creatures mutated by industrial waste and chemical pollutants.

While transformation and metamorphosis have long occupied a central place in mythology and literature—historically construed as either miraculous or cursed—the scientific concept of mutation has been predominantly associated with degeneration in 20th-century cinema. In many cases, mutated creatures exhibit unconventional appearances or behaviors, often bearing visible signs of decay, decomposition, and disintegration. However, even in these films, mutation is frequently depicted as a paradoxical phenomenon, endowing the afflicted creature with extraordinary abilities rather than merely signifying its deterioration. As Gruson-Wood argues, this recurring motif of "supernatural disability" stems from a broader cultural tendency to perceive physical or biological deviations from the norm as inherently threatening: "Hence, the monster's super-disabled, hyper-flexible, 'deformed' body becomes an enthralling freak show act for viewers to gawk, gape, and stare at in simultaneous wonder and terror" (Gruson-Wood, 2016, p. 93). In the 21st century, this notion has evolved further, with mutation increasingly represented as an adaptive mechanism—a necessary response to a changing concept of "nature," which is no longer seen as static, eternal, and unchanging, but rather creative, constructive, and inventive. Species are

> no longer eternal essences but statistical effects of random mutations in individuals passed on in a population as a result of natural selection and geographic isolation. In this regard, deviation–mutation is no longer seen as monstrous but as inventive. Here 'nature' begins to look more and more historical, and it becomes increasingly difficult to contrast the natural with the artificial. (Bryant, 2013, p. 297)

The notion of a "pure" human essence is increasingly portrayed in contemporary cinema as an expression of hubris—an illusion that ultimately precipitates cultural downfall. This ideological shift is reflected in the evolving representation of mutation. In contemporary ecohorror, mutation is no longer embodied by the monstrous 'other' but by *Homo sapiens* itself, suggesting that humanity, rather than nature, is the true site of existential crisis.

Annihilation and Cancer as Metaphor

The 2018 film *Annihilation*, directed by Alex Garland and based on Jeff VanderMeer's novel, follows a government-organized expedition investigating a mysterious zone that has been infiltrated by an alien life form. After the sole surviving member of the first team returns—critically ill—a second team is dispatched. Among them is Lena, a biologist and the wife of the surviving soldier, who joins the mission out of guilt for cheating on her husband. Within the zone, called the Shimmer, the alien entity's effects gradually become apparent, intensifying as the team moves toward its center. The film culminates in the creation of a doppelgänger of Lena, whom she ultimately destroys. However, the alien presence has already embedded itself within her, mirroring the fate of her husband, who, as it is later revealed, is not the original man who left on the expedition but a clone created by the alien entity. This transformation challenges conventional notions of good and evil, leaving the nature of the alien force open to interpretation.

Annihilation engages with the evolving discourse on mutation, particularly through its central leitmotif: cancer. The film explicitly introduces this theme in its opening sequence, where Lena, in her role as a university biology professor, delivers a lecture on cell division. The rhetorical structure of her monologue initially suggests a discussion of life's origins and the biological mechanisms that sustain it. However, as the lecture progresses, it becomes clear that she is describing cancer—a pathology in which cellular mechanisms designed to preserve life are subverted, leading instead to the destruction of the host organism. This thematic parallel between mutation and malignancy recurs throughout the film (Parker, 2020, p. 160).

A significant reinforcement of this metaphor occurs when Lena, inside the anomalous zone, extracts a blood sample from herself to analyze the impact of the alien phenomenon. Under the microscope, she observes—and the audience, through a direct visual cut, witnesses—the same pattern of uncontrolled cell division she had previously examined in her classroom. Later, when questioned by her team, Lena acknowledges that her findings indicate the presence of cancer. At this juncture, the film also reveals that the expedition's

psychologist, whose motivations for embarking on the mission had remained enigmatic, was already suffering from cancer before entering the zone. This revelation further solidifies the film's metaphorical alignment between the alien force and the disease.

