New Horizons in English Studies 7/2022

CULTURE & MEDIA

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"I don't need your help! I'm a scientist!" Biotechnology, Digital Visual Effects, and (the Lack of) Human Control of Life in *Zoo*

Abstract. This article explores the American television series *Zoo* (CBS, 2015–2017). The show's convoluted narrative revolves around mutations that are put into motion by genetic engineering. These mutations first affect animals and later humans. The article argues that the biotechnological control of life, which takes center stage narratively, is mirrored in the television show's use of digital visual effects to create animals. More importantly, *Zoo* suggests that this control of life is nothing but an illusion, as the mutation quickly gets out of hand and leads to unexpected consequences. Thus, the television series reflects the Anthropocene condition, which is characterized by the emergence of humankind as a planetary force; however, the planetary effects of anthropogenic activities have been largely unwanted. While *Zoo* seems to expose these processes of our age, the article also stresses that as a television show, *Zoo* must reach a broad audience. Thus, the critique of human fantasies of planetary control are, somewhat paradoxically, accompanied by an anthropocentrism which arguably undermines the show's ecological subtexts.

Keywords: science fiction, American television, technoscience, genetic engineering, biotechnology, environmental criticism

1. Introduction

Adapted from James Patterson and Michael Ledwidge's eponymous 2012 novel, CBS's summer show *Zoo* (2015–2017) has been described as a "wild-animals-scare-the-dung-out-of-humans adventure series" (Tucker 2015) that is garnished with some

DOI: 10.17951/nh.2022.7.101-115

"preposterous science" (Ashby 2015).[1] As the first quotation in the previous sentence, lifted from Ken Tucker's review, indicates, *Zoo* was originally marketed as a show revolving around animals attacking humans. A voiceover that accompanies the first season's opening credits makes the show's main selling point explicit: "For centuries, mankind has been the dominant species. We've domesticated animals, locked them up, killed them for sport. But what if, all across the globe, the animals decided, 'No more'? What if they finally decided to fight back?" (Pinkner and Rosenberg 2015a).[2] By making its narrative premise explicit, the series also acknowledges its generic lineage in the animal horror tradition. At its core, *Zoo*

> tells the story of how a particular animal or an animal species [or, in the case of *Zoo*, all animal species] commits a transgression against humanity and then recounts the punishment the animal must suffer as a consequence. In this way, the horror that most animal horror … depicts turns on an attack on human beings by an animal. This is the case even in the many films where humans are to blame for this attack by first violating the territory of the animal or by controlling the animal,

to quote from Katarina Gregersdotter, Nicklas Hållén and Johan Höglund's introduction to *Animal Horror Cinema* (2015, 3–4).

The show wastes little time to deliver on the promise to present animal attacks. After the series has established the long-lasting bromance between safari guides Jackson Oz (James Wolk) and Abraham Kenyatta (Nonso Anozie), the two characters scare off a black rhinoceros when a licensed hunter wants to shoot the animal, thereby clarifying that the two do not want to exploit – let alone unnecessarily kill – animals (while participating in a tourist industry whose involvement in environmental destruction is conveniently ignored). From Botswana, the action jumps to Los Angeles, where two male lions attack two men. The next morning, a television reporter explains, "Three dead and five others wounded as a pair of lions escaped City of Angels Zoo and made their way into the crowded Mid-Wilshire section of Hollywood, where they killed two more men in an alley" (Appelbaum et al. 2015). *LA Telegraph* reporter Jamie Campbell (Kristen Connolly) is convinced that the "lions behaved entirely out of character" (Appelbaum et al. 2015), which is why she decides to investigate the attacks. Back in Africa, Jackson and Abraham find a camp that a group of lions invaded – twenty-two people are dead.[3]

[1] *Zoo* embraces the "preposterousness" of the "science" depicted. The show repeatedly self-referentially highlights how it diverges from accepted "facts." For example, in the episode "Caraquet," an African elephant appears in Argentina. Upon seeing the animal, one of the characters wonders, "How did an African elephant find its way to Patagonia?" (Oh and Parker 2016).

[2] This is the wording used in the second episode, which is the first time the voiceover is used. In episode two, the short speech is delivered by the character Professor Robert Oz. The speech differs slightly when uttered by other characters in the course of the season.

[3] I use "group" (rather than "pride") to highlight that the show suggests that the lions may have gathered to attack despite lacking the structure of a pride.

The killing sprees in Botswana and Los Angeles are no isolated incidents, either. In Slovenia, a pack of feral dogs kills tourists; in Jakarta, a rhino tramples three tourists to death; in Japan, a swarm of bats attacks planes; in the United States, a pack of wolves overruns a prison; and in Germany, six brown bears emerge from a forest and raid the city of Wuppertal.

