

WHEN DINOSAURS RULED THE EARTH? DIGITAL ANIMALS, SIMULATION,
AND THE RETURN OF 'REAL NATURE' IN THE *JURASSIC PARK* MOVIES

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When Dinosaurs Ruled the Earth? Digital Animals, Simulation, and the Return of ‘Real Nature’ in the *Jurassic Park* Movies

Abstract

This essay argues that the digital reanimation of dinosaurs in the *Jurassic Park* series not only epitomizes mankind’s tortured relationship with other animal species on this planet, but also demonstrates how technology transforms animals into spectral post-animal beings. Both in its diegesis and in its production, the *Jurassic Park* movie franchise emblemizes humanity’s compulsive desire to control the rest of the planet. This desire has culminated in the most recent addition to the series, in which animatronics were practically completely replaced by digital dinosaurs the filmmakers could control more easily. Yet despite the tangibility, the material reality of the animatronics, throughout the movie series, the spectral dinosaur bodies animated by digital technologies not only seem much more ‘alive’ than their mechanical counterparts, but shape viewers’ conceptions of what dinosaurs are and what they looked like, lending the digital animals a hyperreal quality that stands in stark contrast to their symbolic equation with material nature. In the latest movie, the mosasaurus, I will argue, imagines the return of ‘real’ nature in the face of the artificial nature represented by the *Indominus rex*. However, the mosasaurus, like all other prehistoric animals roaming Jurassic Park and Jurassic World, respectively, is a genetic hybrid, like the *Indominus rex*. In this way, the *Jurassic Park* movie franchise presents a telling example of the conflicted and paradoxical interrelations between technology and spectral animal bodies (and, thus, nature) in the digital age.

1_Hyperreal Dinosaurs: Haunted Humanity?

“Visitors will think the dinosaurs look speeded up, like film running too fast,” remarks chief genetic engineer Henry Wu in Michael Crichton’s novel *Jurassic Park* (1990) when detailing his dissatisfaction with his Frankensteinian creation vis-à-vis Jurassic Park’s founder, John Hammond.¹ Wu’s seemingly unintentional slippage between ontological levels presents an illustrative example of what postmodernism’s poster boy, Jean Baudrillard, referred to as “the generation by models of a real without origin or reality,” for the visitors’ perception of the ‘real’ dinosaurs roaming the park (as imagined by and relayed through Henry Wu) becomes inseparable from the (no longer) extinct animals’ representations in visual media.² Writer Michael Crichton embraces the postmodernist play his character engages in, for the man tasked to engineer dinosaurs which resemble an imagined past reality goes on to underline the paradox he is caught in, for “[t]he past is gone. It can never be re-created. What we’ve done is reconstruct the past — or at least a version of the past.”³ Wu’s words evoke the spatial and temporal distance of the past and acknowledge that the past can only be approached via mediated

encounters; the past is (re)produced in and through media, broadly conceived. However, as Baudrillard has pointed out, “[a]t the limit of this process of reproducibility, the real is not only what can be reproduced, but *that which is always already reproduced*. The hyperreal.”⁴

Like postmodern theory in general, part of Baudrillard’s project was to attack the Enlightenment subject. This “critique of the rational and centered human subject,” Nicholas Spencer has remarked, “constitutes a re-imagining of the relation between human and nonhuman animals.”⁵ Indeed, in an essay on animals, Baudrillard highlights that these nonhuman creatures “were only demoted to the status of inhumanity as reason and humanism progressed.”⁶ This humanism, Tony Davies has quipped, is inherently “imperial,” for all kinds of humanisms “speak of the human race in the accents and the interests of a class, a sex, a race, a genome.” “It is almost impossible,” he continues, “to think of a crime that has not been committed in the name of humanity.”⁷ Baudrillard evidently critiques this ‘rational humanism’ and goes on to emphasize the connections between the oppression and exploitation of nonhuman animals and marginalized human Others in his essay. More importantly, however, he suggests that non-human animals began to disappear from the world prior to the human because (real) animals are expelled from “a world assembled under the hegemony of signs and discourse.”⁸ Baudrillard explains elsewhere that “[i]t’s a question of disappearance, not exhaustion, extinction or extermination,” for human beings “subtly detach” objects “from their primal reality.”⁹ Since “the real” thus “vanishes into the concept,” “[y]ou cannot trust nature” any more,¹⁰ for “global technology,” as Donna Haraway has put it, “denature[s] everything.”¹¹ The increasingly rapid technological progress of the last couple of decades has only speeded up this process and “exclude[d] the natural world to create an artificial world in which we can live on the cusp of fantasy and reality.”¹²

By highlighting the dinosaurs as “pure creations of information science, at both the level of representation (the digitally animated image) and the level of the represented (the fictional cloned creatures produced by biogenetic engineering),” the *Jurassic Park* movies address the ‘reality’ and ‘naturalness’ of the prehistoric animals roaming the park(s) — and our screens.¹³ In fact, *Jurassic Park*’s (1993) constant meta-cinematic equation of the motion picture with the eponymous theme park makes any clear-cut ontological differentiation between our material reality and the diegetic world practically impossible. Indeed, *Jurassic Park*’s dinosaurs are caught in an ontological flux.

In the storyworld, the dinosaurs are materially ‘real.’ However, the movie acknowledges that the animals are “the result of human intervention, industry, and technology,” and “not something already found in nature.”¹⁴ After all, the dinosaurs are not ‘perfect’ clones, for the prehistoric vertebrates are hybrids who were genetically engineered to be female and to die within a few days if they are not fed certain dietary supplements. Outside the diegetic frame, the film’s use of computer-generated dinosaurs “upset[s] the notion that everything within the frame is evidence of an event occurring before the camera,”¹⁵ as “[c]omputer-generated imagery (CGI) manipulates the natural pattern of the reproduction of images.”¹⁶ Digital images do not necessarily generate a reality based on physical reality; they create a different kind of reality.