The alien entity's infiltration of the natural world within the film appears as the unchecked spread of cancer, illustrating its capacity to proliferate from a single point, disregard the integrity of its host environment, and ultimately threaten all life forms within its reach. As in many horror narratives that externalize internal anxieties, *Annihilation* transforms the concept of the "evil within us" into a literalized threat. The film's narrative extends beyond its explicit representation of cancer as a biological phenomenon, incorporating metaphorical and psychological dimensions of the disease. While the theme of cancer is most directly explored through the microscopic examination of cells within the alien zone, it also emerges in indirect and symbolic forms through the characters' backstories and motivations. The expedition to the zone is repeatedly framed as a "suicide mission," undertaken by those seeking punishment or self-destruction.

The leader of the team, a military psychologist, actually suffers from cancer, but all the other team members reveal hidden motivations tied to personal loss or suffering, mirroring the self-destructive tendencies associated with the disease. One character's daughter, who also had cancer, has died, leaving her mother unable to find meaning in life; another character engages in self-harm; a third struggles with drug addiction. Lena, as the film reveals, has cheated on her husband—an act that, according to the psychologist, represents a betrayal that destroyed her once-happy marriage. These characters' actions are linked to the metaphor of cancer as a form of "turning against oneself." Ultimately, only Lena survives, though she emerges fundamentally altered, suggesting a parallel to the transformative experience of surviving a terminal illness.

The metaphorical resonances of cancer underscore this interpretation. Early in the narrative, shortly after the discussion on cancerous cell division, Lena is shown conversing with her husband about aging and death, which, in her view, stem from a built-in "suicidal" genetic program. She suggests that, without this program, eternal life could be possible. In her formulation, death itself becomes a manifestation of the body's inherent tendency toward self-destruction, with cancer symbolizing mortality more broadly. The subsequent events of the film explore this central claim through a series of thematic developments. However, this raises broader socio–historical questions: under what conditions has the metaphor of cancer come to be associated with life itself? And why does the trope of an alien invasion serve as an effective lens for exploring this existential dilemma?

Initially, the invaded zone evokes imagery of an untouched, Edenic wilderness. Later, however, it becomes evident that this lushness is not a utopian vision of nature but a pathological one—a deadly, terrifying excess. The nature within the zone evokes the unimaginable "postnatural" condition of the Earth, the "New World" or "Tough New Planet" that McKibben describes in *Eaarth* as a result of climate change: "This is not some mere passing change; this is the earth shifting" (McKibben, 2010, p. 4). The creation of the Shimmer echoes what Mosey terms the "coming tumult" (Mosey, 2009), characterized by "sudden changes in the climate system" and the "irreversible" nature of the transformations (Leggett, 2014, p. 112). In this context, the "threat" of environmental collapse transitions from a distant possibility to a present reality—one that, according to many climate critics, is no longer avoidable (Hageman, 2019, p. 260). Thus, the film's depiction of the zone can be interpreted not only as a metaphor for a terminal disease but also as a reimagining of climate change as a terminal illness.

In environmental literature, the ecological crisis has often been described using the imagery of terminal illness. In his 1991 book *Gaia, The Practical Science of Planetary Medicine*, Lovelock claimed that the planet is becoming "sick" due to the destructive behavior of modern humans (p. 153). Similarly, the ecophilosopher Erazim Kohák ponders whether "there are too many of us, that we are too powerful and want far too much for the Earth to sustain. We have become a cancerous growth" (Kohák, 1998a, p. 254). However, in another paper, he suggests that this may be humanity's fate:

> All through the history of life upon this earth, one species has replaced another. Nature's way of maintaining a balance of life is to overproduce and overkill, mocking our attempts at conservation and preservation alike. Time and time again, species have overexpanded and self-destroyed. Cancer, it seems, is not an anomaly but the metaphor of life. (…) [W]e move inexorably toward destruction, seemingly powerless to do anything about it. Here it is hard to avoid a sense of the ecological crisis as fate. (Kohák, 1998b, p. 264)

The narrative of *Annihilation* draws a parallel between the mutations occurring within the zone, the cancerous process within the human body, and the self-destructive tendencies of Western civilization, particularly as expressed through urbanization and consumerism in ecological discourse. Paradoxically, the film's visuals do not convey only doom and gloom. The vibrant vegetation within the alien zone may be merely a facade, and Lena's description of it as "amazing" could reflect her altered perception

under the influence of the infection. However, the viewer's response may parallel Lena's, as the filmmakers' deliberate use of aesthetics—at times painterly, at other times awe-inspiring—is undeniable.