These cases of "aberrant" animal behavior are introduced in the first couple of episodes and allow *Zoo* to set up its plot: a genetic mutation unleashed by products of a globally operating biotech company causes animals around the world to "develop a biological imperative to destroy" (Kettner 2015) the human race. While the grumpy, somewhat misanthropic veterinary pathologist Mitch Morgan (Billy Burke) is – at first – certain that these events do not anticipate "the coming of the animal apocalypse" (Harris-Lawrence 2015a), by the end of season one, the human-animal conflict has reached fever pitch, as humankind seems determined not only to ensure its continuing dominance of the planet, but also to "play God" by "recreat[ing] … every species on Earth, from domestic dogs and cats to alligators and zebras, … from … healthy, unaffected DNA" (Pinkner and Rosenberg 2015b). But before this "re-population" (Pinkner and Rosenberg 2015b) and the attendant process of species purification can be put into motion, the planet has to be cleansed of all animal life. Accepting this intended mass extermination for the sake of de-extincting animals and re-populating the planet exposes humanity's nearly compulsive drive for mastery of, and the related impact of anthropogenic activities on, the planet.[4]

"Humanity's progress has guided our world to the edge of destruction," Jackson's father, Professor Robert Oz (Ken Olin), tellingly muses in a video recording that is prominently displayed in the first episode. Professor Oz draws on a notion of progress that may be traced to the Age of Reason which that is "closely associated with the development of science and technology" (Channell 2017, 256). In addition to scientific and technological advancements, human progress rests on the establishment of a "hierarchy of beings in a single ordered series" (Latour 2004, 25; original in italics), with White, heterosexual men perched atop, ruling over human Others and the natural world.

Zoo, I suggest, takes this hierarchical worldview to the extreme by interconnecting human progress with "the technological subjugation and perfection of nature" (Beck 1995, 29), which is made possible by genetic engineering. In so doing, the show acknowledges that human history is defined by "our growing capacities to control, manage, engineer, reshape, and modulate … living creatures" (Rose 2007, 3). However, *Zoo* makes explicit that humans cannot control their "naturalcultural" (Haraway 2016) creations. As such, the show may seem to critique humankind's attempts to dominate

[4] I replicate the (simplistic) human-versus-animal divide that the series establishes here. Of course, various scholars have highlighted that "the human" "transpos[es] a specific mode of being human into a generalized standard" (Braidotti 2013, 26) and thus ignores (or even erases) the variety of "genres of the human" (Weheliye 2014, 2). Likewise, "the animal" is "a fictitious tableau …, a sort of classification after Linnaeus" (Derrida 2008, 13).

and manipulate the nonhuman world and, accordingly, tell a cautionary warning tale against the exceptionalist view of humankind that Westerners have cultivated since the Enlightenment. However, as I will demonstrate, this ecological subtext is filled with paradoxes. After all, broadcast in a primetime slot on one of the three major traditional television networks in the United States, *Zoo* was an entertainment product made for mass consumption (even if the show never reached those masses and remained a niche offering). As such, the series is embedded in different economic, political, and social contexts that complicate the show's meanings and politics. Tellingly, David Ingram has pointed out that mainstream movies tend to exploit their alleged environmental concerns, subjecting their ecological subtexts to the Almighty Dollar:

> Hollywood cinema has treated environmentalism in the same way as all other topical issues … Political subjects are … appropriate when they can provide scriptwriters and directors with the … "dramatic potentials" and "angles" that they require to make a commercial movie. (2000, viii)

What is true of films also holds true for television shows in this respect. Although actor James Wolk promoted the show's ecological subtext as part of its "wider message" (Keveney 2015), *Zoo* tells what Ingram has called an "anthropocentric, human interest story" (2000, 10). This aspect becomes particularly pertinent in the season three finale (which stands as the series finale, as the show was canceled in the fall of 2017), in which Jackson chooses to save the life of one human being over stopping a new kind of mutation in the animal kingdom from spreading across the North American continent. In the melodramatic and overly clichéd conclusion, Jackson emerges as the potential savior of humankind because of his desire to protect a baby, which comes to embody humanity's future. In so doing, the series ending perpetuates the Western system of biopower, whose biopolitics establishes the hierarchical division of life (species, but also human "races") based on value judgments and the attendant division of lifeforms into agents and patients – those in control of their lives and those whose lives are controlled by others.

In this article, I will accordingly present three interrelated arguments. The biotechnological manipulation of animal life that drives *Zoo*'s narrative is reflected in the show's use of digital visual effects to (quite literally) render animal bodies. Whereas technology grants the show's creators control over the digital animals, human control of life proves to be an illusion, demonstrated by the devastating, unexpected consequences that the biotechnological interventions effect in the diegesis.[5] Thus, *Zoo* reflects the dynamics of the Anthropocene, which is characterized by a central paradox: "[d]espite humans' pervasive influence on the planet, our actual control over natural systems remains limited," as Nicholas Kawa states (2016).

[5] As Sharon Sharp details in her contribution to *Fear and Nature* (2021), "*Zoo* also gained notoriety when it became a sustained site of protest by animal advocacy groups for its use of live animals in production" (2021, 239).