The latest addition to the *Jurassic Park* franchise (2015) embraces this conflation of (what traditionally should be) different ontologies. The official website pretends that Jurassic World is an actual theme park. The homepage offers information on the park’s opening hours, the start time of the next guided tour at the visitors’ center (timed in relation to real-world time), the current temperature in the park, and links to various social media accounts. In addition, the website features a map of the park, various webcam feeds, and a gallery of visitors’ photos, all of which suggest the park’s physical existence in our material reality. Notably, in his book *Digital Visual Effects in Cinema* (2012), Stephen Prince claims that “[v]isual effects seek to persuade viewers that the effects are real *within the referential terms of the story*.”¹⁷ However, *Jurassic World*’s website seeks to transcend the confines of the storyworld. It employs high-quality digital effects shots from the movie alongside low-quality shots from webcams in order to ontologically anchor Jurassic World in physical reality through the use of media artifacts. Thus, the website exemplifies how the fictional world and the park’s nonhuman inhabitants segue into the everyday world of its users in *trompe-l’œil*-like fashion.

This conflation of different ontological layers implies a “peculiarly contemporary sense of haunting” caused “by the pervasive substitution of the simulated for the real.”¹⁸ *Jurassic Park*’s dinosaurs are monsters, all right.¹⁹ However, their monstrosity is less rooted in their horrifying appearance or their voracious appetite for human meat than in their ontological nebulosity: “[A]n uncanny effect is [...] easily produced when the distinction between imagination and reality is effaced, as when something that we have hitherto regarded as imaginary appears before us in reality,” understood none other than Sigmund Freud nearly a century ago.²⁰

Accordingly, the dinosaurs featured in the *Jurassic Park* franchise are caught in a network of paradoxes — real vs. unreal, animate vs. inanimate, natural vs. artificial, to list just three dualisms the prehistoric animals encapsulate. In this essay, I will explore these conflicting messages. I will focus on *Jurassic Park* and *Jurassic World*, since the latter's extensive referencing of the former movie suggests a partial retconning of the franchise's narrative, for the events occurring in the other two movies of the original trilogy apparently never took place. Yet beyond questions of plot continuity, *Jurassic Park* and *Jurassic World* are united in their meta-cinematic exploration of the entertainment industry. Admittedly, this self-reflexive dimension (which cannot be taken seriously in view of the franchise's status as a commercial juggernaut) is hard to miss and will thus only be of minor relevance here.

More importantly, *Jurassic Park* and *Jurassic World* examine the interrelations between technology and nature largely glossed over in the franchise's other two motion pictures — not only in terms of how technologies shape our understanding of nature, but also in terms of how nature is increasingly displaced into the digital domain. While the movies sometimes perpetuate naïve binaries in this context, they also seem aware of how life on planet Earth is “*entangled*” in “a maze of unexpected associations between heterogeneous elements.”²¹ However, *Jurassic World*, I will argue, falls back on an overly simplistic (but simultaneously paradoxical) idea in its concluding fight between prehistoric animals, as the death of the monstrous *Indominus rex* symbolizes the return of a pre-digital, pre-industrial, pre-modern world; a return to ‘true nature,’ a ‘true nature’ which is, however, deeply entrenched in the techno-scientific imaginary.

2_Spectacular Nature in *Jurassic Park* and *Jurassic World*

“*Jurassic Park*,” Geoff King contends, presents “a good example [...] of the kind of Hollywood blockbuster accused of offering nothing but the spectacular attraction of its special effects.” King goes on to challenge this assumption by emphasizing the movie's “self-consciousness about [its] own status as spectacle,” manifested in the ways in which the movie “foreground[s] the spectacular nature of [*Jurassic Park*'s] attractions.”²² *Jurassic Park*, like so many other digital effects blockbusters that would follow the movie, plays with what Jay David Bolter and Richard Grusin have called the “contradictory imperatives for immediacy and hypermediacy” — the mutual co-dependence of a medium's transparency and its opacity; recipients' willful suspension of

disbelief to conceive of the digital dinosaurs as real and the constant awareness that they are confronted with (re)mediated animal bodies.²³ This self-reflexive layer draws on the very foundations of real-world animal theme parks. Notably, in her book *Spectacular Nature* (1997), Susan G. Davis concludes that “Sea World and places like it are the most ersatz cultural artifacts possible. They are carefully constructed, expensively maintained artificial worlds that most of the time fairly successfully conceal their own extreme artificiality.”²⁴ Similar to how these real-world animal theme parks spectacularize animals in order to create “an atmosphere of distracted enjoyment,” *Jurassic Park* transforms nature into spectacle.²⁵

This process becomes evident very early in the original movie. First, the monstrous velociraptors are introduced in a scene that leaves first-time viewers wondering what might have killed the unnamed worker in the opening scene, followed by a brief scene that hints at how the dinosaurs may have been re-created. Viewers then meet paleontologist Dr. Alan Grant and paleobotanist Dr. Ellie Sattler, as the scene shifts from the jungles of Costa Rica and the Dominican Republic to an excavation site in a desert — the badlands near Snakewater, Montana, to be precise. As Susanne Hamscha has cunningly observed, these opening minutes, in which the lush rainforests of Costa Rica and the Dominican Republic are contrasted with the barren, desert landscape of Montana (filmed in the deserts of southern California) suggest that “untamed nature has ceased to exist on U.S. territory.” In particular, the raptor skeleton Alan and Ellie’s research assistants are uncovering, she continues, “serves as a metaphor for the loss of wilderness [...] and for man’s alienation from nature.”²⁶ Indeed, the displacement of the extinct species from its home in modern-day China to the American heartland metaphorically transforms the United States into a country devoid of nonhuman life.²⁷

The striking contrast between the United States and the exotic — and exoticized — countries not very far away from the American mainland becomes even more pronounced when the scenery moves to the fictional island of Isla Nublar, where the two scientists expect to spend a weekend in a “biological preserve” John Hammond has built.²⁸ Viewers can see a helicopter flying over the North Pacific Ocean to uplifting music. In the chopper, Grant, Sattler, and Hammond are joined by a lawyer representing some of Hammond’s financiers and Dr. Ian Malcolm, a mathematician specializing in chaos theory, who, in his leather jacket and with his extroverted demeanor, seems like an early incarnation of an academic star — a “rock star,” as Hammond puts it.