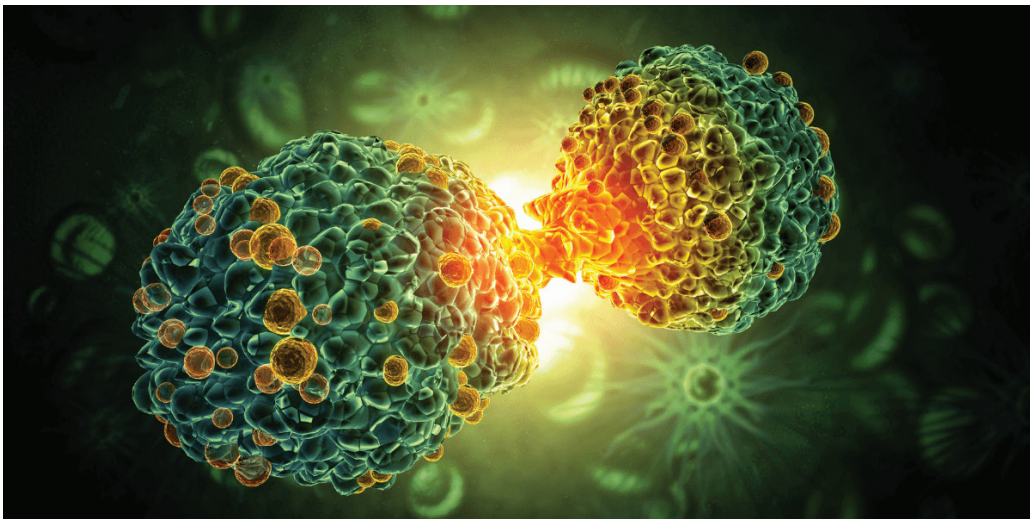
The mold-like stains on the walls and trees, which produce striking and fantastical color effects, can be seen as an attempt to aestheticize phenomena traditionally viewed as "abject."

Figure 1
Mutant creatures in the Shimmer

Source: Public domain.

Similarly, while the initial depiction of cancerous cell division is shown in stark black and white, within the zone, these cells are rendered in vibrant, almost surreal colors. This shift is not merely a product of the filmmakers' creative license; rather, it reflects how scientists have historically depicted cancer cells in electron micrographs, artificially enhancing their colors for research purposes. The film elevates these scientifically produced images into aesthetic objects, drawing attention to their visual impact and the sense of wonder they evoke—an experience typically reserved for scientists like Lena. In an online article about the latest electron microscope models, a scientist remarks: "As a professor of microscopy, I see this every day and, to be honest, I never cease to be amazed at what kind of features one can see in different kinds of materials. We want to share that sense of wonder" (Hemsworth, 2022).

Figure 2
Cancer Cells



Source: USC Viterbi.

The remains of those claimed by the zone often resemble contemporary art installations that explore the human body—works that, like the Body Exhibitions, seek to reframe the human form as an object of contemplation. Such installations typically challenge Western civilization's long-standing discomfort with corporeality while simultaneously critiquing the irrationality of ecological destruction and affirming the cyclical nature of life, even at the expense of individual existence. However, this aestheticization of death and mutation raises critical questions: Does the film's visual approach to cancer and death soften the dread traditionally associated with these phenomena? By portraying cancer as a systemic, almost inevitable process rather than an isolated anomaly, does the film attempt to beautify or normalize death, presenting it as a fundamental—perhaps even necessary—part of life-support systems? Should we look at cancer as a metaphor for the natural yet unsettling process through which ecosystems "dispose" of species that fail to adapt to changing conditions? *Annihilation* demonstrates how cancer can be made beautiful, but the question remains: why?

Mutation as Adaptation

In evolutionary theory, mutation is recognized as a key mechanism of adaptation, with the principle of large numbers ensuring that new genetic variations continually emerge—some of which may prove more viable than their predecessors. Mutation, therefore, is not solely

a destructive force; it is also a generative one, gradually reshaping the very systems upon which life depends. As the narrative of *Annihilation* unfolds, it becomes increasingly evident that the radiation within the Shimmer functions as a transformative force—scattering, selecting, and recombining genetic material to produce new life forms. The accelerated transformation mirrors genetic mutation but unfolds at an exponentially faster rate—a phenomenon particularly relevant in environments where organisms must rapidly adapt to unpredictable conditions, such as those generated by impending climate change.