2. Illusions of Controlling Life

In *What is Life?* (1944), Erwin Schrödinger explores the physical bases of life. As he clarifies in the book's first chapter, he seeks to answer an "important and very much discussed question … How can the events *in space and time* which take place within the spatial boundary of a living organism be accounted for by physics and chemistry?" (1944, 3). Primarily drawing on the 1935 essay "Über die Natur der Genmutation und der Genstruktur" ("The Nature of Genetic Mutation and Genetic Structure"), Schrödinger concludes that "living matter, while not eluding the 'laws of physics' as established up to date, is likely to involve 'other laws of physics' hitherto unknown" (1944, 68). This sentence implies that Schrödinger struggled with what he perceived to be a central paradox – that in a world subjected to the laws of thermodynamics, life (as such) is not subject to entropy.

While *What is Life?* is an interesting read for a number of reasons, Krishna Dronamraju has suggested that the book's significance lies in Schrödinger's "decided impact in initiating the development of molecular genetics" (1999, 1071).[6] In the book, Schrödinger refers to chromosomes as "some kind of code-script" (1944, 21) that stores "all the future development of the organism" (1944, 61), thereby reducing life to a code that may be deciphered and manipulated. Schrödinger's symbolic gesture demystifies life and renders it comprehensible. As "the genetic code" thus becomes imagined "as an information system and a Book of Life" (Kay 2000, 2–3), the concept of life severs its ties from actual life. Life becomes transplanted into the semiosphere, where it begins a new kind of existence as a simulation of life. In his essay "The Orders of Simulacra" (1975), Jean Baudrillard tellingly concludes, "It is therefore in the simulacrum of a 'nature' that the modern sign finds its value" (1983, 86). As "a specific cultural model of nature" emerges (Beck 1995, 54), the concept of "nature" both gradually replaces the material bases of "nature" and comes to define what these material bases, in fact, are. As a result, "the whole world lives and thinks in a terminology connoting technological mastery and economic utility" (Beck 1995, 167).

Zoo taps into popular DNA discourses to engage with humankind's attempts to control life on the genetic level. For example, when the team consisting of Jackson, Abraham, Mitch, Jamie, and French intelligence agent Chloë Tousignant (Nora Arnezeder) comes closer to understanding the reasons for the animal attacks, Mitch examines a brown bear that made its way into a house in Paris. While investigating

[6] Horace Judson has observed that "the earliest mention of coding that counts was Erwin Schrödinger's … in *What is Life?*" (1979, 244). Likewise, E. J. Yoxen has noted that "the special achievement with which [Schrödinger] is credited is that of formulating the idea of a genetic code" (1979, 19). Lily Kay has, however, explained that Schrödinger's book was, in fact, "far removed" from theories in biology of his day (2000, 3). Consequently, considering the book not just a, but *the*, "precursor to the genetic code" is outright naïve (Kay 2000, 4). Arguably, the significance of *What is Life?* lies less in the ideas the book presents, but rather in its power to inspire readers to pursue careers in biology; however, some scholars have challenged this point, as well (e.g., Walsby and Hodge 2017).

blood samples, he discovers that the animal's DNA has changed. He explains that "the Mother Cell is … accelerating … mutations in the animal kingdom that we would see occur naturally, but not for another several generations – maybe a couple of hundred years – from now" (Harris-Lawrence 2015b). Before Mitch says these words, the bear's DNA structure is visualized as a sequence of bars on a monitor (Illustration 1). The combination of dialogue and images suggests that human beings can decipher the code of life and transform it into human language. Indeed, humans caused the mutation because the "Mother Cell" is "a DNA molecule used to manipulate cellular material on a genetic level" that was developed by the biotech company Reiden Global (Faerber 2015). This Mother Cell "is in every single product Reiden makes" (Faerber 2015). Since Reiden produces "everything from dog food to weed killer," traces of the Mother Cell are "everywhere. It's all over the world, and it can't be stopped" (Faerber 2015).

Illustration 1: The bear's DNA structure is visualized on an intradiegetic monitor. Screenshot from the *Zoo* episode "Sleuths" (season 1, episode 7) © CBS Television, 2015.

Mitch develops an intricate plan that centers on him reverse-engineering a cure against the accelerated mutations by combining the Mother Cell with stem cells from an infected animal. This notion of not only re-writing genetic code, but rather predicting the consequences of these alterations, celebrates late twentieth-century ideas about how scientists had "developed synthetic chemical methods that ha[d] … been optimized to allow [them] to 'write' quickly and accurately [their] own 'text' in the language of DNA" (Jackson 1995, 358).[7] As David Jackson has explained, "The ability

[7] In the sciences, these discourses dominated in the late twentieth century. Postgenomic research "recognizes limitations to the power of the genetic code, calling into question the correspondent

to create text is obviously an extremely important functional capability in any language" (1995, 358). Indeed, by deciphering the code of life, humans merely gained an understanding (or, rather, the *illusion* of understanding) of life, but by altering the code, humans gained control over life (or – at the risk of overstressing the point – the *illusion* of gaining control).