When the helicopter approaches the island, John Williams' pompous *Jurassic Park* theme, whose simplicity engages viewers on a corporeal as well as cognitive level, sounds. In combination, the visuals focusing on the lush greens of the small island and the music nearly overstimulate the viewers' senses and effectively blow them away. The helicopter makes its way through a canyon, providing additional views of the spectacular environment, until it reaches a picturesque waterfall. The landing zone just a few hundred feet from the waterfall appears to be the only trace of civilization in this paradisiacal place. Subsequently, two jeeps take Hammond and his four guests along a small dirt road, while viewers are presented with a short glimpse of the chopper taking off, seen through an enormous electric fence. The bombastic score counteracts the visuals in this moment, which suggest impending doom. The theme fades into an inspiring tune that conveys the beginning of a journey. Guards close a gate behind the second vehicle; a sign is on the gate, which announces in big letters, "DANGER: 10,000 VOLTS." The sign quite literally declares the island's dangers. Intertextually, the sign's function as a prophet of doom is even supported by the cheerful music, for it echoes the song heard in Steven Spielberg's early monster movie *Jaws* (1975) when the Fourth of July visitors flock to Amity Island, about to become shark food. In addition, the gate and fence indicate that although the island may, at first, have appeared to be untouched by civilization, the characters have actually entered (what Hammond and his company believe to be) a safe, controlled, artificial environment.

Compare this introduction of the original park with *Jurassic World's* opening moments: First, viewers witness the birth of two bipedal carnivores in the sterile environment of a lab. A loving father/mother-figure like John Hammond, who made sure to witness each dinosaur's birth in the original park, is nowhere to be seen. The carnivores seem to be able to adapt the color of their skin to their environment, but this ability only truly transpires in the course of the narrative. In the opening seconds, the change of color is cleverly intercut with a fade to white, which functions as a transition to the next scene, a snowy, albeit sunny, day in Wisconsin, at a seemingly remote single-family home.

The mother, Karen Mitchell, is putting pieces of luggage into the family's mini-van. A cut suddenly puts the audience into the position of the younger son, Gray, who is looking through his ViewFinder, seeing images of dinosaurs taken from *The Lost World* (1925). Gray's shelves are adorned with dozens of dinosaur models. Apparently,

the younger brother represents the ‘target audience’ John Hammond already had in mind for the original park: pre-pubescent boys who are somewhat interested in science, dino-crazy, and relatively easy to impress. Beyond this aspect of characterization, the movie confronts the audience with antiquated stop-motion effects (seen from Gray’s point of view) and toy dinosaurs in this scene. In this way, viewers are asked to retrieve images of dinosaurs from their visual repository before seeing the ‘real thing’ a few minutes later — invited to compare their upcoming (mediated) encounter with dinosaurs with their image repertoire of these nonhuman animals. At the same time, *Jurassic World* not only tips its proverbial hat to one of its earliest predecessors (i.e., *The Lost World*), but also acknowledges how these images have shaped our ideas of what dinosaurs looked like.

Together with his older brother, Zach, Gray is about to spend a week with his aunt Claire, who is the operations manager at Jurassic World. Viewers can see an American Airlines flight landing at Juan Santamaría Airport in Costa Rica before Gray and Zach board a ferry. Aboard the ferry, Gray informs his brother that “[w]hen they first opened, they had eight species. Now they have fourteen herbivores and six carnivores.”²⁹ The childish fascination emanating from these words suggests that bigger is, indeed, better. While the green island serves as a scenic visual backdrop during the final seconds of the journey across the ocean, the low-key music plus the camera’s focus on Zach’s female objects of interest, on the one hand, and the visually impressive ferry, on the other, suggest that the movie’s interests lie elsewhere than in the spectacularization of nature.

A monorail takes the visitors into the park, not only likening the Jurassic World experience to a rollercoaster ride, but also establishing a connection to the original park/movie that transcends the visual replication of the park’s main gate (a visual allusion driven home by an announcer highlighting that the “main gate” was “built from the gate of the original park”). Much like Jurassic Park’s visitors were carted around the park in self-navigating jeeps, Jurassic World’s visitors may take the monorail or a gondola to explore the park, while also having the opportunity to take control of the so-called ‘Gyrospheres’ or go kayaking with a tour guide. The website highlights the safety measures: While the Gyrosphere allows visitors to make their “way through the

Age of the Dinosaurs,” trying to find “Apatosaurus, Parasaurolophus, Stegosaurus, Triceratops and many more,” the park’s “advanced invisible fence technology assures the animals will stay in designated zones without unnecessary bars or cages.”³⁰

The emphasis on the safety measures echoes the movie’s visual language in the opening minutes, which suggests that the visitors’ contact with the park’s animals is meant to be more distanced than in *Jurassic Park* (where contact, however, was not necessarily planned, either). This distance, however, only pertains to the park’s potentially dangerous animals, for unlike its predecessor, *Jurassic World* features a petting zoo, which offers visitors “the thrill of getting up close and personal with baby dinosaurs.”³¹ Apparently, *Jurassic World*’s operators have learned that “positive emotions [...] depend on contact, on the bridging of the distances between the alien species, the faraway, and the self.”³² The positive emotions, accordingly, depend on direct, corporeal contact with the young animals; the affective response to the cute baby dinosaurs.