The mutants within the Shimmer frequently arise from the fusion of genetic traits drawn from vastly different organisms, resulting in improbable "crossbreeds," as Lena observes. While many of the newly formed creatures are unique and ultimately doomed to extinction, some—like Lena and her husband—survive. These hybrids occasionally resemble benign experiments of nature; however, they are just as often unstable or non-viable. Some suffer physically and perish, as exemplified by the soldiers of the first expedition, while others undergo psychological disintegration as their fixed identities are eroded through hybridization. This is notably the case with Cassie, a member of Lena's team, who becomes fused with the bear that killed her—a transformation marked by terror and the dissolution of self. The pain associated with transformation appears intensified when met with fear or resistance. This contrast is illustrated by another team member, Josie, whose mutation into a plant-like form occurs without visible suffering. She becomes a human-shaped shrub, positioned among similar figures who may once have been human as well. Unlike Cassie, Josie embraces the transformation, and her surrender to the process renders her transition peaceful—even serene.

The film emphasizes that these transformations are structurally analogous to the processes of cancer. Yet rather than depicting cancer solely as a pathological condition or agent of destruction, *Annihilation* reimagines it as a force of emergent creation—one that counterbalances the anthropogenic disruptions characteristic of the Anthropocene. This reframing stands in stark contrast to Susan Sontag's influential and oft-cited assertion that "[n]obody conceives of cancer the way TB [tuberculosis] was thought of—as a decorative, often lyrical death. Cancer is a rare and still scandalous subject for poetry; and it seems unimaginable to aestheticize the disease" (Sontag, 1978, p. 20). In the context of an escalating ecological crisis, however, the idea that mutation—including cancerous mutation—could possess evolutionary or aesthetic significance no longer appears entirely implausible. In *Annihilation*, illness becomes paradoxically aligned with cure—an idea that would later resonate with certain ecological discourses during the COVID-19 pandemic, albeit independently of the film's release.

The film ends with the apparent dissolution of the Shimmer, a possible remission of the illness of the world; however, Lena and her husband are released back into civilization transformed (in this case, probably cloned). This implies that the Earth can no longer be "cured" of the changes to come. As with metastatic cancer, where the mutation spreads throughout the body, transformation will now be carried by the newly emergent post-human species. The Shimmer may eventually give rise to a fully realized "postnatural" ecosystem—a possible allegory for the planetary conditions that climate change may soon produce.

The cancerous transformations in the Shimmer also suggest a new form of inter-dependence and interspecies collaboration. These transformations evoke the concept of symbiogenesis, as developed by biologist Lynn Margulis. Collaborating with James Lovelock on the Gaia hypothesis, Margulis challenged the orthodox Darwinian view that new species arise primarily through random mutation. Instead, she proposed that evolution is driven primarily by symbiosis—the merging of two or more microbial species (Hayles, 2024, p. 90). This vision also informs the work of Donna Haraway, who in *Staying with the Trouble* (2016, p. 60) articulates the concept of the Chthulucene—a framework that emphasizes the interconnectedness and multispecies collaboration essential for survival. Haraway contrasts this with the Anthropocene, which she critiques for its anthropocentric orientation (2016, p. 31). *Annihilation* aligns closely with the Chthulucene's embrace of entangled, often "monstrous" relationships as foundational to life on Earth.

The final union of Lena and her husband's clone suggests that the alien presence may serve as the origin point of a new form of life, reminiscent of the biblical myth of Adam and Eve (Parker, 2020, p. 162). The comet's impact at the lighthouse evokes apocalyptic imagery, alternatively, a symbolic Big Bang—signifying not merely the destruction of the old world but the birth of a new one, thereby rewriting the biblical account of creation. Yet, in this process of creation, the human species is no longer central. Lena's initial reflections on biotechnology as a tool to eliminate genetic defects and extend life reinforce a belief in human exceptionalism. However, within the Shimmer, human development becomes indistinguishable from other natural processes; it is merely one of many possible evolutionary outcomes. Consequently, the protagonists become increasingly "less human." Rather than advancing toward a "transhuman" state—where technology augments human capabilities—the transformation depicted in *Annihilation* moves toward a "posthuman" paradigm, in which human identity dissolves into broader ecological and biological processes.