This illusion of control is reflected in the visual aesthetics of *Zoo*. The show excessively employs C-grade digital visual effects to depict many of the animals featured in the diegetic world (Illustration 2). These visual effects ensure that the animals seen on the screen are "no longer limited by the real animal," since digital technologies "allow us to scan and refigure the real animal to make it exactly what we please" (Fudge 2002, 88). In this way, the digital visual effects create the illusion of controlling the animals.

Illustration 2: The low-budget digital effects highlight their constructedness. Screenshot from the *Zoo* episode "Jamie's Got a Gun" (season 2, episode 7) © CBS Television, 2016.

The digital animals are made of code, shaped by sequences of 0s and 1s, which take inspiration from representations of animals rather than actual, living beings. In this way, signs (the digital animals) are made up of signs (the digital code), which are based on other signs (representations of the animals). As such, the digital animals are what Kristen Whissel has called "Nature Plus" (2014, 96) in two respects. Within the diegesis, they are "excessive forces of nature" (Whissel 2014, 96), as the animals possess super-natural skills and traits – the French bears grow an endoskeleton, big cats communicate telepathically over long distances, various bird species develop a common

and omnipotent associations of twentieth-century molecular biology" (Sidler 2006, 68). However, popular culture representations of bioengineering still feed off ideas born in the 1980s and 1990s.

language, and so on. Indeed, in season two, the team encounters ants that can generate electricity (a power that the insects want to harness to blow up the Hadron Collider) and a sloth that can cause earthquakes, among others. Secondly, beyond the limits of the diegetic world, "Nature Plus" suggests that the animals' spectral lives in computer databases have resulted in (digital) representations' usurping of real-life animals: animal representations replace actual animals, thereby satisfying humanity's control fantasy, as barely controllable wild animals become framed by the technoscientific imagination, which tames and domesticates them without the need for direct contact with the actual creatures.

3. Losing Control and Being Eaten

While the digital manipulation of animal bodies in the show's production mirrors the digital manipulation of animals' genetic information in the diegesis, the spectacular images of digital animals also invite the audience to linger on them. After all, *Zoo* thrusts cheap digital visual effects on viewers in a way that asks the audience to accept the constructedness of the digitally crafted creatures, which produces a dissonance, as the obtrusive presence of the digital animals thwarts the creation of a coherent storyworld. Instead, the hypermediated digital visual effects draw viewers' attention to the fact that "the nonhuman is mediated through human technology" (Narraway 2013, 218). The images, thus, acknowledge that nonhuman creatures and entities are always-already embedded in anthropocentric discourses that transform nonhuman elements "into objects and renders them passive, inert, manageable, and controllable" (Ivakhiv 2013, 3).

Nevertheless, within the storyworld, the digital animals are authenticated through their interactions with (primarily) human characters. As Stephen Prince argues in his book *Digital Visual Effects in Cinema* (2012), digital tools provide filmmakers with a means for "anchoring the scene in a perceptual reality that the viewer will find credible because it follows the same observable laws of physics as the world s/he inhabits" (2012, 32). In his reflections on *Jurassic Park* (1993), Prince elaborates on this point, stressing that "dinosaurs are not living beings in the age of cinema," but the prehistoric creatures may become "perceptually realistic" because of how they act in the diegetic world and interact with their diegetic environment (2012, 32). When applied to *Zoo*, these ideas suggest that the digital creatures "are real within the referential terms of the story" (Prince 2012, 33), as they appear to inhabit the diegetic world – to *live* in this imagined universe.

Somewhat paradoxically, Kristen Whissel has observed that "[t]he vitality of digital creatures … exists in a dialectical relationship with death; they seem most lifelike when their deadliness and mortality are on display" (2014, 99). *Zoo* illustrates this point, as the digital animals' liveliness in the diegetic reality contrast with their association with death. In *Zoo*, the animals' connection to death conveys two opposite – yet interconnected – ideas: the animals may die and they may kill. The nonhuman

creatures depicted in the series are not immortal according to the logic of the imagined world.[8] In particular, human characters kill animals, including their pets: "All of my neighbors have shot their animals," reports a man whom Abraham meets in Harare because they feared that their beloved animal companions would turn on them (Kettner 2015). However, the animal kingdom faces an even larger threat: by the end of season one, Reiden – the "biotech company that started this whole animal mess," as Mitch points out (Pitts and Glenn 2016) – has convinced the newly established International Animal Defense Group that the best way to handle the animal threat is wiping out all the animal species across the globe and then re-populating the planet with genetically pure specimens. While the animals are on the brink of anthropogenic extermination, they simultaneously pose deadly threats to humans. As *Zoo* repeatedly stresses from the first episode, the animals' primary goal is to "take down the human race" (Pinkner and Rosenberg 2015a). Indeed, in the first couple of months of the human–animal conflict, the human population has suffered "17,000 casualties worldwide" (Pinkner and Rosenberg 2015b). Once humans around the world have taken notice of the changing animal behavior, the animals "seem to have stopped feeding on each other" (Pinkner and Rosenberg 2015b). Instead, the animals feed on humans.