When, moments later, Gray pulls open the boys’ hotel room’s balcony doors to the *Jurassic Park* theme, viewers do not see the island covered in green forests (as was the case in the first movie); instead, they are invited to marvel at the park, a visually impressive, outstanding example of human creativity and design, which is integrated into, but simultaneously jarringly at odds with, the surrounding ‘natural’ environment. While viewers may roll their eyes in disbelief due to the apparent staging of the scene and the visual excesses, the music still succeeds in sending chills down their spines. Whereas an overly accommodating interpretation (driven by the movie’s sonic layer) may understand the park’s introduction as testament to the interconnections between the man-made world and the surrounding environment, within the larger context of the movie, the spectacular display of the park’s facilities, in fact, underlines a topic undergirding the entire movie (series): *Jurassic World* emblemizes the illusion of humankind’s control over the nonhuman world. Following Anne Rutherford, one may argue that the panorama shot of *Jurassic World* may be “an anthropomorphic moment,” but the spectacular staging is primarily “about the way the motion, texture and sound are experienced across the sensorium of the viewer, the way they stir up the viewer, hook them into the moment on a level of heightened awareness, out of the habitual, into the senses.”³³

Returning to *Jurassic Park*, after leaving the landing zone, the two cars drive through the jungle before they reach a plain, where Hammond’s guests encounter their

first live dinosaur, a moment *Jurassic World*'s panorama alludes to as much as it references Isla Nublar's introduction in the original movie. When the dinosaur appears in the off-screen space, viewers first see the astounded reaction on Alan's face. As the camera zooms in, Alan removes his hat (momentarily abandoning this signifier of Indiana Jones-likeness in another intertextual, intra-Spielberg-*œuvre* reference) and rises to his feet in the back of the jeep. Audiences are offered a close-up shot of his face, as Ellie, studying a leaf, notes that "this species of vermiform has been extinct since the Cretaceous Period; I mean, this thing is obviously..." Alan interrupts Ellie mid-sentence by moving her head. Utter amazement fills her face within a few split-seconds, as she rises to her feet. Finally, viewers are allowed to see what the characters (but, of course, not the actors and actress) have seen all along: a brachiosaurus is a few hundred feet away from the group. In one of the movie's iconic moments, the enormous animal is introduced in a low-angle shot, making it appear even more gigantic than it is. Alan and Ellie feel the urge to get out of the car in order to get up close to the animal, to feel it and connect to it. This intradiegetic gesture mirrors the affective bond the "image of astonishment" establishes between the audience, the movie, and the object of representation.³⁴

As Hamscha has correctly pointed out, by leaving the vehicle, the two scientists cross the "unnatural barrier between them and the wilderness, thus symbolically leaving behind their familiar, mechanical, technology-dominated world," for they "desir[e] to *experience* nature rather than merely *study* it."³⁵ However, their scientific interests quickly overwhelm Alan and Ellie's desire to experience nature directly. After stammering, "It's... it's a dinosaur," Alan begins to scrutinize the animal in front of his very eyes and diagnoses, "Ellie, we can tear up the rule book on cold-bloodedness. It doesn't apply, they're totally wrong! This is a warm-blooded creature." Ellie adds, "This thing doesn't live in a swamp." Ellie and Alan cannot escape their scientific, ultimately human, perspective here. At the same time, their direct encounter with the animal affords them new insights they could have never gained by reading books or academic journals (or, arguably, investigating remains of the long-dead animals). In a way, the movie tries to celebrate the unmediated, primordial encounter with nature (in its man-made form) at this point; however, it simultaneously acknowledges that humanity cannot leave behind anthropocentric ways of conceiving of the world; the two scientists are, in a way, haunted by their humanity.

Tellingly, in his seminal essay “Why Look at Animals?,” John Berger argues that “animals are always the observed. [...] What we know about them is an index of our power, and thus an index of what separates us from them.”³⁶ This statement most definitely applies to the brachiosaurus scene. Although Ellie and Alan are flabbergasted by the sheer “power of this place” and experience a sublime moment, the brachiosaurus is quickly reduced to pieces of information. This process of transforming the corporeal phenomenon into data is typical of biological conceptions of the world, Eugene Thacker has explained: “Modern biological thinking always makes two demands of ‘life itself’: that it be essentially information (or pattern) and that it also be essentially matter (or presence).”³⁷ Ellie and Alan’s decision not to interact with the nonhuman, but rather to encode its form in words testifies to the “hegemonic understanding of ‘life itself’”: Whereas the apparent force of the gigantic animal at first dwarfs the two scientists, the human beings quickly re-assert their power over the animal through their knowledge of it, knowledge which is clearly mono-directional — Ellie and Alan can ‘read’ and comprehend the sauropod, but the nonhuman animal cannot understand the human, at least not in the way a human would.³⁸

While Alan and Ellie are torn between embracing the moment and their scientific curiosity, viewers are invited to gaze at the animal put on spectacular display. Spielberg builds up the audience’s expectations in a classical way: the numerous reaction shots of the various characters first foreshadow things to come and then cue spectators in on their expected reactions. *Jurassic Park* here explicitly reveals that the movie is “about special effects and techniques of visualization;” it meta-cinematically addresses “the relationship between the real and its technological mediation.”³⁹ More importantly, Stephen Prince has explained that since the dinosaurs behave “as if they were corporeal beings subject to Newtonian space,” the digital images “point to [their] [...] existence,” making them “perceptually realistic.”⁴⁰

The shots following the spectacularization of the brachiosaurus support this perceptual realism by authenticating the digital images. Grant turns slightly to the left, as a cut leads to an establishing shot, which reveals the entire scenery: In the background, a group of parasaurolophuses are drinking water at a lake, while two more brachiosauri wade through the water. The parasaurolophuses look up alternately, on guard for a possible attack by a predator. Present-day birds are attracted by the large prehistoric animals, looking for protection, on the one hand, and insects for food, on the other.