Haraway invokes ancient mythologies to celebrate the neglected rhythms and necessities of organic life. In a similar vein, *Annihilation* employs mythological symbolism to highlight the creative processes at work within the Shimmer, positioning them in stark opposition to familiar traditions of creation. In Greek mythology, female deities such as Gaia, Mother Nature, and Demeter personify different aspects of natural generativity. In *Annihilation*, the mysterious presence within the lighthouse bears distinctly feminine associations. The film's central transformative force is imbued with vaginal symbolism, marking a break from traditional male-centric creation myths. The radiance emerges from a dark, organic space beneath the lighthouse, its walls resembling bodily organs. The fissure leading into this space has an aperture-like shape, bordered by a formation reminiscent of pubic hair. Within, the interplay of fire and luminescence evokes the womb—frequently symbolized in mythology by furnaces or volcanoes. This imagery suggests that the cave functions as the generative heart of the Shimmer.

This model of creation directly opposes the patriarchal notion of *creation ex nihilo*—the idea of creation "from nothing," often associated with the father figure in ecocriticism. This framework privileges spirit and consciousness over matter, relegating the biosphere to a subordinate role. In contrast, creation within the Shimmer does not emerge from nothing but through transformation, recombination, and variation. Yet the reproductive logic at play is not traditionally human: the act of creation within the lighthouse resembles neither the pain of childbirth nor a sexual antecedent. Instead, an alien entity forms a clone of Lena from a single drop of blood, with the process unfolding cell by cell. This provokes a crucial question: What kind of Mother Nature emerges in this new paradigm—one who creates not through sexual reproduction but via cloning and genetic manipulation? Why does the film bypass traditional representations of human birth, where life emerges from the female body, as envisioned in many nature-centered religious systems?

The answer may lie in Andrew Hageman's provocative question: "If an ecological cultural revolution is needed on Earth, wouldn't that include re-imagining the structures of human love and reproduction?" (2019, p. 260). The tumor Lena examines at the film's outset—identified as "cervical cancer in a woman in her thirties"—is explicitly linked to fertility. If cancerous cell division constitutes the primary mode of creation within the Shimmer, it may be interpreted as an allegory for ecological crisis—perhaps even a form of cervical cancer afflicting "Mother Nature." Indeed, cancer has long served as a metaphor for environmental destruction within ecological discourse. Early ecocritical texts frequently portrayed urban environments as malignant tumors parasitizing the body of Nature. In contrast, *Annihilation* presents a more ambivalent vision of cancer—as both

mutation and adaptation. The biological transformations that occur, particularly in the film's climactic scenes within the cave, do not signify sterility or collapse. Rather, they point to an alternative model of reproduction—one that is non-normative, unsettling, and disruptive of gender binaries and traditional reproductive logics. This vision resonates with Haraway's *A Cyborg Manifesto*, in which she writes, "We require regeneration, not rebirth, and the possibilities for our reconstitution include the Utopian dream of the hope for a monstrous world without gender" (1987, p. 37). If humanity is to survive within this new paradigm, *Annihilation* suggests that the erasure of gender itself may be among its transformative possibilities.

Conclusion

Over the past two decades, the concept of "the human" has undergone a profound transformation in both interpretation and value. The human sciences have developed a new, post-anthropocentric vision of the living world. In this framework, humanity is no longer positioned as a privileged species above all others, defining itself through separation from the world as "Other."[2] Instead, the notion of immersion in the natural world has shaped ecocentric ethics, while the recognition of technological entanglement has led to the emergence of posthumanist philosophies.

Posthuman ecocriticism is "replacing well-established dualisms with the recognition of deep zoe-egalitarianism between humans and animals" (Braidotti, 2013, p. 71), which also includes the technological other. As Braidotti claims,

> The posthuman predicament is such as to force a displacement of the lines of demarcation between structural differences, or ontological categories, for instance, between the organic and the inorganic, the born and the manufactured, flesh and metal, electronic circuits and organic nervous systems. (2013, p. 89)

According to Serpil Oppermann, it is high time for posthuman ecocriticism to "scrutinize the intertwined experiences of emerging naturecultures to build novel forms of post-anthropocentric discourses" (Oppermann, 2016, p. 33).