One of the few scenes in which the audience witnesses an animal preying on a human occurs in the season one episode "Wild Things" (2015). In the episode, Jackson is hospitalized in Harare, which is under attack by big cats. Screams jolt him out of his sleep. A brief reaction shot shows Jackson in utter disbelief as he pulls open the curtain of his bed. In the adjacent beds, two teenagers are screaming while staring at the door. As the camera slowly begins to move, viewers can hear the sounds of bones cracking. A leopard is feeding on a human body, maybe thirty feet from the two teens and Jackson. While the leopard's gory deed remains unseen, the sounds of bones shattering engage viewers somatically, as the leopard attack reminds viewers of the fragility of the human body by calling to mind that humans live "in a messy, complicated, resistant, brute world of materiality" (Grosz 2004, 2). Drawing on Val Plumwood's reflections on being attacked by a saltwater crocodile, the moments of animals feeding on humans in *Zoo* highlight our "own vulnerability as an edible, animal" species (2012, 10). Animal predation on humans, Sherryl Vint has remarked, "remind[s] us that humans, too, are animals, despite a long philosophical tradition … that insists upon a separate kind of being for human subjects" (2010, 8).

Mitch makes this idea explicit when he elaborates on the trophic scale, which "is an index of where everything falls on the food chain. Apex predators are a five … Humans, contrary to popular belief, are only a 2.2, alongside pigs and anchovies" (Faerber 2015). He continues, "[O]nly two things allow us to behave like fives: our ability to reason and

[8] The "immortality" of some animals may be a question that the creators of the show meant to tackle in season four. In the season three finale, a genetically modified wolf-hyena hybrid mauls a dog. Believed to be dead, the dog starts breathing again some time later, rising from the dead like a zombie.

our technology" (Faerber 2015). Here, *Zoo* emphasizes humanity's difference from the other animal species roaming the planet but simultaneously "provides us with a perspective that can help us to see ourselves in ecological terms," which "disrupt[s] our view of ourselves as set apart and special," as Plumwood has noted (2012, 16–17).

In addition, the series exposes the fragility of the myth of human exceptionalism. After all, the animals do not "simply" prey on humans. After the initial lion attacks in Botswana, Jackson's mother Elizabeth (Bess Armstrong), a doctor, stresses that the big cats did not feed on the humans, but rather tortured and slaughtered them: "When lions kill, they go for the throat. It's quick. It's efficient. But these bodies – every one of them has the femoral arteries slashed. These people – they died slow, painful deaths" (Pinkner and Rosenberg 2015a). She, thus, suggests that instead of reacting to stimuli in their environment, the lions participated in a premeditated act that is believed to be reserved to humans – murder. In this way, the show not only indicates that human beings do not (and cannot) fully comprehend life on the planet, but also highlights that humankind is only one of many agents on Earth. This understanding of humanity's entanglements in networks of life proves key to the environmentalist potential of *Zoo*, as the very notion of humankind being merely one of hundreds of thousands of actors on the planet radically challenges the control fantasy.

4. Life in the Anthropocene

This biocentric notion centering on the interconnectedness of animate and inanimate agents on the planet is closely tied to the Anthropocene condition. To be sure, the Anthropocene has become one of the most prolific ideas across disciplines since atmospheric chemist Paul J. Crutzen popularized the term in a 2002 *Nature* article.[9] Early conceptualizations of the Anthropocene emphasized that "[h]uman activities have become so pervasive and profound that they rival the great forces of Nature" (Steffen, Crutzen, and McNeill 2007, 614). More recent formulations have, however, stressed that the effects of anthropogenic activities are, in fact, largely beyond human control, despite the far-reaching effects that human activities have had on the planet. Accordingly, humankind is a planetary force; at the same time, there is a growing awareness of being out of control, since human and nonhuman lifeforms as well as other nonhuman agents are entangled in complex systems that humankind fails to fully comprehend.

The out-of-control mutation in *Zoo* reflects these ideas. The Mother Cell embodies human hubris and the attendant belief that humankind would be able to decode the

[9] Crutzen's co-authored article with Eugene F. Stoermer, which appeared in the *Global Change Newsletter* in 2000, is often considered the origin of the term. However, Stoermer had already used the term – albeit in less formalized fashion – in the 1980s (see Steffen et al. 2011, 843), while Andrew C. Revkin's popular book *Global Warming* referred to the "Anthrocene" in much the same way as "Anthropocene" is used today (1992, 55 and 93, in particular).

complexities of life with the help of technoscience and then truly come to understand life. To little surprise, the use of the Mother Cell effects unexpected changes in the genetic configurations of animal species across the globe. However, the Mother Cell does not simply symbolize humanity's infatuation with "playing God," but rather epitomizes the interrelations between anthropogenic activities and capitalism. After all, although viewers never really get to know what the Mother Cell, in fact, does or is, it "allows [Reiden Global] to be faster, better, cheaper" than their competitors (Faerber 2015). The Mother Cell, thus, represents "capitalism as a way of organizing nature – as a multispecies, situated, capitalist world-ecology" (Moore 2016, 6). Indeed, while Mitch succeeds in synthesizing a counteragent that stops the mutations, his success is short-lived, as the cure effectively leads to the sterilization of the human race – not directly, but that is part of the point: human actions and activities tend to have "unintended, potentially disastrous, consequences" (Commoner 2002, 47).