“The image,” Robert Baird has remarked, “relies on the visual properties of a high-power telephoto lens, which squeezes foreground and background together and accentuates the effect of haze between the viewer and distant objects.” This technique establishes a connection to wildlife documentaries, for they “frequently rely on telephoto footage to get close to wild animals and to avoid disturbing their behavior.”⁴¹ *Jurassic Park* thus draws on documentary filmmaking in order to authenticate its digital images, while, somewhat paradoxically, simultaneously undermining the purported photographic realism of documentaries by utilizing documentary aesthetics to stage digital dinosaurs. In effect, the movie thereby offers images that not merely mimic reality, but, in fact, create a reality based on mediated images — a hyperreality.

3_Re-Animating Dinosaurs in *Jurassic Park* and *Jurassic World*

Significantly, the first words Alan Grant says in *Jurassic Park* are, “I hate computers.” Following this utterance, one of Alan and Ellie’s assistants introduces the entire team at the excavation site to new computer technology that allows them (and the audience) to see the skeleton of a velociraptor before it has been dug out — “[a] few more years of developing, and we won’t even have to dig anymore,” notes the assistant. Alan retorts, “[w]here’s the fun in that?” Alan is thereby characterized as an old-school paleontologist who clearly prefers the tangible, material reality of fossils to computer simulations and who would rather not witness the digital turn. However, when Ellie starts analyzing the image (displayed on an analog display), Alan quickly overcomes his adversity, concluding his examination by saying, “[I]ook at the half-moon shaped bone in the wrist. It’s no wonder some of these boys learned to fly.” As the workers begin to laugh, he stresses, “dinosaurs have more in common with present-day birds than they do with reptiles.” A boy is not impressed by Grant’s knowledge of evolution. Alan, not amused by the kid’s backtalk, goes on to suggest ways in which velociraptors might injure and kill the boy, concluding his little speech by saying, “try to show a little respect.” These final words capture the premise of the entire movie; indeed, Ellie echoes the line after chaos has broken out in the park, telling Hammond, “I was overwhelmed by the power of this place, but I made a mistake, too. I didn’t have enough respect for that power — and it’s out now!” Yet beyond foreshadowing that the “lack of humility before nature,” as Ian puts it, both bore and destroyed the park, the scene in the camp illustrates the displacement of nonhuman animals into the digital sphere — even the

fossils recalling the dinosaurs' past existence need no longer be 'real,' but may be simulated on a computer screen.

This penetration of nature by technology is made nowhere as explicit as in a few frames toward the end of the movie when the velociraptors gain access to the park's control center. As they are plowing through the room, one of them inadvertently launches a program and starts a projector, which, consequently, projects DNA code onto the raptor's skin. W. J. T. Mitchell has pointed out that this effective semiotization of the animal's body highlights that "creatures that previously existed only in pictorial or sculptural recreations have now been literally resurrected from [...] species extinction."⁴² Indeed, Mitchell's reference to extinction touches on a point the movie explicitly addresses: When confronted with various points of critique for both his belief that he can control the re-animated dinosaurs and his "rape of the natural world," as Ian puts it, Hammond stresses, "Condors are on the verge of extinction. If I was to create a flock of condors on this island, you wouldn't have anything to say." Jurassic Park's founder raises an important point here, for condors, as keystone species, have an enormous impact on their ecosystems. If they were to die out, the consequences on their environments would be impossible to foresee and may, in fact, be disastrous. However, Malcolm counters, dinosaurs were not "obliterated by deforestation or the building of a dam." Indeed, as Ursula Heise has diagnosed, "[u]nlike condors, whales, or panda bears, [...] dinosaurs in a late-twentieth-century setting are figures of excess rather than lack; they are not missing from any existing ecosystem but exceed their environment."⁴³

In film studies, this excess has repeatedly been linked to spectacle. The dinosaurs' spectacular nature invites spectators "to linger over devices longer than their structured fiction would warrant," thereby turning the projected images into "a perceptual field of structures that the viewer is free to study at length, going beyond the strictly functional aspects."⁴⁴ On the other hand, transforming nonhuman animals into pure spectacle simultaneously highlights and contributes to their disappearance from the everyday experiences of First Worlders. "Animals," Akira Mizuta Lippit has concluded, instead "found a proper habitat [...] in the recording devices of the technological media," which "allowed modern culture to preserve animals."⁴⁵ The nonhuman animals, accordingly, have taken on spectral form, as a "non-present present, this being-there of an absent or departed one."⁴⁶

This narrative of nonhuman animals' disappearance from the real world and the creatures' attendant relocation into databases is brought to its logical conclusion in the opening moments of *Jurassic World*. After the title screen, a black, claw-armed foot thuds to the ground, echoing the sound effects used for the dinosaurs' footsteps in the first movie. However, the animal seen in this moment is not a dinosaur, as most viewers will initially think, but a bird. Beyond drawing on the evolutionary connections between present-day birds and dinosaurs, the intra-franchise nod picks up on the conclusion of the first movie, which showed pelicans flying over the ocean, suggesting that *Jurassic World* is the 'true' follow-up to *Jurassic Park*. More importantly, unlike the pelicans seen in *Jurassic Park*'s conclusion, the bird in *Jurassic World*'s opening is a digital creature. In fact, the movie flaunts the bird's digital nature, as the creature does not blend in well with its environment. In this way, the digital bird authenticates the digital dinosaurs — which are, like the bird, digital animals. Like the dinosaurs, the bird is no longer a material being present in the pro-filmic, material reality and then caught on tape; rather, the animal is a creation, displaced from material reality, born in computer software, and in a process of incessant becoming due to its coded form.