In *Annihilation*, these "intertwined experiences of emerging naturecultures" are rendered through the hyperbolic effects of the Shimmer. The transformations and mutations

[2] "the impending 'end' of humanity, like the notorious final paragraph of Michel Foucault's The Order of Things, in which Foucault contemplates the possibility that 'man' might 'be erased' (…), are not to be taken literally. They instead invoke 'the end of a particular image of us', which casts us as a 'hard Cartesian Ego' radically distinct from the world" (Hauskeller, 2015, p. 2).

occurring within the zone evoke the impact of biotechnology—the defining feature of "our posthuman future," as Francis Fukuyama argues—aligning with Eduardo Kac's observation that,

> In the age of molecular biology, rather than operating at the glacial pace of geological time, evolution both annihilates a percentage of the extant flora and fauna and produces new life and new relationships (symbiosis, parasitism, assistance, predation, hybridization, infection, cooperation) within the life cycle of a single human being. (Kac, 2007, p. 4)

However, the strange phenomena occurring within the Shimmer are not the direct result of human (or extraterrestrial) intervention into life, but rather symptomatic of a larger, interconnected web of life that encompasses both human and nonhuman entities—a vision that Donna Haraway's notion of the *Chthulucene* urges us to embrace. Although the film does not explicitly foreground ecological concerns, it is not implausible to draw parallels with climate change, particularly in its depiction of an irreversible, "postnatural" state of existence.[3] This claims that the Shimmer is "the ideal metaphor of the Anthropocene epoch" (Nemes, 2018, p. 7), both compelling and yet ultimately incomplete.

While the film's rapid mutations reflect the ecological disruptions characteristic of the Anthropocene—an era shaped by human-induced environmental instability—the changes depicted are not simply destructive. Rather, they can be understood as reactive processes: examples of the planet's positive feedback mechanisms that strive to restore ecological balance. In this sense, the Shimmer functions less as a metaphor for Anthropocene destruction and more as a site of recovery from it. It is, in effect, an allegory of the post-Anthropocene. This dystopian-turned-utopian dimension of the film is powerfully encapsulated in the tension between its central motif—cancer—and the lush, mesmerizing visual imagery through which this motif is expressed.

At first sight, Susan Sontag's assertion in *Illness as Metaphor*— "cancer is degeneration" (1978, p. 13)—aptly applies to the organisms within the zone. Yet, in a striking reversal of this characterization, the mutated landscape remains picturesque, and the protagonist, like others, does not view the transformations occurring within them as inherently negative. At the beginning of this study, mutation was introduced as a central concept linked to posthumanism, challenging traditional humanist ideals by questioning the boundaries between human, non-human, and technological entities. The concept of the Chthulucene

[3] The film is a frequent target of posthumanist and ecocritical approaches: see for example Parker, 2020, p. 158–163; Blazan, 2021, p. 67–90.

complements this view by emphasizing the interconnectedness and multispecies collaboration necessary to navigate these accelerating transformations. In the context of *Annihilation*, mutation appears as a strange form of "multispecies collaboration" and adaptation, accelerated to an extreme by the mysterious phenomenon of the Shimmer.

This collaboration is echoed on a social level as well, although *Annihilation* does not offer a clear moral endorsement of an ethics of solidarity—often considered by critics to be a fundamental aspect of "posthuman ethics" (cf. Nayar, 2014, p. 48; Braidotti, 2013, p. 185). However, the dissolution of the binary between self and other opens up the possibility that care for the self need not be opposed to care for the other. The film's final moments, in which the estranged protagonist and her partner re-encounter one another, gesture toward this transformation. Their tentative reunion can be interpreted as a metaphor for a new form of belonging—one grounded in the recognition that survival in a transformed world requires cooperation, permeability, and relationality, rather than isolation and mastery. Through this lens, *Annihilation* not only reflects the challenges posed by posthumanism but also underscores the urgency of confronting ecological crises by rethinking our relationship with both the environment and the technologies we have created. The monstrous yet fascinating aspects of the Shimmer emphasize the need to embrace the complexity and unpredictability of our world, fostering a more symbiotic and respectful coexistence with all life forms.

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