Although *Zoo* raises these issues and purports to be critical of the processes leading to not only the exploitation but, in fact, the destruction of "wild nature," at the end of the day, the show is trapped in its anthropocentrism and the attendant celebration of human control. Granted, the central cast of characters tries to save the animals from exploitative and destructive human activities (at first). However, this narrative motivation problematically draws on the White savior template. Sure, Abraham is from Kenya, and army ranger Dariela Marzan (Alyssa Diaz), who replaces Chloë as a regular halfway through season two and who marries Abraham between seasons two and three, is Latina. However, the leading figures in the projects of protecting the nonhuman animals living on our planet (first) and (later) rescuing the human race are Jackson and Mitch, two White men, who – in their roles as animal behaviorist and veterinarian – are associated with science. The two figureheads of Western science spearhead "a racially diverse team of helpers" (Vera and Gordon 2003, 48), which is typical of contemporary White savior narratives.

The third season embraces White saviorism. Set in the mid-2020s, the final season fully commits to *Zoo*'s dystopian setup, as the show uses a growing number of bleak settings, features increasingly mutated and hybridized animal species, and adds a "sterile humanity" plot. In this world, Dariela and Abraham's ten-year-old son Isaac (Jesse Muhoozi) is one of the youngest humans alive. However, the show quickly focuses on the fate of Sam, the (White and male) baby of Mitch's daughter Clementine (Gracie Dzienny), as the possible savior of humankind, a Christ-like figure whose (not quite immaculate) conception is shrouded in mystery (conveniently, Jackson's long-lost son is the baby's father, however). When Jackson is faced with the decision to save Sam or to keep a new animal mutation from spreading across North America, Jackson does not think twice – the baby is more important than anything else. Of course, to fight for the baby's life means to fight for the human future. However, as Lee Edelman has polemically argued, the discourse of the Child creates a regressive, oppressive, and repressive social order that seeks "to *affirm* a structure, to *authenticate* social order" (2004, 3) that is eternally locked in "the impossible place of an Imaginary past" (2004, 10). For Edel-

man, this imaginary past is inseparable from heteronormativity – and *Zoo* is upsettingly heteronormative.

On a more general level, the imagined past is devoid of modern life's complexities. In the context of *Zoo*, simple cause-and-effect logics replace the multifaceted and convoluted entanglements of contemporary life. This regressive logic not only allows the characters to find easy solutions to the problems plaguing this world, but also re-affirms human control – or, rather, the *illusion* of control. Tellingly, in the final scene of season three, Mitch implores Jackson: "Jackson, think about it: every animal in North America is gonna become part of [a] hybrid army. What then?" (Oh and Parker 2017). Here, Mitch suggests that they cannot even begin to predict the large-scale and long-term consequences of allowing the mutation to spread. Sam, as the emblem of the future, accordingly becomes "tethered to a future that can no longer be taken for granted" (Sheldon 2016, 3). Jackson, trapped in his desire to save the White child (and all the ideological baggage associated with it), simply replies, "One problem at a time, Mitch" (Oh and Parker 2017).

In this moment, Jackson exudes human ignorance, apparently believing that Mitch and Jackson's scientific knowledge will allow them to find a way to rectify their mistakes. Similar to how digital representations of animals create the illusion of controlling animal life and similar to the ways in which the exclusion of humans from the food chain perpetuates a biopolitics that allows human beings to dispose of other lifeforms practically at will, Jackson's decision suggests that humans are in control – possibly not in control of everything, but if one takes one step at a time, even global problems can be solved. Amitav Ghosh has described this approach as "creating discontinuities": "break[ing] problems into smaller and smaller puzzles until a solution present[s] itself. This is a way of thinking that deliberately excludes things and forces ('externalities') that lie beyond the horizon of the matter at hand: it is a perspective that renders the interconnectedness of Gaia unthinkable" (2016, 56). At the same time, *Zoo* consistently – and insistently – stresses what Nigel Clark has called the state of "out-of-controlness" (1997, 88): the various entanglements between human and nonhuman agents render the world much too complex for Jackson's approach to be successful. The show, thus, conveys the idea that humans are little more than poor players in this game called life, whose rules they fail to comprehend.

To be sure, these two interpretations diverge into wildly different directions – but they testify to the "contradictory and convoluted narrative" that resulted from CBS's attempts to "represent human-animal relationships in ways that were … [un]likely to potentially alienate CBS's audiences and advertisers" (Sharp 2021, 240) while simultaneously trying to acknowledge some of the realities of life in the Anthropocene.