If one understands the digital creatures as symbols of species extinction caused by humankind, one should not ignore the fact that “[d]inosaurs had their shot and nature selected them for extinction,” as Malcolm puts it. Now, if a meteor crashing on Earth and causing radical changes to the planet's climate is a way of nature 'selecting' specific species for extinction, then the evolution of *Homo sapiens sapiens* and the species' eventual dominance of the planet could also be considered a natural process certain species just could not adapt to. This line of thinking would turn humanity's rise to the top of the food chain and the attendant displacement and even eradication of other species into a story about the survival of the fittest. In other words, whereas Heise has concluded that *Jurassic Park*'s “fantastic extrapolation of currently available genetic engineering techniques” suggests that “no loss of biodiversity need be permanent, because extinct species can be brought back at will,”⁴⁷ I would argue that in view of the lack of a gigantic storage of DNA samples of all creatures roaming the planet, the movie opens up an even more dangerous reading: humanity is just another agent of nature and any anthropogenic action, accordingly, natural. Thus conceived, humankind becomes a part of the Earth's biosphere, which undermines “the dualism that sets humanity and nature at opposite poles.”⁴⁸ However, this understanding definitely does not

advance an environmentalist agenda. Indeed, this mis-integration of humanity in the complex natural systems governing the planet “leave[s] [...] little hope of discovering what an ethical, sustainable, *honorable* human place in nature might actually look like.”⁴⁹

Yet beyond raising the issue of species extinction, the DNA sequence projected onto the raptor emphasizes the coded nature of the nonhuman animal on another level: the raptor is a digital visual effect, made up of nothing but sequences of 0s and 1s. The explicitly ‘textualized,’ coded animal body underlines the simulacral quality of the digital animals — “the genetic code,” Baudrillard argued, presents the perfection of the order of simulacra: “At the limits of an always more extensive abolition of references and finalities, of the loss of resemblances and designation, we find the digital program-sign, whose value is purely tactical [...] and whose structure is that of macro-molecular code of command and control.”⁵⁰ Indeed, the code embodies scientists’ “control over life through the pristine metalevel of information: through control of the word, or the DNA sequence.”⁵¹ This control over life seems nearly all-encompassing, as cracking the code of life even allows for the resurrection of extinct animals.

However, in the context of film production, this notion of controlling life may take on an entirely different connotation. Erica Fudge has correctly pointed out that the introduction of digital visual effects meant that the animals seen on the silver screen (or television) were “[n]o longer limited by the real animal.” Digital technologies “allow us to scan and refigure the real animal to make it exactly what we please.”⁵² Fudge’s observation echoes a conclusion *Jurassic Park*’s ‘dinosaur supervisor’ Phil Tippett drew during the film’s production. With his background in stop-motion animation, Tippett recognized that the CGI effects Spielberg switched to about halfway through the production meant that they were “no longer constrained by materiality.”⁵³ Of course, for a movie that sought “to bring these grand creatures back to life,” the advancements in digital technologies in the early 1990s were instrumental to its project.⁵⁴ As Prince has explained,

digital effects are more sensually immersive than their analog counterparts; lighting is organic and consistent across the layers of an image blend, and scene action can be staged with much greater Z-axis articulation than in the analog era, when the image planes on which live action, miniatures, and stop-motion puppetry were filmed remained visibly separate.⁵⁵

However, the realism of *Jurassic Park*'s dinosaurs resides in their life-likeness. Indeed, following Kristen Whissel, in order for "characters and life-forms" to "appear on-screen as discrete beings that are equally alive and consistently animate," the production team needed to "overcome the ontological differences between live-action actors, binary code, and inanimate matter."⁵⁶ This statement might sound contradictory, as it appears to re-introduce the question of mimesis to the discussion. However, the digital dinosaurs lack referents in material reality. As a result, animating the animals means producing a life-likeness without any likeness in physical reality to base it on; the digital dinosaurs' being-alive was created through the proxy of animals alive today. For example, *Jurassic Park*'s gallimimuses and their movements were modeled after ostriches, while the herd's direction changes were based on studies of other bird species. Accordingly, the digital dinosaurs' life-likeness was, in fact, created by removing the digital creatures from 'real' dinosaurs.

Fudge's quotation above raises another important point: digital animals and digital effects are relatively easy to control (unlike real animals and special effects). Indeed, as Lisa Purse has explained, digital cinema "facilitates the manipulation of every pixel that makes up [the] moving image."⁵⁷ As a result, "every bit of reality" used for a digital movie is under strict control "so as to erase what doesn't fit and to replace it with more suitable material," all under the final objective of "maintaining the integrity of the discourse and [...] keeping it well-ordered, monologic, and sovereign."⁵⁸ It does not require a huge stretch of the imagination to connect this far-reaching control over the filmmaking process to contemporary *auteur* figures. No doubt, despite (or maybe because of) his movies' appeal to the masses, Steven Spielberg ranks among these larger-than-life directors. And although *Jurassic Park* is based on Michael Crichton's novel of the same title, Spielberg does not fail to emphasize that the cinematic adaptation was guided by his vision: "I never thought I wanted to do a dinosaur movie better than anyone else's, but I did want my dinosaur movie to be the most realistic of them all. I wanted the audience to say, 'I really believe this could happen today.' [...] I wanted my dinosaurs to be animals."⁵⁹ Herein lies one of the defining paradoxes of *Jurassic Park*: The events unfolding in the storyworld suggest that an individual's monomania and his control mania are bound to cause destruction; in terms of production, Spielberg's near-almighty control over practically every step of the movie's production led to a product that set a worldwide box office record.

4_The Mosasaurus and the Return of ‘Nature’

While Dr. Wu already highlighted the hybrid nature of the cloned dinosaurs in the original movie, in *Jurassic World*, tampering with ‘real’ nature becomes one of the central themes. The park’s latest addition (expected to become its main attraction), the *Indominus rex*, was “not bred;” rather, the animal “was designed,” as Claire clarifies in the movie’s opening minutes. The I-rex is a hybrid composed of the DNA of a number of different animals, including velociraptors, tyrannosauri, cuttlefish, tree frogs, and snakes. As Dr. Henry Wu opines in the movie, at the end of the day, this mixing of species is not so different from what the parks’ genetic engineers had done for years, for they “always filled gaps in the genome with the DNA of other animals.” However, even though “[n]othing in Jurassic World is natural,” as Wu stresses, *Jurassic World* suggests that the indominus is, in fact, quite different from the other creatures roaming the park; the *Indominus rex* is othered vis-à-vis the other dinosaurs. She is, as Richard Dyer has put it, “the monstrous product of improper biological procreation.”⁶⁰ The park’s other inhabitants, on the other hand, are “real dinosaurs,” as Lowery Cruthers (an employee working in the park’s control room) remarks.

It is no coincidence that the *Indominus rex* ends up squaring off against the park/movie franchise’s past (and present) main attractions in the movie’s closing minutes. First, she takes on the group of raptors trained by ‘raptor whisperer’ Owen Grady. When the unnatural creation simply overpowers the velociraptors, Claire tells Lowery to free the T-rex. However, the *Indominus rex* proves too powerful for the tyrannosaurus. Only when one of the raptors makes a dramatic re-appearance and — for whatever reason — teams up with the T-rex does the tide turn. However, neither the T-rex, nor the raptor, nor their unnatural alliance can put the I-rex down for good. The indominus comes to embody “Nature Plus,” as Whissel has called it: Just as the indominus seems to get adapted to fighting two foes, the mosasaurus has her sudden and bombastic appearance, attacking the I-rex from behind and dragging her into the blue depths.⁶¹ While the indominus is shown to be more than just a force of nature, the ‘real’ dinosaurs in the end emerge victorious.

After the apparently happy ending, the camera pans across the park one final time. Jurassic World is destroyed and devoid of human life. However, in the midst of the ruins, the camera discovers the T-rex, who looks over the park and growls. Richard Dyer has concluded that this ending not only “signifies an end to meddling and a start

to leaving the creatures in peace on their island,” but also imagines a future “without humans at all.”⁶² The important point is, however that if there had been no ‘meddling,’ the dinosaurs would not even exist — both in the storyworld and outside it. Without a doubt, the tyrannosaurus is a human creation. Accordingly, if *Jurassic World*’s closing moments attempt to imagine a future without humans, the ending acknowledges the long-term effects of humankind’s actions on the planet’s ecosystems, for even if humanity were to disappear, the species’ presence would still haunt the planet.

In addition, *Jurassic World*’s conclusion echoes *Jurassic Park*’s, in which Alan looks out of the helicopter that has saved the survivors and sees some pelicans flying over the ocean. The original movie’s ending underlines that the film’s dinosaurs have invariably changed our understanding of present-day animals. Tellingly, when the T-rex kills a gallimimus, Grant stresses, “I bet you’ll never look at birds the same way again.” In the end, the dinosaurs are creations, their lives made possible by advancements in digital technologies, and in this regard, they are not so different from the non-human animal species cohabiting our world, who increasingly only inhabit our world in digital — spectral — form.

“The boundaries between the categories of the natural and the cultural,” Rosi Braidotti has remarked, “have been displaced and to a large extent blurred by the effects of scientific and technological advances.”⁶³ Technologies shape the First-World experience to the point that the interconnections between the Self and nonhuman others — both animate and inanimate — become central aspects of life. Indeed, the *Jurassic Park* franchise emphasizes that this ‘life’ is increasingly controlled by technology not only because autonomous machines assume agency in our world, but also because in major projects such as the Human Genome Project, life is immaterialized, reduced to code, and stored in a database. This process seeks to afford life (human life, in particular) an immortal quality — stored in a database, hopefully for eternity, always ready to be retrieved and re-created. In this way, humankind seeks to transcend its minor role in deep time as this “momentary blip in a history and cosmology that remains fundamentally indifferent to this temporary eruption” that is human existence.⁶⁴

Confronted with a clade that existed for some 180 million years and dominated the planet for about 130 million years, humanity’s insignificance should dawn on the species. However, in the *Jurassic Park* movies, humankind seeks to transcend its marginal role in geological time and wants to perform its self-proclaimed exceptionalist role on

the planet and the attendant illusory control over life — with not-too-surprising results. Accordingly, the *Jurassic Park* franchise asks viewers to not simply “show a little respect,” to quote Dr. Alan Grant, for the nonhuman lifeforms and other nonhuman entities on our planet, but to grasp how insignificant, yet simultaneously impactful, our species is.