References

Appelbaum, Josh, André Nemec, Jeff Pinkner, and Scott Rosenberg, writers. 2015. "First Blood." Directed by Brad Anderson. Season 1, episode 1 of *Zoo*. Originally broadcast on CBS on June 30, 2015.

Ashby, Emily. 2015. Review of *Zoo*. Created by Josh Appelbaum, André Nemec, and Jeff Pinkner. *Common Sense Media*. June 30. https://www.commonsensemedia.org/tv-reviews/zoo.

Baudrillard, Jean. 1983. "The Orders of Simulacra." Translated by Paul Foss. In *Simulations*, 81–159. New York: Semiotext(e).

Beck, Ulrich. 1995. *Ecological Politics in an Age of Risk*. Cambridge: Polity Press.

Braidotti, Rosi. 2013. *The Posthuman*. Cambridge: Polity Press.

Channell, David F. 2017. *A History of Technoscience: Erasing the Boundaries between Science and Technology*. London: Routledge.

Clark, Nigel. 1996. "Panic Ecology: Nature in the Age of Superconductivity." *Theory, Culture & Society* 14 (1): 77–96.

Commoner, Barry. 2002. "Unraveling the DNA Myth." *Harper's Magazine* (February): 39–47.

Crutzen, Paul. J. 2002. "Geology of Mankind: The Anthropocene." *Nature* 415: 23.

Crutzen, Paul J., and Eugene F. Stoermer. 2000. "The Anthropocene." *Global Change Newsletter* 41: 17–18.

Derrida, Jacques. 2008. *The Animal That Therefore I Am*. Edited by Marie-Luise Mallet, translated by David Wills. New York: Fordham University Press.

Dronamraju, Krishna R. 1999. "Erwin Schrödinger and the Origins of Molecular Biology." *Genetics* 153: 1071–76.

Edelman, Lee. 2004. *No Future: Queer Theory and the Death Drive*. Durham, NC: Duke University Press.

Faerber, Jay, writer. 2015. "Blame It on Leo." Directed by Steven A. Adelson. Season 1, episode 5 of *Zoo*. Originally broadcast on CBS on July 28, 2015.

Fudge, Erica. 2002. *Animal*. London: Reaktion Books.

Ghosh, Amitav. 2016. *The Great Derangement: Climate Change and the Unthinkable*. Chicago: University of Chicago Press.

Gregersdotter, Katarina, Nicklas Hållén and Johan Höglund. 2015. "Introduction." In *Animal Horror Cinema: Genre, History and Criticism*, edited by Katarina Gregersdotter, Johan Höglund, and Nicklas Hållén, 1–18. Basingstoke: Palgrave Macmillan.

Grosz, Elizabeth. 2004. *The Nick of Time: Politics, Evolution, and the Untimely*. Durham, NC: Duke University Press.

Haraway, Donna J. 2016. *Staying with the Trouble: Making Kin in the Chthulucene*. Durham, NC: Duke University Press.

Harris-Lawrence, Denitria, writer. 2015a. "The Silence of the Cicadas." Directed by Chris Long. Season 1, episode 3 of *Zoo*. Originally broadcast on CBS on July 14, 2015.

Harris-Lawrence, Denitria, writer. 2015b. "Sleuths." Directed by Dean White. Season 1, episode 7 of *Zoo*. Originally broadcast on CBS on August 11, 2015.

Ingram, David. 2000. *Green Screen: Environmentalism and Hollywood Cinema*. Exeter: University of Exeter Press.

Ivakhiv, Adrian J. 2013. *Ecologies of the Moving Image: Cinema, Affect, Nature*. Waterloo, ON: Wilfrid Laurier University Press.

Jackson, David A. 1995. "DNA: Template for an Economic Evolution." *Annals of the New York Academy of Sciences* 758 (1): 356–65.

Judson, Horace F. 1979. *The Eighth Day of Creation: Makers of the Revolution in Biology*. New York: Simon & Schuster.

Kawa, Nicholas C. 2016. "The Irony of the Anthropocene: People Dominate a Planet Beyond Our Control." *The Conversation*. October 4. https://theconversation.com/the-irony-of-the-anthropocene-people-dominate-a-planet-beyond-our-control-64948.

Kay, Lily E. 2000. *Who Wrote the Book of Life? A History of the Genetic Code*. Stanford, CA: Stanford University Press.

Keveney, Bill. 2015. "Patterson's *Zoo* Taps Into Primal Fears." *USA Today*. June 29. https://www.usatoday.com/story/life/tv/2015/06/29/cbs-summer-thriller-zoo-based-on-james-patterson-novel/29003463.

Kettner, Carla. 2015. "Wild Things." Directed by John Polson. Season 1, episode 12 of *Zoo*. Originally broadcast on CBS on September 8, 2015.

Latour, Bruno. 2004. *Politics of Nature: How to Bring the Sciences into Democracy*. Translated by Catherine Porter. Cambridge, MA: Harvard University Press.