Endnotes

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- ³ Crichton, *Jurassic Park* (cf. note 1), 121–122.
- ⁴ Jean Baudrillard, *Symbolic Exchange and Death* (Thousand Oaks, CA: Sage, 1993), 73; italics in original.
- ⁵ Nicholas Spencer, “Inhuman(e) Subjects: Postmodern Theory and Contemporary Animal Liberation Fiction,” in *From Virgin Land to Disney World: Nature and Its Discontents in the USA of Yesterday and Today*, ed. Bernd Herzogenrath (Amsterdam: Rodopi, 2001), 187–208, here: 187.
- ⁶ Jean Baudrillard, “The Animals: Territory and Metamorphosis,” trans. Sheila Faria Glaser, in *Simulacra and Simulation* (Ann Arbor: University of Michigan Press, 1993), 129–141, here: 133.
- ⁷ Tony Davies, *Humanism* (London: Routledge, 1997), 131.
- ⁸ Baudrillard, “Precession” (cf. note 2), 137.
- ⁹ Jean Baudrillard, “On Disappearance,” in *Fatal Theories*, eds. David B. Clarke et al. (Abingdon: Routledge, 2009), 24–29, here: 24–25.
- ¹⁰ Jean Baudrillard, *The Perfect Crime*, trans. Chris Turner (London: Verso, 1996), 119
- ¹¹ Donna Jeanne Haraway, “The Promises of Monsters,” in *Cultural Studies*, eds. Lawrence Grossberg, Cary Nelson, and Paula A. Treichler (New York: Routledge, 1992), 295–337, here: 295.
- ¹² John Tiffin, “HyperLeisure,” in *Hyperreality: Paradigm for the Third Century*, eds. John Tiffin and Nobuyoshi Terashima (London: Routledge, 2001), 126–141, here: 133.
- ¹³ William John Thomas Mitchell, *The Last Dinosaur Book: The Life and Times of a Cultural Icon*, 2nd ed. (Chicago: University of Chicago Press, 1998), 213.
- ¹⁴ Eugene Thacker, *The Global Genome: Biotechnology, Politics, and Culture* (Cambridge, MA: MIT Press, 2005), xviii.
- ¹⁵ Dan North, *Performing Illusions: Cinema, Special Effects and the Virtual Actor* (London: Wallflower Press, 2008), 4.
- ¹⁶ Randy Laist, “Hypersaurus Rex: Recombinant Reality in *Jurassic Park*,” in *Unnatural Reproductions and Monstrosity: The Birth of the Monster in Literature, Film, and Media*, eds. Andrea Wood and Brandy Schillace (Amherst, NY: Cambria Press, 2014), Kindle edition, loc. 3204.
- ¹⁷ Stephen Prince, *Digital Visual Effects in Cinema: The Seduction of Reality* (New Brunswick, NJ: Rutgers University Press, 2012), 33; my emphasis.

- 18 Anthony Vidler, *The Architectural Uncanny: Essays on the Modern Unhomely* (Cambridge, MA: MIT Press, 1992), 10.
- 19 In an interview, Rick Carter stressed, “[w]hat we tried to do was find the animal in the dinosaur as opposed to the monster in the dinosaur.” Spielberg added, “I wanted my dinosaurs to be animals. I wouldn’t even let anyone call them monsters or creatures.” (Qtd. in Don Shay and Jody Duncan, *The Making of Jurassic Park: An Adventure 65 Million Years in the Making* (New York: Ballantine Books, 1993), 14–16).
- 20 Sigmund Freud, “The ‘Uncanny’,” trans. James Strachey, Anna Freud, Alix Strachey, and Alan Tyson, in *The Standard Edition of the Complete Psychological Works of Sigmund Freud: An Infantile Neurosis and Other Works*. Vol. 17, ed. James Strachey (London: Vintage, 2001), 217–256, here: 244.
- 21 Bruno Latour, “Is Re-Modernization Occurring — And If So, How to Prove It? A Commentary on Ulrich Beck,” in *Theory, Culture & Society* 20.2 (2003), 35–48, here: 36. On the complexity of Jurassic Park’s ecosystem, see also Alexander Scherr’s contribution to the first issue of *On_Culture*, “[Emergent Emergencies in Complex Ecosystems: Reflections on the Limits of Narrative Cognition and a Revisiting of Michael Crichton’s Jurassic Park \(1990\)](#)” (2016).
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- 24 Susan G. Davis, *Spectacular Nature: Corporate Culture and the Sea World Experience* (Berkeley: University of California Press, 1997), 8.
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- 27 The excavation site’s location in the United States and the skeleton’s size in the movie reference *Deinonychus antirrhopus* rather than the genus *Velociraptor*. Both velociraptor species recognized today (one of which was only uncovered in 2008) were less than two feet high at the hip (not the six feet suggested by Grant when seeing the skeleton) and lived in what today is the Gobi Desert.
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- 29 *Jurassic World*, dir. Colin Trevorrow (Universal City, CA: Universal, 2015), Blu-Ray.
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- 37 Thacker, *Global Genome* (cf. note 14), xvii.

- 38 Thacker *Global Genome* (cf. note 14), xvi.
- 39 North, *Performing Illusions* (cf. note 15), 2; italics in original.
- 40 Prince, *Digital Visual Effects* (cf. note 17), 150, 32.
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- 47 Heise, “Extinction to Electronics” (cf. note 43), 63.
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- 52 Erica Fudge, *Animal* (London: Reaktion, 2002), Kindle edition, loc. 1314.
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- 57 Lisa Purse, *Digital Imaging in Popular Cinema* (Edinburgh: Edinburgh University Press, 2013), 3.
- 58 Jean-Pierre Geuens, “The Digital World Picture,” in *Film Quarterly* 55.4 (2002), 16–27, here: 21. See also Scott Bukatman’s comment that “[a]nimation as an *idea* speaks to life, autonomy, movement, freedom, while animation as a *mode of production* speaks to division of labor, precision of control, abundances of preplanning, the preclusion of the random” (Scott Bukatman, *Poetics of Slumberland: Animated Spirits and the Animating Spirit* (Berkeley: University of California Press, 2012), 108; emphasis in original).
- 59 Steven Spielberg qtd. in Shay and Duncan, *The Making of Jurassic Park* (cf. note 19), 15.
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