Moore, Jason W. 2016. "Introduction: Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism." In *Anthropocene or Capitalocene? Nautre, History, and the Crisis of Capitalism*, edited by Jason W. Moore, 1–11. Oakland, CA: PM Press.

Narraway, Guinevere. 2013. "Strange Seeing: Re-Viewing Nature in the Films of Rose Lowder." In *Screening Nature: Cinema Beyond the Human*, edited by Anat Pick and Guinevere Narraway, 213–24. London: Berghahn.

Oh, Bryan, and Nick Parker, writers. 2017. "The Barrier." Directed by Michael Katleman. Season 3, episode 13 of *Zoo*. Originally broadcast on CBS on September 21, 2017.

Oh, Bryan, and Nick Parker, writers. 2016. "Caraquet." Directed by Michael Katleman. Season 2, episode 2 of *Zoo*. Originally broadcast on CBS on June 28, 2016.

Pinkner, Jeff, and Scott Rosenberg, writers. 2015a. "Fight or Flight." Directed by Michael Katleman. Season 1, episode 2 of *Zoo*. Originally broadcast on CBS on July 7, 2015.

Pinkner, Jeff, and Scott Rosenberg, writers. 2015b. "That Great Big Hill of Hope." Directed by Michael Katleman. Season 1, episode 13 of *Zoo*. Originally broadcast on CBS on September 15, 2015.

Pitts, Matt, and Melissa Glenn, writers. 2016. "The Day of the Beast." Directed by Michael Katleman. Season 2, episode 1 of *Zoo*. Originally broadcast on CBS on June 28, 2016.

Plumwood, Val. 2012. "Meeting the Predator." In *The Eye of the Crocodile*, edited by Lorraine Shannon, 9–21. Canberra: Australian National E-University Press.

Prince, Stephen. 2012. *Digital Visual Effects in Cinema: The Seduction of Reality*. New Brunswick, NJ: Rutgers University Press.

Revkin, Andrew C. 1992. *Global Warming: Understanding the Forecast*. New York: Abbeville Press.

Rose, Nikolas. 2007. *The Politics of Life Itself: Biomedicine, Power, and Subjectivity in the Twenty-First Century*. Princeton: Princeton University Press.

Schrödinger, Erwin. 1942. *What is Life? The Physical Aspect of the Living Cell with Mind and Matter & Autobiographical Sketches*. Cambridge: Cambridge University Press.

Sharp, Sharon. 2021. "*Zoo*: Television Ecohorror On and Off the Screen." In *Fear and Nature: Ecohorror Studies in the Anthropocene*, edited by Christy Tidwell and Carter Soles, 237–56. University Park: Pennsylvania State University Press.

Sheldon, Rebekah. 2016. *The Child to Come: Life after the Human Catastrophe*. Minneapolis: University of Minnesota Press.

Sidler, Michelle. 2006. "The Rhetoric of Cells: Understanding Molecular Biology in the Twenty-First Century." *Rhetoric Review* 25 (1): 58–75.

Steffen, Will, Paul J. Crutzen, and John R. McNeill. 2007. "The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature?" *Ambio* 36 (8): 614–21.

Steffen, Will, Jacques Grinevald, Paul J. Crutzen, and John R. McNeill. 2011. "The Anthropocene: Conceptual and Historical Perspectives." *Philosophical Transactions of the Royal Society A* 369: 842–67.

Timofeev-Ressovsky, Nikolay, Karl Zimmer, and Max Delbrück. 1935. "Über die Natur der Genmutation und der Genstruktur." *Nachrichten von der Gesellschaft der Wissenschaften zu Göttingen: Mathematisch-Physikalische Klasse* 1 (13): 190–245.

Tucker, Ken. 2015. "*Zoo*: When Animals Attack Good Actors." Review of *Zoo*. Created by Josh Appelbaum, André Nemec, and Jeff Pinkner. *Yahoo! Entertainment*. June 30. https://www.yahoo.com/entertainment/zoo-review-james-patterson-james-wolk-cbs-122857511375.html.

Vera, Hernán, and Andrew M. Gordon. 2003. *Screen Saviors: Hollywood Fictions of Whiteness*. Lanham, MD: Rowman & Littlefield.

Vint, Sherryl. 2010. *Animal Alterity: Science Fiction and the Question of the Animal*. Liverpool: Liverpool University Press.

Walsby, A. E., and M. J. S. Hodge. 2017. "Schrödinger's Code-Script: Not a Genetic Cipher but a Code of Development." *Studies in History and Philosophy of Biological and Biomedical Sciences* 63: 45–54.

Weheliye, Alexander G. 2014. *Habeas Viscus: Racializing Assemblages, Biopolitics, and Black Feminist Theories of the Human*. Durham, NC: Duke University Press.

Whissel, Kristen. 2014. *Spectacular Digital Effects: CGI and Contemporary Cinema*. Durham, NC: Duke University Press.

Yoxen, E. J. 1979. "Where Does Schroedinger's 'What is Life?' Belong in the History of Molecular Biology?" *History of Science* 17 (1): 17–52.